



- Making a Difference -

Scientific Capacity Building & Enhancement for Sustainable Development in Developing Countries

Guidelines for Environmental Education Focusing on Environmental Ethics and the Human Dimensions of Global Change

**Final Report for APN CAPaBLE Project:
2005-CB02-NMY-Taniguchi**

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Final Report submitted to APN**

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Overview of project work and outcomes

Non-technical summary

Objectives

The objective of the symposium is to establish preliminary international guidelines for environmental education and, in the process, establish initial partnerships in the Asia-Pacific region between many countries including Australia, Canada, India, Nepal, Thailand, Malaysia and Japan.

The project aims:

- To make full use of participating countries experience & knowledge of global change research to formulate guidelines for environmental education & sustainable development
- To fill the existing gaps among teachers & other stakeholders involved such as global change experts, decision-makers; etc., by developing methods/modules for environmental education that can be used as a basis for countries in Asia.
- To discuss how to mobilise these experiences particularly, for this project, in the Asian context
- To discuss the potential roles of networks in the Asia-Pacific region with respect to environmental education and sustainable development and begin to formulate/develop guidelines for environmental education

Amount received and number years supported

The Grant awarded to this project was:

- US\$ 70,000 for 2 years, 2005-2007

Work undertaken

1. International Symposium & Workshops:
 - (1) Establishing Guidelines for Environmental Education Based on Environmental Ethics(I), 28-30 January 2006, in Kobe, Japan
 - (2) Establishing Guidelines for Environmental Education Based on Environmental Ethics (II) , 19-20 August 2006, in Bangkok, Thailand
 - (3) Establishing Guidelines for Environmental Education Based on Environmental Ethics (III), 3-4 May 2007, in Kuala Lumpur, Malaysia
2. Model Programme for Environmental Education: Perspective of Various Cultures
3. Case Studies of Implementation: Environmental Education in the Asia-Pacific Region
4. Demonstration: Teleconference and International Network of Environmental Education Sharing the university curriculum

Results

The outcomes of three sets of symposia and workshops were available to formulate guidelines that can be used by countries in Asia to develop environmental education guidelines to suit the needs of their own countries.

- (1) In the first international symposium from January 28th-30th, 2006 in Kobe, Japan, there are 314 participants, in order to assist in the development and promotion of knowledge of natural science related to global change research.

On Day 1 of the symposium, Keynote Speech I Development of Environmental Education in Japanese Museum by Dr. Shiro NAKAGAWA, President of Japanese Association of Museums, Keynote Speech II Proposal of Environmental Education

Based on Religious Ethos by Prof. Azizan BAHARUDDIN, Malaya University in Malaysia, Keynote Speech III Development of Environmental Education in Japan and Environmental Education Based on Environmental Ethics by Prof. Fumiaki TANIGUCHI, Konan University in Japan were presented. The focus of these speeches and a panel discussion was the Standardization of Global Guidelines for Environmental Education Based on Environmental Ethics made by pioneering scholars and practitioners from Asia-Pacific countries.

On Day 2, two workshops a second panel discussion were held in Konan University. The first was on developmental procedures to create materials for coastal environmental education, and the second focused on demonstrating e-Learning activities in environmental education programmes between universities. The aim of the workshops was to improve the quality of teaching and training skills for environmental education for the general public, teachers, NGOs and local government officials. A second panel discussion focused on Common Materials for Environmental Education in the Asia-Pacific Region.

On Day 3, the organizers promoted the establishment of preliminary Guidelines for Environmental Education Based on Environmental Ethics. These guidelines were generated from a specialists' study meeting and incorporated environmental education as well as outline the role of networks in the region in implementing the guidelines at local, national and regional levels.

(2) In the second symposium in the 5th international conference of health behavioural science *Education on Health and Environment: Integrate Medicine and Environmental Education* from August 19th-20th, 2006, in Bangkok, Thailand coorganised by the Japan Academy for Health Behavioural Science & International Association of Earth-Environment and Global-Citizen as satellite symposia (Forum) B-1 & B-2.

The satellite symposium (forum) B-1 was Common Materials for Environmental Education in the Asia-Pacific Region, coordinated by Prof. Azizan Baharuddin, of Malaya University, Malaysia.

The satellite symposium II (forum) B-2 was Demonstration of Environmental Education Using On-line TV net Meeting System Between Japan and Thailand, coordinated by Professor Fumiaki Taniguchi of Konan University, Japan.

These symposia were attended by over 150 people from Canada, Japan, Malaysia, Nepal and Thailand, expanding internal network broadly.

(3) In the third symposium from May 3rd -4th, 2007 in Kuala Lumpur, Malaysia, about 50 Malaysian environmentalists attended the symposium and workshops. They were exposed to the latest knowledge, methodologies and case studies in environmental education regarding orientation of the framework for guidelines of environmental education on practice of environmental education and model programme for environmental education: perspective of various cultures in Thailand, Malaysia, Canada and Japan.

In conclusion Japan, Malaysia, Thailand, Nepal and Canada become members that will consist the Asia-Pacific network by e-Learning/teleconference and cooperate to implement environmental education according to using the common guidelines in near future.

Relevance to the APN CAPaBLE Programme and its Objectives

In the first symposium, we discussed that we progressed the Asia-Pacific Region Network, shared the basic terms and materials on environmental education, standardized environmental education crossing the various study fields, such as

natural, social and human sciences. Sharing the basic terms and materials are strong common tools of communication beyond various cultures and different studies for capacity building on global change research and sustainable development.

In the second symposium we tried to make a demonstration to expand environmental education network by using on-line TV net connecting Phranakhon Rajabhat University in Thailand with Konan University in Japan.

It was very successful between Japan and Thailand. We feel confidence to expand on-line TV network to connect in the Asian-Pacific Area for global change.

In the third symposium we acquired the new information on environmental education in Malaysia holding panel discussions, keynote presentations, workshops and a post conference tour. As for the potential roles of networks in the Asian-Pacific region with respect to environmental education and sustainable development, enlightening the awareness of environment by common guidelines filled the existing gaps among teachers & other stakeholders involved such as global change experts, decision-makers, etc..

We have finished three proceedings and will sum them up to one book for publication in this fall

As for relevance to the APN CAPaBLE programme and its objectives, in Japan, Thailand and Malaysia we could actually know the different cultures, customs, religions and climates by eco-tour and discussions. So programme and its objective should be set more concrete and specific.

If these works undertaken were convincing, we could surely contribute to the establishment of guidelines for environmental education focusing on environmental ethics.

Self evaluation

Most of the events concerning the symposia and workshops were good, however to heighten and deepen the each theme is still difficult. Because the conditions of, for instance, country affairs and educational systems are diverse, and also the themes depending on different environments are specific.

So as to make the common guidelines as model programmes, teachers training and their knowledge should be more required by the general systems.

Quality and experiences of teachers and instructors are also different case by case. Teachers and instructors training are more needed.

Mechanism of on-line system should be more improved. What is more, contents are very important. Because, expansion of on-line TV network which aimed for connecting three countries was half successful. Because, in Malaysia it was connected only between Malaysia and Thailand, not with Japan.

However, making technical terms and materials common by model programme is, may be said, established.

Potential for further work

We are sure of four potentials for the future work as follows.

- (1) Guidelines for environmental education focusing on environmental ethics afford us the same step to the goal of global environmental issues to solve including the human dimensions of global change.
- (2) For the solution of environmental problems we need to educate potentiality of young generation and enlighten the citizen.
- (3) Guidelines for environmental education are a common flexible framework and could set up the Asia Pacific network of environmental education.
- (4) Using TV network system will acceleratly work to connect the Asian-Pacific

region for environmental education

Publications

- (1) Programme of International Symposium: Establishing Guidelines for Environmental Education Based on Environmental Ethics
- (2) 3 proceedings of International Symposium: Establishing Guidelines for Environmental Education Based on Environmental Ethics (I), (II) & (III)
- (3) A book on Establishing Guidelines for Environmental Education based on Environmental Ethics: publication is supposed in the fall in 2008.

Acknowledgments

We owed many thanks to APN Fund to progress environmental education and environmental ethics developing.

YBhg. Datuk Hajah Rosnani Ibarahim, Director General Department of Environment, Malaysia, Eighth Residential College, Rimbun Dahan, Kuala Selangor Nature Park, All Paper Presenters and Chairpersons, All Participants and everyone involved in making this occasion a success.

Technical Report

Preface

The project is planned for approximately two years from November, 2005 to December 2007, and included three "sets" of international symposia and workshops the first in Kobe, Japan, and the second in Bangkok, Thailand and the third in Kuala Lumpur, Malaysia.

The objectives of the project of Guidelines for Environmental Education Focusing on Environmental Ethics and Human Dimension of Global Change were carried out by the cooperation between Konan University, Japan and University of Malaya, Malaysia.

Table of Contents

Preface	7
1. Introduction	
(1)Overview	8
(2)Objectives	8
2. Methodology	
(1)Symposia and workshops	9
(2)Methods	9
3. Results & Discussion	
(1)Work undertaken	9
(2)Results	10
(3)Discussions	13
4. Conclusions	
(1)Outcomes	15
(2)Relevance to the APN CAPaBLE Programme and its Objectives	16
(3)Self evaluation	17
(4)Conclusions	17
5. Future Directions	
(1)Potential for further work	17
(2)Publications	18
(3)The model guideline for environmental education based on environmental ethics	18
Appendices	36
Appendices 1: Agenda (I)	
Appendices 2: Profiles of the Speakers	
Appendices 3: Agenda (II)	
Appendices 4: Profiles of the Speakers	
Appendices 5: Agenda (III)	

1. Introduction

(1) Overview

Environmental Education is implemented as a major approach for sustainable development and is the interaction between the science community, policy-makers and those involved in the education sectors (primary, secondary & tertiary). In this sense, environmental education is an important approach to materialise one of APN (Asia-Pacific Network for Global Change Research)'s goals of linking science and policy.

In order to assist in the development and promotion of knowledge of natural science related to global change research, the International Symposia and workshops aim to share viewpoints of knowledge and expertise from invited guests in the fields of natural sciences, social sciences, and human sciences.

Studies on environmental education have not yet been sufficiently integrated to solve environmental issues. For the purpose of having a common understanding of environmental issues based on environmental ethics, internationally recognized guidelines for environmental education need to be established. The symposia and workshops aim to establish preliminary guidelines and discuss the role of networks in the Asia-Pacific region in environmental education. "Environmental Education" is embedded into all "natural, social, and human sciences."

The project was conducted jointly by the Konan University, Kobe, Japan and the University of Malaya, Malaysia. Professor Taniguchi took the lead in organizing the first symposium and to be held in January, 2006 in Kobe and the second one was held in August, 2006 in Bangkok, Thailand. Professor Baharuddin took the lead in the second year where the third symposium and workshops was held in Malaysia.

The project and its activities focused around the symposia/workshops: Key note speeches, Lectures by leading researchers, Panel discussions, Hands-on training and workshops, Development of materials, establishing an outline for the role of networks in environmental education and dissemination activities. The symposia and workshops in the second year further developed the outcomes of the first set of symposia and workshops.

(2) Objectives

The objective of the symposium is to establish preliminary international guidelines for environmental education and, in the process, establish initial partnerships in the Asia-Pacific region between many countries including Australia, Canada, India, Nepal, Thailand, Malaysia and Japan.

The project aims:

- 1) To make full use of participating countries experience & knowledge of global change research to formulate guidelines for environmental education & sustainable development
- 2) To fill the existing gaps among teachers & other stakeholders involved such as global change experts, decision-makers; etc., by developing methods/modules for environmental education that can be used as a basis for countries in Asia.
- 3) To discuss how to mobilise these experiences particularly, for this project, in the Asian context

2. Methodology

(1) Symposia and workshops are:

- 1) To share the experiences of participating countries in environmental education & sustainable development.
- 2) To discuss how to mobilise these experiences particularly, for this project, in the Asian context.
- 3) To discuss the potential roles of networks in the Asia-Pacific region with respect to environmental education and sustainable development and begin to formulate/develop guidelines for environmental education.
- 4) That the outcomes of both sets of symposia and workshops will be used to formulate guidelines that can be used by countries in Asia to develop environmental education guidelines to suit the needs of their own countries.

(2) Methods are as follows:

- 1) To hold a symposium and workshops that will:
 - a) Elaborate the concept of environmental education that focuses on ethics and the human dimensions of global change.
 - b) Elaborate and identify the potential role of networks such as APN in the region.
 - c) Establish skeletal guidelines for environmental education that are flexible to suit the needs of countries in the Asian region.
- 2) To hold short courses/workshops and site visits in order to: develop Curriculum and Materials, and develop documentaries on DVD/CD-ROM.
- 3) To introduce curricula and models that can be used in mainstream education systems (curricula will be written in a way that will allow straightforward adaptation for the needs of individual countries).
- 4) To publish and disseminate information on environmental education and sustainable development that highlights the latest discoveries, techniques, technologies, and strategies for environmental sustainability.
- 5) To establish a network of resource persons for environmental education and sustainability.
- 6) To establish empowered communities who have increased awareness of their roles and contributions to environmental and sustainable issues.

3. Results & Discussion

(1) Work undertaken

1) International Symposium & Workshops:

❶ Establishing Guidelines for Environmental Education Based on Environmental Ethics(I), 28-30 January 2006, in Kobe, Japan

<Keynote speeches>

• Keynote Speech I

Development of Environmental Education in Japanese Museums: Guidelines for Museums

Shiro NAKAGAWA

• Keynote Speech II

Proposal of Environmental Education Based on Religious Ethos: Environmental Education Based on Common Values in Diverse Cultures and Religions

Azizan BAHARUDDIN

• Keynote Speech III

Development of Environmental Education in Japan and Environmental Education Based on Environmental Ethics: Regarding Fundamental, Themes of Nature, Life, Agriculture, Culture, Religion and Ethics

Fumiaki TANIGUCHI

- Keynote Speech IV
Towards Environmental Ethics Principles in Our Global World
Gloria SNIVELY
 - <Panel discussions>
 - Panel Discussion I: Towards Standardization of Global Guidelines for Environmental Education
 - Panel Discussion II: Common Materials for Environmental Education in the Asia-Pacific Region
 - <Workshops>
 - Workshop A: Thinking Like an Ocean: Nurturing a Sense of Wonder and Co-existence with Nature in Children
Gloria SNIVELY
 - Workshop B: Demonstration of Environmental Education Using On-line TV-net Meeting System: Application of a TV-net Meeting System through the Internet for ESD (Education for Sustainable Development)
Kazuyuki MIKAMI
 - <Round Table> Expert Meeting on International Collaborative Study on Guidelines for Environmental Education
 - <Post conference tour> to the Aina National Government Park in 2006, and to the Kuala Selangor Nature park in 2007
 - ② Establishing Guidelines for Environmental Education Based on Environmental Ethics (II) , 19-20 August 2006, in Bangkok, Thailand
 - <Keynote Speech> Perspective of Ethical Education Focusing on Integrative Medicine and Comprehensive Environmental Education
Fumiaki TANIGUCHI
 - <Forum B-1> Common Materials for Environmental Education in the Asia-Pacific Region: Establishing International Guidelines for Environmental Education(II)
 - <Forum B-2> How to Introduce Environmental Education in National Government Parks: Demonstration of Environmental Education Using On-line TV-net Meeting System between Japan and Thailand
 - ③ Establishing Guidelines for Environmental Education Based on Environmental Ethics (III), 3-4 May 2007, in Kuala Lumpur, Malaysia
 - <Keynote Address>
 - Orientation of the Framework for Guidelines of Environmental Education based on Practice of Environmental Ethics
Fumiaki TANIGUCHI
 - <Sessions>
 - Session I-II: Model Programme for Environmental Education: Perspective of Various Cultures
 - Session III: Case Studies of Implementation Environmental Education in the Asia Pacific Region
 - Session IV: Analyses of Case Studies on Implementation of Environmental Education in the Asia-Pacific Resion
 - Session V: Workshop & Summary
 - <Drafting Committee> The Skeleton of Guidelines of Environmental Education
 - 2) Model Programme for Environmental Education: Perspective of Various Cultures
 - 3) Case Studies of Implementation: Environmental Education in the Asia-Pacific Region
 - Bringing the Ocean into Schools and Schools to the Ocean
 - Eelgrass as Teacher
 - Community-based Education-The Colquitz Watershed Stewardship Education Project
 - 4) Demonstration: Teleconference and International Network of Environmental Education Sharing the university curriculum
- (2) Results
- 1) Report of the International Symposium: *Establishing Guidelines for Environmental Education Based on Environmental Ethics*, January, 2006

We held the first International Symposium from January 28th -30th, 2006 in Kobe having 314 participants, in order to assist in the development and promotion of knowledge of natural science related to global change research.

The objective of the symposium is to establish preliminary international guidelines for environmental education and, in the process, establish initial partnerships in the Asia-Pacific region between many countries including Australia, Canada, India, Japan, Malaysia and Thailand.

In this symposium, we discussed that we progressed the Asia-Pacific Region Network, shared the basic terms and materials on environmental education, standardized environmental education crossing the various study fields, such as natural, social and human sciences.

On Day 1 of the symposium, Keynote Speech I *Development of Environmental Education in Japanese Museum* by Dr. Shiro NAKAGAWA, President of Japanese Association of Museums, Keynote Speech II *Proposal of Environmental Education Based on Religious Ethos* by Prof. Azizan BAHARUDDIN, Malaya University in Malaysia, Keynote Speech III *Development of Environmental Education in Japan and Environmental Education Based on Environmental Ethics* by Prof. Fumiaki TANIGUCHI, Konan University in Japan were presented. The focus of these speeches and a panel discussion was the Standardization of Global Guidelines for Environmental Education Based on Environmental Ethics made by pioneering scholars and practitioners from Asia-Pacific countries.

On Day 2, two workshops were held. The first was on developmental procedures to create materials for coastal environmental education, and the second focused on demonstrating e-Learning activities in environmental education programmes between universities. The aim of the workshops was to improve the quality of teaching and training skills for environmental education for the general public, teachers, NGOs and local government officials. A second panel discussion focused on Common Materials for Environmental Education in the Asia-Pacific Region.

On Day 3, the organizers promoted the establishment of preliminary Guidelines for Environmental Education Based on Environmental Ethics. These guidelines have been generated from a specialists' study meeting and will incorporate environmental education as well as outline the role of networks in the region in implementing the guidelines at local, national and regional levels.

We discussed about the left half of the project plan in Malaysia for next year how to hold the second symposium and how to carry out the project fully aiming to establish more universal guidelines and important roles of networking in environmental education in the Asia-Pacific region.

We decided to have the Joint Meeting in August, 2006, in Bangkok so as to get the expanded information from Thailand and Nepal at the Satellite Symposia at the International Conference on *Education of Health and Environmental Education*. Therefore, we have to postpone the date of the second conference in Malaysia to 30 April-4 May, 2007.



2) Report of Satellite Symposia in August, 2006(Joint Meeting at Phranakhon Rajabhat University in Bangkok, Thailand)

Satellite Symposium B-1: *Common Materials for Environmental Education in the Asia-Pacific Region: Establishing International Guidelines for Environmental Education (II)*-Joint Meeting-, coordinated by Prof. Azizan Baharuddin, of Malaya University, Malaysia, and Satellite Symposium B-2: Demonstration of Environmental Education Using On-line TV net Meeting System Between Japan and Thailand, coordinated by Professor Fumiaki Taniguchi of Konan University, Japan, were held on 19-20 August 2006 at the Phranakhon Grand View Hotel and Phranakhon Rajabhat University, in Bangkok.

These symposia, which were organized jointly by the Japan Academy for Health Behavioral Science, the International Association of Earth-Environment and Global-Citizen, and Phranakhon Rajabhat University, were attended by over 150 people from Canada, Japan, Malaysia, Nepal and Thailand.

The Symposia aimed to use the experience and knowledge, of participating countries', on global change research to formulate guidelines for environmental education and sustainable development. They also hoped to fill existing gaps among teachers and other stakeholders involved, such as global change experts, decision-makers, etc., by developing methods/modules for environmental education, to be used as a base for countries in Asia.

During the symposia, there were several presentations given by experts in their field. Professor Manoj L. Shrestha of Konan University, Nepal, presented on the Common Materials for Environmental Education and Guidelines: Public Awareness, Management and Biodiversity by Professor Nancy J. Turner of University of Victoria, Canada, gave a talk on Environmental Education Materials: Some Examples from British Columbia, Canada.

Dr. Jariya Boonjawat, Associate Professor of Chulalongkorn University, presented on Environmental Education Materials Focusing on the Global Change Research and then Dr. Songpol Sukkijbumroong, Professor of Phranakhon Rajabhat University, presented a Case Study of Environmental Education Materials from the Capacity Building Aspects at the Environmental Education Center.

The symposia resulted in the recognition of the real environment, particularly the indigenous environment, as means to fill the various gaps among developed countries and developing countries, and also among experts, teachers and other stakeholders.

It was stressed that it is necessary to establish a fundamental framework that focuses on environmental ethics consisted by soft moral frameworks in the environmental context beyond the scientific dualism.

The need to establish flexible guidelines of environmental education applicable to stakeholders that will cut across all Asian countries was also emphasized. Lastly, it was realized that in order to acquire quick information on environmental education, an on-line TV net meeting system between Japan, Malaysia and other countries concerned with the project must be set up.



Satellite Symposium B-1



Satellite Symposium B-2

Four expert presentations, which focused on the (i) Common Materials for Environmental Education and Guidelines: Public Awareness, Management and Biodiversity presented by Prof. Manoj L. Shrestha, Professor of Konan University, Nepal, (ii) Environmental Education Materials: Some examples from British Columbia, Canada presented by Prof. Nancy J. Turner, Distinguished Professor of University of Victoria, Canada, (iii) Environmental Education Materials focusing on the Global Change Research presented by Dr. Jariya Boonjawat, Associate Professor of Chulalongkorn University, Thailand, and (iv) Case Study of Environmental Education Materials from the Capacity Building Aspects at the Environmental Education Center, Phranakhon Rajabhat University, presented by Dr. Songpol Sukkijbumroong, Professor of Phranakhon Rajabhat University, Thailand.

(3) Discussion

The key lines that came out of discussions were:

- 1) To have realized the real environment, namely indigenous environment to cover in the various gaps among developed countries and developing countries, and also among experts, teachers and other stakeholders.
- 2) To establish the fundamental framework focusing on environmental ethics consisted by soft moral frameworks in the environmental context beyond the scientific dualism.
- 3) To establish the flexible guidelines of environmental education applying to many countries and to stakeholders.
- 4) To have to use on-line TV net meeting system between Japan, Malaysia and other countries concerned with our project in order to acquire quick information on environmental education.
- 5) The latest knowledge should be delivered to Asian & Pacific regional countries not only the current from past to present but also from present to future on the axis of time.
- 6) Methodologies should be general and universal to specific and particular conditions such as Asian affairs and Western affairs. Beyond particular methodology the phrase of "Think globally, act locally" is still valid to global citizen.
- 7) From case studies we learned a lot of common materials in terms of having common technical works.
- 8) Relevance to the APN CAPaBLE Programme and its objectives

In the first symposium, we discussed that we progressed the Asia-Pacific Region

Network, shared the basic terms and materials on environmental education, standardized environmental education crossing the various study fields, such as natural, social and human sciences. Sharing the basic terms and materials are strong common tools of communication beyond various cultures and different studies for capacity building on global change research and sustainable development.

In the second symposium we tried to make a demonstration to expand environmental education network by using on-line TV net connecting Phranakhon Rajabhat University in Thailand with Konan University in Japan. It was very successful between Japan and Thailand. We feel confidence to expand on-line TV network to connect in the Asian-Pacific Area for global change.

In the third symposium we acquired the new information on environmental education in Malaysia holding panel discussions, keynote presentations, workshops and a post conference tour. As for the potential roles of networks in the Asian-Pacific region with respect to environmental education and sustainable development, enlightening the awareness of environment by common guidelines filled the existing gaps among teachers & other stakeholders involved such as global change experts, decision-makers, etc..

We have finished three proceedings and will sum up them to one book for publication in this fall

As for relevance to the APN CAPaBLE programme and its objectives, in Japan, Thailand and Malaysia we could actually know the different cultures, customs, religions and climates by eco-tour and discussions. So programme and its objective should be set more concrete and specific.

If these reference to the programmes and objective become convincing, we could surely contribute to the establishment of guidelines for environmental education focusing on environmental ethics.

9) Self evaluation

Most of the events concerning the symposia and workshops were good, however to heighten and deepen the each theme is still difficult. Because the conditions of, for instance, country affairs and school educational systems are diverse, and also the themes depending on different environments are specific.

So as to make the common guidelines as model programmes, teachers training and knowledge should be more required by the general systems.

Quality and experiences of teachers and instructors are also different case by case. Teachers and instructors training are more needed.

Mechanism of on-line system should be more improved. What is more, contents are very important. Because, expansion of on-line TV network which aimed for connecting three countries was half successful. Because, in Malaysia it was connected only between Malaysia and Thailand, not with Japan.

However, making technical terms and materials common by model programme is, may be said, established.



4. Conclusions

(1) Outcomes

The outcomes of three sets of symposia and workshops were available to formulate guidelines that can be used by countries in Asia to develop environmental education guidelines to suit the needs of their own countries.

1) In the first international symposium from January 28th-30th, 2006 in Kobe, Japan, there are 314 participants, in order to assist in the development and promotion of knowledge of natural science related to global change research.

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3) In the third symposium from May 3rd -4th, 2007 in Kuala Lumpur, Malaysia, about 50 Malaysian environmentalists attended the symposium and workshops. They were exposed to the latest knowledge, methodologies and case studies in environmental education regarding orientation of the framework for guidelines of environmental education on practice of environmental education and model programme for environmental education: perspective of various cultures in Thailand, Malaysia, Canada and Japan.

In conclusion, Japan, Malaysia, Thailand, Nepal and Canada become members that will consist the Asia-Pacific network by e-Learning/teleconference and cooperate to implement environmental education according to using the common guidelines in near future.

(2)Relevance to the APN CAPaBLE Programme and its Objectives

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So as to make the common guidelines as model programmes, teachers training and their knowledge should be more required by the general systems.

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However, making technical terms and materials common by model programme is, may be said, established.

(4) Conclusions

1) Firstly, one way to standardize the guidelines of environmental education is to make use of laws and regulation set by the central and regional governments as a rule-framework for environmental education. And also we should pay attention to the international declarations and charters.

However, as far as education is concerned, we should be more careful how to use laws and regulations, or declarations and charters, because they have the kind of force of solid rules, which is not suitable for education. As we know, education is expected to nurture the spontaneous ability to grow without force. So, if we manage the rules carefully, they will work effectively as a soft way of top-down.

2) Secondly, the other way is bottom-up. In order to establish common guidelines for environmental education, it is significant to make technical terms common words, which will be a bridge between specialists and citizens in general, so that the process of dialogue among them will be bottom-up to link with a circulation from top-down rules.

After a common guideline of environmental education based on environmental ethics is established, we could make model programs applied to particular schools and regions in different countries for a sustainable future, and make the same direction fall into step with the solution of environmental problems.

3) Thirdly, in the end, we will expand a network for environmental education by e-Learning as well as an international conventions or a research study like Prof. Mikami and I demonstrated in the symposium.

By setting up the Asian and Pacific network for environmental education, we could make use of international guidelines as model programs and have common subjects between universities for the protection of global environment against destruction.

5. Future Directions

(1) Potential for further work

We are sure of four potentials for the future work as follows.

1) Guidelines for environmental education focusing on environmental ethics afford us the same step to the goal of global environmental issues to solve including the human dimensions of global change.

- 2) For the solution of environmental problems we need to educate potentiality of young generation and enlighten the citizen.
- 3) Guidelines for environmental education are a common flexible framework and could set up the Asia Pacific network of environmental education.
- 4) Using TV network system will acceleratingly work to connect the Asian-Pacific region for environmental education

(2) Publications

- 1) Programme of International Symposium: Establishing Guidelines for Environmental Education Based on Environmental Ethics
- 2) 3 proceedings of International Symposium: Establishing Guidelines for Environmental Education Based on Environmental Ethics (I), (II) & (III)
- 3) A book on Establishing Guidelines for Environmental Education based on Environmental Ethics: publication is supposed in the fall in 2008.

(3) The model guideline for environmental education based on environmental ethics We are planning to publish a book under the title of Guidelines for Developing Environmental Education Curricula Programme for Sustainable Future. We would like to show one of the model papers quoted from the *Proceedings of International Symposium: Establishing Guidelines for Environmental Education Based on Environmental Ethics (III)* by Dr. Gloria Snively.

Guidelines for Developing Environmental Education Curricula and Programs for the Global Village

Dr. Gloria Snively, University of Victoria, Canada

Abstract: *There is no doubt that the world is facing a variety of crises, one being the progressive deterioration of the world's environment. There is an urgency, therefore, for all citizens to understand what is happening to the world's environment, why it is happening, how it affects us now and into the future, what is being done about it, and what could be done if all peoples everywhere on the planet worked locally and globally together to resolve environmental problems.*

All children have a right to be educated, but will they be educated with the attitudes, skills and knowledge they need to become competent citizens of their community, nation, and world? Will they have acquired the sensitivities, tolerance, and respect for all human beings and all entities to live in harmony in an interdependent world?

This paper presents guidelines to help teachers, curriculum developers, and other educators plan for and develop activities, lesson plans and instructional materials that provide high quality environmental education experiences for students at the primary, intermediate and secondary grade levels. It encourages the identification and articulation of key environmental concepts, skills, attitudes and behaviors.

Educators are encouraged to facilitate local needs and global perspectives, and develop cultural relevance in courses through the integration of local examples and current environmental issues. Educators are encouraged to develop evaluative tools for assessing student learning and evaluating instructional materials. The guidelines provide a flexible framework upon which cohesive, sequential and comprehensive environmental education programs can be created.

Background

During the last three decades, much has been written about the global need for environmental education in general, and the local need for curriculum development and teacher training in environmental education.

These guidelines are rooted in a common understanding of effective environmental education. For most environmental educators, that understanding is

rooted in two founding documents of the field: the Belgrade Charter (UNESCO-UNEP, 1976) and the Tbilisi Declaration (1978).

The Belgrade Charter was adopted by a United Nations conference, and provides a widely accepted goal statement for environmental education:

The goal of environmental education is to develop a world population that is aware of; and concerned about, the environment and its associated problems, and which has the knowledge, skills, attitudes, motivations, and commitments to work individually and collectively toward solutions of current problems and the prevention of new ones.

The first intergovernmental Conference on Environmental Education in 1978, sponsored by UNESCO in Tbilisi, USSR, built on the Belgrade Charter and was perhaps the first significant event leading to global recognition of the importance of environmental education. Representatives at the conference developed a set of objectives for curriculum development. Only by developing clear goals can EE help students to successfully meet the challenges facing them as world citizens. The goals ranged from an awareness level to a citizen participation level. These objectives follow:

- Awareness:** to help social groups and individuals acquire an awareness and sensitivity to the total environment and its allied problems.
- Knowledge:** to help social groups and individuals gain a variety of experiences in, and acquire a basic understanding of, the environment and its associated problems.
- Attitudes:** to help social groups and individuals acquire a set of values and feelings of concern for the environment and motivation for actively participating in environmental improvement and protection.
- Skills:** to help social groups and individuals acquire skills for identifying and solving environmental problems.
- Participation:** to provide social groups and individuals with an opportunity to be actively involved at all levels in working towards resolution of environmental problems.

The most far-reaching document on environmental education is the ICAE Treaty on Environment Education for Sustainable Societies and Global Responsibilities, which was launched at the 1992 World Conference on the environment in Rio de Janeiro. This treaty is especially important because it includes the collective voices from many countries, including a strong southern hemisphere perspective. Educators are encouraged to obtain a copy of the Treaty as it forms an integral part of the framework for EE.

Environmental education is a young field and therefore continuously evolving. Contemporary areas of environmental education such as environmental ethics are not explicitly mentioned in the foundational documents from Tbilisi or Belgrade, nor are they mentioned in the 1992 Rio documents. As our field grows and changes, and as we interact with differing cultures through international networks, the way we look at the field and its practice has to change.

Therefore, the task of developing an appropriate curriculum or course of EE for teachers globally is enormous and challenging given the scope of such a task and the very real differences and needs in teacher education programs around the world. Filho and Hale (1992) noted, as reported in Staniforth (1994) that "Environmental education must develop inside countries, it cannot be imported from outside"(p. 4). And as Staniforth (1994), noted, "It is impossible to impose a single core course or set of strategies for educators on the myriad of countries, cultures, local environments, and learning situations" (p. 4). When reflecting about developing environmental education resources, Hart, Jickling, and Kool (1999) recognized that "there are no universal solutions" and believe that "environmental education has to live in a state of uncertainty and indeterminacy regarding its core concepts and strategies" (p. 107).

The intent of this paper is to help teachers develop ideas, activities, lessons and units of study that can be applied to learning resources, but not prescriptions on what to teach and how to teach. Indeed, some teachers (and countries) may wish to put less emphasis on engaging students in debate, controversial issues, and action education. We might agree that environmental education requires being knowledgeable about environmental issues, but we may disagree on the applicability and depth of engaging students in resolving environmental issues. Our ability to communicate at all depends on shared understandings of our views of the essential characteristics of environmental education. The reader is invited to engage in discussion, reflection and exploration about the ideas and materials that we use as educators to help us as we work with students. As educators, you possess the power to change lives and serve as role models for your colleagues and students. Some teachers may wish to delete some of these ideas and add some of their own. I hope you find this paper helpful, and wish you much success.

Problems of Implementation

Filho (1993) identified eight problems faced by both "developed" and "developing" countries trying to implement environmental education programs:

- a lack of government and institutional support for the development of teacher training courses in EE;
- the presence of a great diversity of concepts, theories and ways of doing EE, presenting it as a complex confusing area of study;
- a lack of teacher training institutions specializing in environmental education;
- a lack of materials and support, especially in developing countries;
- the need to encourage communication networks, exchange of information, programs, and experiences at national and international levels;
- a lack of information about the environment in an accessible form for teachers;
- the need for greater awareness, commitment and involvement of the scientific community in all aspects of EE;
- the competitive public/state educational exam system in many countries, which does not recognize EE, gives no credit for field work, and discourages "extra-curricular activities (Filho, 1993, as reported in Staniforth, 1994, p. 2).

The final report stated that teacher training in environmental education (EE) was considered to be a priority activity. Yet, almost three decades later worldwide teacher training in environmental education is scarce at best.

In reviewing curriculum materials worldwide, it becomes increasingly apparent that the traditional curriculum in most countries is geared towards learning facts, passing exams and getting into university or getting a good job. Objectives focus on helping children become knowledgeable about their environment and its associated problems, were considered of more importance than those objectives focused on helping students actually solve environmental problems and develop problem solving skills. The presence of environmental education in public school curricula can often be characterized by loose organization and little sense of direction.

Care for the environment and citizenship easily becomes marginalized due to the competition for curriculum time from other established subjects. Environmental educators have experienced great difficulty in finding curriculum time for even a little environmental education, let alone the whole spectrum of approaches that a sound environmental education curriculum requires.

Characteristics of Appropriate and Responsive EE Curriculum

A basic assumption of environmental education is that humans can live compatibly with nature, act equitably toward each other and future generations,

and make informed forward looking (Hungerford, Peyton, & Wilkie, 1980; McClaren, 1995; Orr, 1992, 1994; Hart, Jickling, & Kool, 1999). If we are to reach this goal, however, environmental education must play an integral role throughout our educational system—at the national level, local level, and internationally. This means we must make significant changes in how and what we teach.

Good environmental education is experiential and personal, it comes from involvement at the community level and from within oneself, and must be designed with learners' experiences, background and culture as integral components. Environmental education often starts close to home, encourages learners to understand and make connections with their immediate surroundings. Environmental education provides real-world contexts and issues from which concepts and skills can be learned. The awareness, knowledge skills and attitudes needed for exploring these local connections and understandings provide a basis for moving out into broader issues and larger systems, and more sophisticated comprehension of causes, connections, and consequences of changing local/global relationships.

Environmental education supports the development of an active learning community where learners share ideas and engage in continued inquiry. Environmental education builds the capacity for learners to work individually and collectively to explore environmental issues and improve environmental conditions.

If we want our children to take up the all-important challenge of working to sustain both human communities and the environment we must encourage them to experience nature and value it positively. Programs that are sensory, experiential, and local increase retention, motivate students to learn, and encourage an ecological ethic.

We must also model interest in understanding and protecting natural systems locally and globally. An ecosystem is a community of living things interacting with one another, and with their physical environment. An ecosystem can be a pond, forest, tide pool, or planet. Students need to understand why food chains and energy flows, life cycles, water cycles, habitat loss, and sustainability are major integrating concepts.

The environment is more than the natural environment; it includes the social and cultural environment as well. Students' own cultures are explored, as well as the cultures of others, to understand how they portray, value and relate to the environment. The collective richness, multiple talents and combined knowledge and wisdom of cross-cultures interactions should be acknowledged and celebrated in attempting to sustain human communities and natural environments.

Strategies must be found for helping students make reasoned judgments at both the personal and the societal levels in a fast changing, interdependent world. Schools need to offer opportunities for students to study, reflect upon and discuss possible, probable and preferred futures. A student exploring new perspectives, alternative versions of the past and future, inevitably begins to critically examine his or her assumptions, values and behavior.

Global environmental education goes beyond international perspectives that focus on languages and nations, to prepare a student to achieve global awareness. The dimensions include state-of-the-planet awareness, knowledge of global systems, cross-cultural awareness, perspective consciousness, and awareness of human choices that affect all the nations and peoples of the planet. It embodies a new vision that the "global village" has arrived.

Contrary to what many people think, environmental education is not tied solely to the science curriculum, it involves a holistic approach that cuts across all subject areas including language arts, social studies, mathematics, the arts, economics, geography, history, economics, business, law, and cultural studies. As students begin to analyze and evaluate the complexities of an EE issue they begin to understand the intricacies of the connections that they could not have discovered if the information was presented fact by fact and subject by subject outside of the context of the environment as a whole.

It is hoped that these guidelines will point the way toward using

environmental education as a means for both integrating across the subject areas and meeting the standards set by the traditional disciplines. Each of the traditional areas of science, mathematics, geography or social studies, and language arts has developed a set of national standards, or prescribed curriculum, and many of these standards have been adopted at local and national levels in participating countries. Although written to address the needs of specific subject areas, these standards can and do address the needs of EE.

Planning Your EE Curriculum

The teacher is a decision maker. Each day many decisions are made regarding what to teach, why to teach it, how to teach it, and how to determine what learning has taken place. The following process is one way of attempting to develop lessons and units of study, and is intended to help you think about your environmental curriculum:

- Identify an environmental topic, problem, or issue that is of interest to you and your students
- Identify the goals and objectives for your EE curriculum
- Define the key concepts (the understandings or big ideas)
- Write learning outcomes
- Identify teaching strategies, methods and activities
- Teach the unit
- Evaluate the unit

Writing Goal Statements

Lesson planning and/or curriculum development is the process of transforming images, theories, and dreams about teaching and learning into programs which have a reasonable chance of realizing the visions which set the process in motion. The initiating conditions of curriculum development are seldom clear-cut; they are rather images that are general and fleeting. Much of what we value and aspire to we cannot adequately describe. Furthermore, much of what we value and seek often appears contradictory. We want students to understand ecology concepts, care for living organisms, and be cooperative in the classroom and with other students. Yet we also would like them to take the initiative, to be able to express their own views, identify environmental issues, and where appropriate take action in their own lives (and possibly in groups), to bring about positive change. To a considerable degree, our goals for environmental education are always beyond the grasp of verbal or written expression. Consider the following goal statements:

Students will understand that human communities and environments are interconnected.

Students will appreciate the beauty and value of wildlife.

Students will develop a good self-image.

Students will develop problem-solving skills.

While the above goal statements provide us with a general sense of curriculum intent, they are nonetheless vague and to a large degree arbitrary. How will we know when a student "understand the concept of connectedness" "appreciates the beauty of wildlife" or has "a good self image?" What is climate change and how will we know when a student understands the concept in a form appropriate to the grade level? What are problem-solving skills, and how will we know whether or not a student has mastered such skills? To a considerable degree curriculum development seeks the realization of certain ineffables.

As I have already indicated, I do not believe that it is desirable in the field of education to prescribe rules or recipes that one must follow. Judgment is always necessary and sensitivity to students, the topic of interest, to materials

and logistics, and to social and cultural norms is always necessary. But it is possible to provide generalizations and strategies that can heighten a teacher's sensitivity to the problems, possibilities and issues that require attention. The sequence that follows seems to me to be reasonable, but you may find it necessary to proceed in curriculum planning in a very different order. To provide a sense of how we might proceed, I have prepared various dimensions of curriculum planning and samples of materials illustrating how many environmental educators have proceeded. I hope it provides you with a sense of the organization, creativity, and flexibility curriculum planning requires.

Focus on Knowledge/Concepts (The Big Ideas)

Rather than presenting a series of low-level facts such as "the capital of Korea is Seoul" or "the population of Canada is 50 million", materials should use unifying themes and important concepts. Key concepts are words that represent highly generalized abstractions. Key concepts are often referred to as the "knowledge", "understandings" or "big ideas" of a unit of study. A set of key concepts for developing a unit on the forest at the grade 5-6 level, might include the following:

Key concepts (the big ideas) for a unit on the forest:		
• habitat	• organism	• camouflage
• predator	• prey	• food chain
• adaptation	• habitat loss	• needs and wants
• resources	• interdependence	• conservation
• pollution	• culture	• sustainability

Key concepts should be selected because of their power to organize and synthesize large numbers of specific facts and ideas. For this reason, key concepts can be developed in an increasingly more complex and abstract manner from grade to grade. The key concepts not only suggest the main and organizing ideas around which the units are developed, but they also form threads which run throughout the curriculum package.

Example Key Concept: CHANGE

Animals grow and change. (grade K-1)

The activities of animals may cause changes in their habitats. (grade 3-4)

The environment, and everything in it, is in a constant state of change. (5-6)

Cause and effect relationships can help or hinder wildlife. (7-9)

Example Key Concept: HABITAT

The place where a plant or animal lives is its habitat or home. (K-3)

Loss of habitat is a serious threat to the survival of plants and animals. (4-5)

Animals adapt to their habitat both behaviourally and structurally. (6-7)

Children develop and construct concepts from a range of their own experiences. The more experiences they have, the more refined their understanding of the concept will be. Ecological concepts are difficult to grasp—we can't always see the patterns or relationships that connect organisms in an ecological system. The most successful and often only way for the average elementary school child to *develop* an understanding of a concept, especially an abstract concept, is through first-hand experience. Lessons that develop an understanding of the concept, "change", for example, will be more successful if they involve examples from the near environment such as the home, the school playground or neighborhood, rather than from unfamiliar places. Importantly, structured educational experiences can help facilitate this process and help students grasp key concepts.

In recent years educators have argued for fewer concepts and topics to be covered in the curriculum, in favor of more meaningful and thorough exploration of content and greater articulation within and across courses. Big ideas are useful because they provide teachers with an effective way to organize the content and flow of an instructional unit, give students a framework or blueprint for organizing information, and facilitate the linking of ideas and experiences across units

Writing Learning Outcomes or Understandings

One important task for students is learning to construct and use concepts that are prescribed in the curriculum. Importantly, when students are learning about science, reading, geography or environmental education they need to create workable concepts that enable them to use facts and information. Thus, when considering learning objectives it becomes important to set up situations where students can move from their experience to making inferences and generating useful CONCEPTS to demonstrating this understanding by means of observable actions and words.

When learning activities [and lesson plans] focus on "observable outcomes" we focus on specific objectives that can be clearly identified by observing student behaviour. Thus, when writing lesson objectives, it becomes important to avoid vague or "loaded" words; words open to a wide range of interpretation that MAY NOT lead to observable understandings. When we use ONLY such words, we leave ourselves open to misinterpretation. Consider the following examples of words in this light:

Writing Learning Outcomes

Words Open to Many Interpretations:	Words Open to Fewer Interpretations	
<ul style="list-style-type: none"> • to know • to understand • to appreciate • to grasp the significance of • to believe • to have faith in 	<ul style="list-style-type: none"> • to write • to identify • to differentiate • to construct • to list • to compare • to predict 	<ul style="list-style-type: none"> • to infer • to classify • to measure • to build a model • to photograph • to draw a picture • to dramatize

The following checklist is provided as a guide for developing learning outcomes:

1. Learning outcomes state the objectives of each lesson.
2. They include the concepts, the big ideas of a given lesson.
3. They include the inquiry skills and participatory activities used to study a given topic.

4. They are observable outcomes stated in terms of student performance rather than teacher performance or the subject matter to be covered.
5. They include a verb that specifies definite, observable behaviour (i.e., **identifies, describes, lists, classifies, measures, role plays**)?
6. They take into account the ability of the students.
7. They provide ways of evaluating outcomes.

Sample Observable Outcomes for Students

1. Students will **sort** a series of pictures into living and non-living things.
2. Choose one organism, **observe, describe** and **draw** its characteristics in detail.
3. Choose one organism **observed** this week in the forest and **describe** its habitat. **Illustrate** with a picture how the animal survives in its habitat.
4. Using picture cards and word cards, **match** 10 different plants and animals that you observed with their appropriate adaptation.
5. **Predict, measure,** and **graph** the growth of plant seedlings over a six-week period.
6. **Recommend** changes in the way people treat wildlife.

When reviewing the above list of learning outcomes, it becomes clear that some outcomes focus on student understanding of key concepts, some focus on developing student skills, and others focus more on attitudes or participation. To see this, the following learning outcomes have been organized according to their focus: skills, attitudes, and participation.

Skills

After completing this environmental education program, students will be able to:

- **predict** how threats to marine resources will affect them personally. Their community?
- **measure** and **record** the temperature of a pond.
- **graph** the changes in plant populations on a hillside.
- **list** arguments for and against free trade.

Attitudes

After completing this environmental education program, students will be able to:

- **describe** how they feel about the possible extinction of blue whales.

- **describe** and justify their own attitudes about driftnet fishing.
- **write** how they feel about a new law that would limit harvests and protect fisheries.

Participation

After completing this environmental education program, students will be able to:

- **list** rules and **implement a plan** for minimizing destruction of marine animals during a fieldtrip.
- in specific situations, **identify** a positive course of action
- **develop** and **implement a plan** for school recycling
- **organize** a beach clean-up

When developing a unit plan, teachers should attempt to include learning outcomes that focus on each of the five goals of environmental education: awareness, understanding of key concepts, skills, attitudes, and participation.

We can now begin to explore putting together understandings and learning outcomes for the purpose of lesson planning. The following set of understandings and learning outcomes were developed for a lesson on food chains:

Food Relationships

Key Concepts (Understandings) Grade 4-5-6

Food energy flows from one living organism to another in a series of steps called a "food chain."

Learning Outcomes

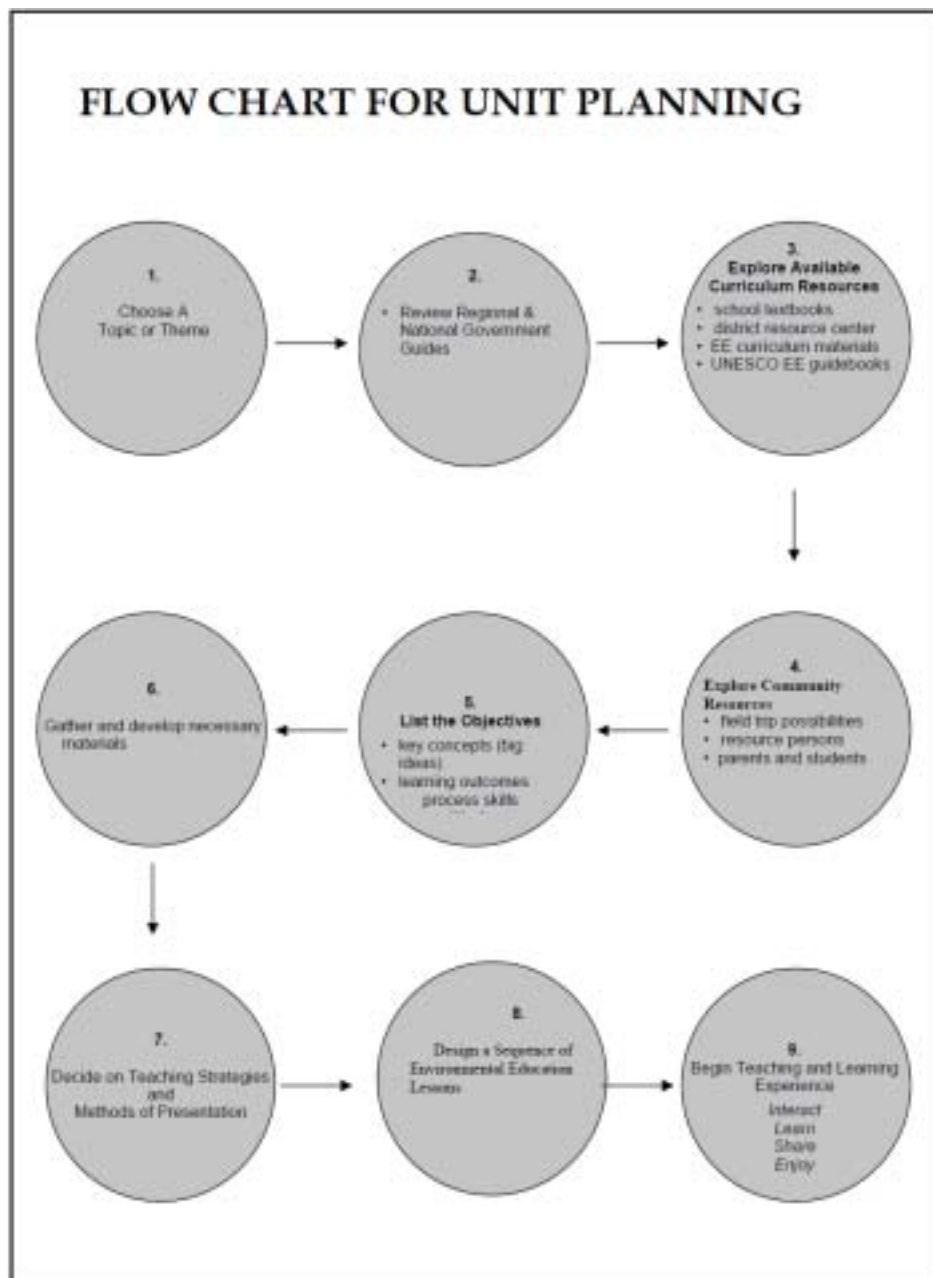
- Given a list of seashore animals, **draw** a food chain consisting of five organisms.
- Using picture cards and arrow cards, **show** a food chain for a pond.
- **Role play (dramatize)** a pond food chain.
- **Write** a paragraph to describe how a pond food chain could be broken.

Planning Your EE Curriculum: Some Considerations

The following are additional key questions that teachers might consider during the process of curriculum development. Not all of the questions are applicable to all situations. Many teachers will want to delete some of the items or create their own list of questions.

- Review national guidelines. How might this curriculum fit into the existing curriculum for science, social studies, etc.?
- Identify any obstacles you might encounter while teaching your curriculum.
- Has your teaching unit or project been done before? If yes, when was it done and what resources are available?

- Make a list of information that you need to gather in order to complete your teaching unit or program.
- Identify possible sources of information, books, curriculum materials, and resources.
- Identify possible resource persons such as parents with skills and knowledge, park naturalists, artists, musicians, biologists, college or university professors, research stations, scientists.
- Identify possible field trip opportunities (forest, pond/lake, seashore, factory, urban park, marine aquarium, museum, recycling center, food store).
- Decide on possible teaching strategies: sensory awareness, inquiry skills, monitoring, role-playing, drama, dilemmas, debating, reporting, writing letters,
- If appropriate, how and where might you present your results to others (other students, parents, the community, the shopping mall)?
- If appropriate, identify any community, businesses, or local, national and international organizations that might provide you with possible resources or funding.



Controversial Issues

When addressing environmental issues, teachers are encouraged to think about five questions:

1. What environmental problems are confronting the community?
The country?
2. Which problems are most significant to the country? The students?
3. Will the students be able to solve the problem, or contribute towards solving the problem?
4. What problems are appropriate for the grade level (the age level)?
5. What information and skills do the students need to have so they will be able and motivated to work towards solving the problems?

Controversial issues abound within EE. Teachers are rightly concerned when engaging students in activities that may involve value positions that clash. To teach controversial issues takes great care.

Most environmental educators agree that our commitment is to provide accurate, balanced and effective instruction—and not promote a particular view about environmental conditions, issues or actions. We must avoid indoctrinating students, coercing or leading students if we acknowledge that our goal is to be able to encourage open-minded critique and analysis of both facts and values. Students can examine advertisements, or environmental conceptions of policy, including the most contemporary and enlightened.

Evaluative Procedures

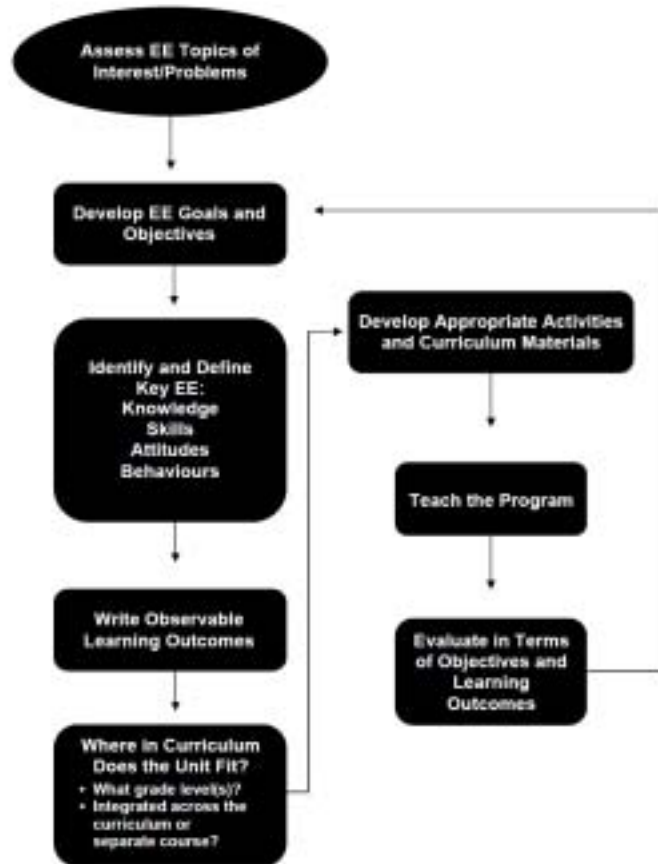
Educators should come to understand and accept the responsibilities associated with environmental education as a profession that maintains consistent and high standards for instruction. EE lessons and materials should provide tools for assessing learning progress and evaluating the effectiveness of instruction.

How will you evaluate student learning?

- Conceptual understandings and learning outcomes are tied to the goals and objectives of EE.
- Provide examples of and implementation of specific performance-based assessments such as student journals, open-ended questions, oral reports, drawings, activity sheets, group or independent research, dramatizations, etc.
- Discuss the importance of and develop techniques for uncovering the student's prior ideas and beliefs about ecological concepts and environmental issues.
- Consider a variety of ways of keeping track of student progress?
(journals, photographs, videotape, portfolio, activity sheets etc.)

The Flow Chart for Curriculum Development and Evaluation (next page) is intended as a guide for teachers.

EE Curriculum Development and Evaluation Flowchart



Characteristics of Good EE Lessons and Resources

Good environmental education resources must reflect a basic understanding of the theory and practice of the field of EE. The following questions are provided to help guide teachers in the process of lesson planning, program planning and developing resources.

What are good learning resources?

Considerations

- What is the nature of the stated goals and learning outcomes of the resource? Are they clearly stated?
- Are the goals clearly addressed by the teaching activities?
- Are the goals within the scope of the curriculum, are they reachable?
- Is the information up to date and accurate, does not include outdated statistics, inaccurate graphs, or invalid or oversimplified models?
- Does the resource go beyond basic skills: includes enhanced abilities to reason carefully, think critically and creatively?
- Does the program provide an integrated approach (language arts, science, music, drama, mathematics, social studies, outdoor recreation, as appropriate?)
- Do the materials and activities communicate effectively to students at the intended grade level?
- Can students "see the results"? Much EE is abstract; students need to *do* EE in order to make it concrete.
- Do the activities promote leadership skills?
- Do the materials provide appropriate evaluative procedures?
- Does the program of activities promote a safe, warm, and responsive classroom and school atmosphere where students learn about many things in many ways?

Additionally, while individual units of study will only focus on some components of “good” EE, an over-all school program should include a range of such characteristics. The following characteristics are provided as a guide to good EE school programs. The over-all sets of questions relate to a sequential school program, and should be applied as appropriate to specific curriculum units.

Experiential Environmental Education

Most environmental educators argue that EE begins with providing frequent experiences in natural settings and with living organisms. Does the learning resource

- engage students in frequent experiences with plants, animals and natural systems?
- stress sensory awareness?
- stress aesthetic experiences?
- engage students in experiences with special places in urban or rural settings (adapted from Snively, 1989; Wilson, 1993; BC Ministry of Education, 1995; Hart, Jickling, & Kool, 1999).

Environmental Connections

Students need to explore and understand natural systems, and understand the links between complex natural and human ecosystems. Does the learning resource

- engage students in exploring natural communities, such as ponds, forests, tidal pools?
- stress the nature and behavior of natural populations (birth, growth, change and its effects on death and extinction)?
- stress interactions of individuals and populations (predator-prey, food chains, food webs)?
- teach that the habitat (or home) of an organism is where it get its needs met for food, water, shelter and space.
- teach that an ecosystem is a community of inter-acting living and non-living things?
- teach that organisms adapt to their environment?
- stress the tendency of natural systems to establish balance over time when disturbed naturally or by human pollution?
- stress that habitat loss is the single most important reason for loss of species and extinction of organisms?
- teach that humans effect natural systems (technology, pollution, urbanization)?
- educate for sustainability and sustainable futures?
(adapted from Project Wild, 1998; Volk, 1993; BC Ministry of Education, 1995)

Controversial Issues and Action Education

Many EE programs engage students in exploring controversial issues, identifying a course of action, and possibly taking an action. There are many arguments in favour of engaging students in controversial and action education. When exploring EE issues with students, does the learning resource

- engage students in existing “real world” environmental issues that are of particular interest to them?
- incorporate student choice where possible into problem solving situations—choosing the problem, the solution, the action?
- enable students to understand arguments, identify assumptions, to open their minds to alternative worldviews, to engage them in critical thinking, to examine ideas and beliefs that underlie human-environment relationships?
- communicate the way individual people affect the environment (individual actions and behavior)?
- invite students to identify their own ideas and beliefs (underlying assumptions) about a value issue?
- communicate that there may be more than one way to view the issue?
- communicate that the difficulty in resolving environmental issues is due to the

- different attitudes and values of the people involved in them?
 - explore and present various viewpoints?
 - explore scientific, aesthetic, economic, spiritual, recreational, historical, political and cultural values?
 - develop the ability to think in time; ahead, to forecast, consider the past and plan
 - leave the learners free to decide upon and select the problem they feel is important to research and address with action?
 - provide a basic set of action “action processes” which includes how to identify, research, and investigate the problem or issue?
 - develop communication skills?
 - develop leadership and group abilities?
 - understand alternative strategies?
 - realize that humans can act collectively to shape society?
 - engage community support?
 - encourage a positive feeling about contributing to solutions to problems, as opposed to feeling alienated and disempowered
- (adapted from Zoller, 1991; Clarke, 1993; Volk, 1993; Stapp & Wals, 1994; BC Ministry of Education, 1995; McClaren, 1995; Hammond, 1997; Hart, Jickling, & Kool, 1999; Selby, 1999; Snively, 2001)

Additionally, when writing a learning resource that engages students in controversial issues and problem solving activities, does the learning resource

- scapegoat and assign blame when no justification exists?
- force an either/or approach, insisting that there are only a few possibilities for an approach when in fact there could be many?
- use false analogies which do not relate to the issue at hand?
- use extreme examples, used to support a point, to slant an argument or prejudice a viewpoint or response?
- consider consequences if the action taken by the students does not achieve the intended outcome? (adapted from Clarke, 1993; Hart, Jickling, & Kool, 1999)

Global Connections

Does the resource

- promote awareness of the state of the planet?
 - teach knowledge of global dynamics; e.g., weather systems, ocean currents?
 - treat critical global and local issues as parts of interrelated issues?
 - include fundamental global issues such as population, hunger, health, peace, human rights, democracy, climate change, degradation of flora and fauna?
 - treat critical global issues, their causes and inter-relationships in a systematic approach and within their social, cultural and historical contexts?
- (adapted from Orr, 1992, 1994; McClaren, 1995; Selby, 1999; Kirkwood, 2001)

Cultural Connections

Does the resource

- attempt to empower all people and promote opportunities for grassroots democratic change and participation?
 - attempt to recover, respect and utilize indigenous history and local cultures
 - acknowledge indigenous ecological knowledge and wisdom with regard to its considerable contributions to sustainable communities and environments?
 - communicate the way people’s cultural activities affect the environment (religion, politics, society, etc)?
- (adapted from Staniforth, 1994; McClaren, 1995; Hart, Jickling, & Kool, 1999; Selby, 1999; Snively & Corsiglia, 2001).

Ethics based Environmental Education

EE deals with issues and problems that involve individual and group ideas, beliefs,

and values. Ethics (our spiritual, aesthetic and moral understandings) challenge us to reach beyond science-based approaches to environmental problems. Does the learning resource

- teach that humans are part of nature and that humans are not superior to other species? (principle of oneness)?
- teach that the role of humans is to work with the rest of nature, not to conquer it (principle of cooperation)?
- promote devotion to the protection of life on earth? All organisms have a right to live simply because it exists, and this right is not dependent on its use to us?
- teach that we can never really do our own thing; everything we do has mostly unpredictable present and future effects on other people and other species (first law of ecology)?
- give special emphasis on self study and reflection, etc?
- examine the relationships between human quality of life and environmental quality?
- teach that we have a right to kill other organisms to provide enough food for our survival and health needs, but we do not have such rights to meet non-basic or frivolous wants.
- teach that people have a right to a fair share of the world's resources as long as they are assuming their responsibility for sustaining the earth (principle of equity)?

Be Positive

EE deals with often depressing issues, climate change, pollution, global warming, species extinction. Does the resource

- present a positive over-all view?
- attempt to find a positive course of action that might simply mean doing something positive?
- stress success stories (e.g., the removal of bald eagles from the endangered list)

Extending EE Guidelines for Learning

Once of the most comprehensive and far reaching documents on developing environmental education programs and resources is *Excellence in Environmental Education: Guidelines for Learning (K-12, (1999) developed by the North American Association for Environmental Education in Washington DC*. I recommend that all environmental educators obtain a copy or visit their web site at www.naaee.org/programs-and-initiatives/guidelines-for-excellence.

I have included Guidelines for Fourth Grade, next page, as a specific example of goal appropriate activities and lessons for the fourth grade level.

A Final Note

There is no doubt that more needs to be written about developing environmental education materials from a truly global perspective. Other attempts to bring together guidelines have been from Canada, the US, Great Britain, Europe, and Australia; much of this will need to be revised and much needs to be written by Asia Pacific scholars and teachers. I wonder whether "goals and understandings" are the answer, or if there are better ways to write goal statements that are more culturally appropriate to specific traditions and perspectives. So, I encourage you and your colleagues to be critical of this document, to use it as a starting point for discussion about purposes and methods, as well as a catalyst for creative and visionary programming based on your own cultural and environmental needs. Although different cultures might interpret the goals and methods differently, discussion should stress similarities and areas where thinking from one culture helps fill the gap where knowledge from another culture may be lacking. Approached holistically, environmental education offers teachers a broad range of opportunities to guide students on their twenty-first century journey to shape a more environmentally sustainable and peaceful world.

**Excellence in
Environmental Education**

Sample Guidelines for Learning (K-12)

GUIDELINES FOR FOURTH GRADE

Learners should be able to meet the guidelines included in this section by the end of fourth grade.

The kindergarten through fourth grade years are a time of tremendous cognitive development. By third and fourth grades, learners have developed some basic skills that help them construct knowledge. Instructors in earlier grade levels should use these fourth grade guidelines as a target, extrapolating from this end goal appropriate activities and lessons for younger learners.

In these early years of formal education, learners tend to be concrete thinkers with a natural curiosity about the world around them. Environmental education can build on these characteristics by focusing on observation and exploration of the environment--beginning close to home.

Examining Environmental Issues in Fourth Grade

Many educators believe that exploring issues helps fourth-grade learners make important links between conceptual understanding, what is happening in their community, and their own responsibility for environmental quality. Others caution that fourth graders are only beginning to synthesize their knowledge into the kind of complex understanding that is essential to examining environmental issues. When deciding how to handle environmental issues in the fourth grade classroom, educators must rely on their own judgment about what each class--and each student--is ready to handle.

Basic guidelines for examining environmental issues with fourth graders are:

- Keep it simple.
- Keep it local.
- Make close links with what they're observing and learning about the local environment.

**Excellence in
Environmental Education
Sample Guidelines for Learning (K-12)**

The following chart suggests ways in which learners at different grade levels might explore and understand the local environment. It is printed in each grade level section of these guidelines to help show progression as learners mature. Other ideas are included in the guidelines.

Grades K-4	Grades 5-8	Grades 9-12
Identify basic types of habitats (e.g., forests, wetlands, or lakes). Create a short list of plants and animals found in each.	Classify local ecosystems (e.g., oak-hickory forest or sedge meadow). Create food webs to show--or describe their function in terms of--the interaction of specific plant and animal species.	Identify several plants and animals common to local ecosystems. Describe concepts such as succession, competition, predator/prey relationships, and parasitism.
Trace the source of their drinking water and where it goes after it is used.	Describe how drinking water and wastewater are treated.	Evaluate sources of non-point source pollution of local bodies of water, including sources that are not local.
Recognize resident animal species, migrants, and those that pass through on migratory routes.	Map migratory routes of birds, butterflies, and other animals that pass through the area. Identify their local habitat needs.	Investigate short- and long-term environmental changes in a local watershed, and aquifer, or in air quality. Or document changes in land use and their environmental effects.
Collect or produce images of the area at the beginning of European settlement.	Monitor changes in water or air quality, or other aspects of the local environment.	Research population trends for a local threatened species. Describe changes, activities, and other factors that seem to affect the population trends.
Describe aspects of the environment that change on a daily, weekly, monthly, and yearly basis.	Identify species that are local threatened, endangered, or declining in population. Describe their habitat needs.	Calculate the potential for generating wind or solar power on a particular site.
Identify sources of electricity used in the community (e.g., hydroelectric, fossil fuels, solar, nuclear).	Describe the area's climate and identify factors that contribute to it.	Trace human population trends for their region and make projections, based on research findings, for the future.
Record weather observations such as precipitation, temperature, or cloud cover.	Create a map for the local area that shows where food that is consumed locally comes from.	
Identify food crops that are grown or processed locally.		

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Appendices

APPENDICES 1: AGENDA(I)

International Symposium Establishing Guidelines for Environmental Education Based on Environmental Ethics

Background

In order to assist in the development and promotion of knowledge of natural science related to global change research, the International Symposium aims to share viewpoints of knowledge and expertise from invited guests in the fields of natural sciences, social sciences, and human sciences.

Studies on "Environmental Education" have not yet been sufficiently integrated to solve environmental issues. In order to have a common understanding of environmental issues based on environmental ethics, internationally recognized guidelines for environmental education need to be established. The symposium aims to establish preliminary guidelines and discuss the role of networks in environmental education in the Asia-Pacific region.

Environmental education is embedded into all "natural, social and human sciences." Therefore, the objective of the symposium is to establish preliminary international guidelines for environmental education and, in the process, establish initial partnerships in the Asia-Pacific region between many countries including Australia, Canada, India, Japan, Malaysia, Thailand and the USA.

On Day 1 of the symposium, keynote speeches followed by a number of presentations that focus on environmental education will be made. The focus of these speeches and a panel discussion will be to call for Standardization of Global Guidelines for Environmental Education and will be made by pioneering scholars and practitioners from Asia-Pacific countries. The symposium audience will then have an opportunity to exchange opinions during an open and dynamic dialogue session with the presenters.

On Day 2, two workshops will be held. The first will be on developmental procedures to create materials for environmental education, and the second will focus on demonstrating e-Learning activities in environmental education programmes between universities. The aim of the workshops is to improve the quality of teaching and training skills for environmental education for the general public, teachers, NGOs and local government officials. A second panel discussion will focus on common Materials for Environmental Education in the Asia-Pacific Region.

On Day 3, the organizers will promote the establishment of preliminary Guidelines for Environmental Education Based on Environmental Ethics. These guidelines will be generated from a specialists' study meeting and will incorporate environmental education as well as outline the role of networks in the region in implementing the guidelines at local, national and regional levels.

Symposium Outline

Dates: 28-30 January 2006 (Saturday – Monday)

Venues: Hyogo Prefectural Museum of Art, Museum Hall / Konan University,

Building 5 & 9

Organiser(s): The General Institute for the Environment, Konan University; Asia-Pacific Network for Global Change Research (APN)

Sponsored by: APN & Hyogo Prefectural Government

Supported by: APN, Hyogo Prefectural Government, Ministry of the Environment, JAPAN; Hyogo Prefecture Board of Education; Kobe City Board of Education; Institute for Global Environmental Strategies (IGES) Kansai Research Centre; International Centre for the Environmental Management of Enclosed Coastal Seas (EMECS), the Japanese Society of Environmental Education, Kansai Branch; the International Association of Earth Environment and Global Citizen/ Hyogo Environmental Advancement Association

Programme

Day One - Saturday, 28 January

10:00	- Participant Registration (Hyogo Prefectural Museum of Art)
10:30	
10:30	- Opening Remarks:
10:50	Mr. Hiroki HASHIZUME, Director, Asia-Pacific Network for Global Change Research (APN) Mr. Akira HARADA, Director General Environment Bureau, Hyogo Prefectural Government
10:50	- Keynote Speech I :
11:40	Dr. Shiro NAKAGAWA, President, Japanese Association of Museums, JAPAN "Development of Environmental Education in Japanese Museums: Guidelines for Museums"
11:40	- Keynote Speech II :
12:30	Prof. Azizan BAHARUDDIN, University of Malaya, MALAYSIA "Proposal of Environmental Education Based on Religious Ethos: Environmental Education based on Common Values in Diverse Cultures and Religions"
12:30	- Lunch
13:30	
13:30	- Keynote Speech III :
14:20	Prof. Fumiaki TANIGUCHI, Konan University, JAPAN "Development of Environmental Education in Japan and Environmental Education Based on Environmental Ethics: Regarding Fundamental, Themes of Nature, Life, Agriculture, Culture, Religion and Ethics"
14:20	- Tea Break
14:30	
14:30	- Panel Discussion I : Toward Standardization of Global Guidelines for Environmental Education Coordinator: Prof. Azizan BAHARUDDIN, University of Malaya, MALAYSIA Panelists:
16:00	Dr. Shiro NAKAGAWA, Director Emeritus, Ibaraki Nature Museum, JAPAN "Standardization of Environmental Education in Museums from the Global Viewpoint"
	Prof. Freya MATHEWS, La Trobe University, AUSTRALIA "Standardization of Environmental Education Based on Environmental Philosophy from Viewpoint of Deep Ecology"
	Prof. Jariya BOONJAWAT, Chulalongkorn University, THAILAND "Standardization of Environmental Education on Biochemical Education from the Viewpoint of the Relationship between Life and Environment"
	Dr. Hakobu NAKAMURA, Former President, Pan-Pacific Forum, JAPAN "Standardization of Environmental Education on Biology from the Viewpoint of the Life-Chain: All kinds of the organisms are connected each other through the genes"
16:00	- Tea Break
16:15	
16:15	- Panel Discussion
17:00	
17:00	- Summary
17:15	

17:30-19:30 Welcome Reception	
Day Two - Sunday, 29 January	
09:00	- Participant Registration (Konan University, Building 5, No. 5-22)
09:30	
09:30	- Workshop A: Development Process of Teaching Materials on Marine Environmental Education in Canada: Guidelines for Developing International Environmental Education Manuals and Programs
10:50	Coordinator: Gloria SNIVELY, University of Victoria, CANADA
10:50	- Tea Break
11:00	
11:00	- Workshop B: Demonstration of Environmental Education Using On-line TV-net Meeting System:
12:20	Application of a TV-net Meeting System through the Internet for ESD(Education for Sustainable Development)
	Coordinator: Prof. Kazuyuki MIKAMI, Miyagi University of Education, JAPAN
	Collaborators: Prof. Yoshihiro Ugawa, Miyagi University of Education, Mr. Yukihiro OIKAWA, Mr. Yuichi HATAKEYAMA, Mr. Masato ABE, Ms. Chieko ONODERA, Mr. Kazuhiro OIKAWA, Ms. Naomi SUZUKI, Omose Elementary School, Kesen-numa City, Mr. Hijiri ARAAKE, Mr. Kiyoshi TAKINOSAWA, Mr. Katsuhiro ITO, Mr. Takao NAGANO, The Affiliated Elementary School, Miyagi University of Education
12:20	- Lunch
13:30	
13:30	- Opening Remarks: Mr. Hiroki HASHIZUME, Director, Asia-Pacific Network for Global Change Research (APN)
13:50	Message: Prof. Yoshimi SUGIMURA, President, Konan University, JAPAN
13:50	- Keynote Speech:
14:30	Dr. Gloria SNIVELY, University of Victoria, CANADA
	"Guidelines for Environmental Education in Canada and Manuals on Capacity Building: Environmental Education Principles that Ensure Coexistence between People and Nature"
14:30	- Panel Discussion II: Common Materials for Environmental Education in the Asia-Pacific Region
15:40	Coordinator: Prof. Fumiaki TANIGUCHI, Konan University, JAPAN
	Panelists:
	■ Prof. Jariya BOONJAWAT, Chulalongkorn University, THAILAND
	"Materials for Environmental Education in Thailand: Regarding a Concept of Life"
	■ Prof. Freya MATHEWS, La Trobe University, AUSTRALIA
	"Materials for Environmental Education in Australia: Regarding Environmental Ethics"
15:40	- Tea Break
15:50	
15:50	- Panel Discussion:
17:30	■ Dr. Rajib SHAW, Kyoto University, JAPAN
	"Materials for Environmental Education in India: Focusing on Environmental Education towards Pro-Active Action"
	■ Prof. Siritwat SOONDAROTOK, Phranakhon Rajabhat University, THAILAND
	"Materials for Environmental Education in Thailand: Agriculture and Sustainable Development" [using TV-net meeting system between Thailand and Japan]
17:30	- Summary
17:50	
17:50	Closing Remarks
Day Three - Monday, 30 January	
09:00	- Participant Registration (Konan University, Building 9, Conference Room 5)
09:30	
09:30	- Round Table: Expert Meeting on International Collaborative Study on Guidelines for Environmental Education
12:00	
12:00-13:00	Lunch
13:00-19:00	Post Conference Tour to Aina National Government Park, Kobe

APPENDICES 2: PROFILES OF THE SPEAKERS

Shiro NAKAGAWA

President, Japanese Association of Museums, Japan

Educational Background

D.V.M Veterinary Medicine Dept., Graduated Utsunomiya University, 1957

Professional Career (Including Position)

1962-1968 Chief Veterinarian Ueno Zoological Garden, Tokyo

1968-1969 Study at London Zoological Society ,G.B

1971-1974 Curator of Animal Keeping Dept, Ueno Zoological Garden

1974-1984 Curator of Animal Keeping Dept, Tama Zoological Park, Tokyo

1984-1987 General Director of Tama Zoological Park, Tokyo/Vice Chair of Japanese Association Zoo & Aquariums/A member of

International Zoo Director Association/A Board member of WWF Japan

1987-1993 General Director of Ueno Zoological Garden, Tokyo/Chair of Japanese Association Zoo & Aquariums/Vice President of

Japanese Association of Museums

1994 -2005 Director of Ibaraki Nature Museum (-June 2005)/Director, emeritus of Ibaraki Nature Museum/President of Japanese

Association of Museums/A Board member of WWF Japan/A Member of Nature Conservation Council of Environmental

Agency/Visiting Professor of Tokyo University of Agriculture

Field Zoology; environmental education

Azizan BAHARUDDIN

Director, Centre for Civilisational Dialogue, University of Malaya, Malaysia

Educational Background

BSc Hons Biology, University of Tasmania, 1978

M.Sc Philosophy of Science, University College London, 1979

Ph.D History and Philosophy of Science (science and religion), University of Lancaster, 1989

Professional Career (Including Position)

Azizan Baharuddin is currently a professor at the department for Science and Technology Studies, as well as the Director at the Centre for Civilisational Dialogue, University of Malaya. Thus far she has published about 10 books and 90 articles in the areas mentioned. In the field of environmental education and ethics, her most recent publications include:

(i) Richard Foltz, Azim Nanji, Azizan Baharuddin (eds.). 2003. Islam and Ecology: A Bestowed Trust. University of Harvard Press.

(ii) Azizan Baharuddin (ed.). 2002. Proceedings of the Japanese Society for the Promotion of Science Workshop on Environmental Ethics, Regulation and Education. 7-8 January 2002. Universiti Malaya, Kuala Lumpur.

(iii) Azizan Baharuddin (2001). The Role of Dialogue of Civilizations in Peace Education. Proceedings of First SEACSN Malaysian National Workshop. 7-9 November 2001. pp. 41-42.

(iv) Azizan Baharuddin. 1996. Youths, Values and Development. Yayasan Kobena, Kuala Lumpur.

(v) Azizan Baharuddin (ed.). 1995. Environment and Development: Ethical and Educational Considerations. Institute for Policy Research, Kuala Lumpur.

She is also actively involved as a consultant for various government, ministries and NGO's in projects/areas related to her field of interest.

Field The impact of science on society, science and religion; environmental ethics; inter-religious and inter civilisational dialogue

Fumiaki TANIGUCHI

Director, General Institute for the Environment, Konan University, Japan

Educational Background

BA Economics, 1969, Konan University, Japan

MA Philosophy & Ethics, 1977, Osaka University, Japan

Professional Career (Including Position)

1993-present Trustee, Japan Academy for Health Behavioral Science

1995-present Philosophy Professor, Konan University

1997-present Honorary Visiting Professor, The School of Education, HEBEI University, China

1998-present President, Association of Earth-Environment and Global Citizen

2000-2005 Secretary-General, the Japan Society of Environmental Education

2000-present Honorary Visiting Professor, Center of Environmental Science, Peking University, China

2004-present Director, The Environmental Education Committee of Environmental Council of Hyogo Prefecture

2005-present Director, General Institute for the Environment, Konan University

Field Environmental ethics; bioethics; environmental education

Gloria SNIVELY

Professor, University of Victoria, Canada

Dr. Gloria Snively is an Associate Professor in the Faculty of Education at the University of Victoria, Canada where she teaches science, environmental and marine education; as well as graduate level research courses. She is the Director of the Environmental Education Graduate Program at the University of Victoria. Her professional interests include curriculum development, qualitative research methods, and metaphorical learning theories.

She was a primary, intermediate and junior high school teacher, and for the past 35 years she has conducted nature workshops with schools and groups. Her best selling field guide *Exploring the Seashore in British Columbia, Washington, and Oregon*, 1978 is now in its 11th printing. She has published several marine education curriculum books and numerous professional and research articles. Her interests include giving natural history talks and walks to teachers, park interpreters and community groups; and, of course, exploring seashores firsthand.

Dr. Snively has a strong interest in Aboriginal education and has taught curriculum development and conducted workshops with Aboriginal communities on environmental, marine education and cultural projects. She is particularly interested in the ecological, political, cultural and conceptual problems specific to rural and urban environments where elements of our society are locked in debate and struggle. She is the co-principal investigator for the Aboriginal Knowledge and Science Education Research Project, funded by the Aboriginal Enhancements Branch of the Ministry of Education. The main purpose of the project is to determine why Aboriginal students are under-represented in high school science classrooms, to find ways to significantly improve their involvement and achievement in both elementary and high school science leading to post secondary, and to encourage Aboriginal people to consider science related occupations.

Field Environmental education; marine education; Native Indian education; global education

Freya MATHEWS

Professor, La Trobe University, Australia

Freya Mathews is an Associate Professor of Philosophy and Environmental Enquiry at La Trobe University in Melbourne, Australia. She has published widely in the field of ecological philosophy, particularly ecological metaphysics and its implications. Her books include *The Ecological Self* (Routledge, 1991), *For Love of Matter: Towards a Contemporary Panpsychism* (SUNY, 2003) and *Reinhabiting Reality: Towards a Recovery of Culture* (SUNY, 2005). She is co-editor of the on-line journal PAN (Philosophy Activism Nature).

Outside of the university she has been active in disseminating ecophilosophical ideas in the community and she served for a time as "community philosopher" at CERES (Centre for Education and Research in Environmental Strategies), a visionary environment park in Melbourne.

Field Ecological philosophy; philosophy of place; indigenous philosophy; Taoism

Jariya BOONJAWAT

Professor, Chulalongkorn University, Thailand

Educational Background

BA Science, 1968, Chulalongkorn University
MA Science (Biochemistry), 1970, Mahidol University
Ph.D. Biochemistry, 1974, Mahidol University

Professional Career (Including Position)

1975 Lecturer, Department of Biochemistry, Faculty of Science, Chulalongkorn University, Thailand.
1977 Assistant Professor, Department of Biochemistry.
1981 Associate Professor, Department of Biochemistry.
1981-1983 Director of Graduated Studies, Faculty of Science, Chulalongkorn University.
1984-1988 Head, Department of Biochemistry, Faculty of Science, Chulalongkorn University.
1990-1991 Chairperson, Biochemistry Branch, Science Society of Thailand under the Patronage of His Majesty the King.
1993-1995 IGBP National Committee.
1995-1996 Interim Technical Director of SEA START RC.
1996- 2000 Director, Southeast Asia START Regional Centre [START: Global Change System for Analysis, Research and Training] c/o
Environmental Research Institute, Chulalongkorn University.
1997- 2002 International Global Atmospheric Chemistry (IGAC) Scientific Steering Committee (SSC) of the International Geosphere
Biosphere Programme (IGBP)
1998-2005 Coordinator: TJTTP-JBIC Research Profile 6: Utilization of Natural Rubber
2003-2005 Scientific Planning Group (SPG) of Asia Pacific Network (APN) for Global Change Research

Field Environment and others

Hakobu NAKAMURA

Former President, Pan-Pacific Forum, Japan

Educational Background

MA Science, 1958, Natural Science, Graduate School of Kyoto University
Ph. D. Science, 1961, Graduate School of Kyoto University
1968-1969 Palo Alto Medical Research Foundation, California, USA, Studied Molecular Genetics.

Professional Career

1958-1999 Faculty of Science, Konan University, Taught Molecular Biology.

1972 Professor of Konan University

1999 Emeritus Professor of Konan University

In Konan University Age

Assist of President of Konan University, Dean of Faculty of Science, Chairman of Konan University, President of Pan-Pacific Forum and others.

Publications Professional Papers: more than 230 . Professional Books: more than 40 .

Field Biology

Kazuyuki MIKAMI

Professor, Miyagi University of Education, Japan

Educational Background

BA Education, 1970, Yokohama National University

Ph. D. 1976, Tohoku University

Professional Career (Including Position)

1983 Research Fellow of Alexander von Humboldt-stiftung, Germany

2000-2005 Director of Environmental Education Center of Miyagi University of Education

Present Professor of Environmental Education Center, Miyagi University of Education, and concurrently principal of the Affiliated

Elementary School, Miyagi University of Education.

Field of study: (1) Research on development and utilization of teaching materials for environmental education, and (2) Developmental genetics on protista of inland waters and its application for environmental education.

College class in the MUE: Environmental science, Environmental Education etc., Graduate course: Methods for Environmental Education, Biology, etc.

Award: The award of the Japanese Society of Protozoology (1995).

URL <http://mikamilab.miyakyo-u.ac.jp/>

Field Environmental education and developmental genetics

Rajib SHAW

Associate Professor, Graduate School of Global Environmental Studies, Kyoto University

Educational Background

MA 1997, Yokohama National University

Ph. D. 1999, Osaka City University

Rajib Shaw is currently an Associate Professor in the Graduate School of Global Environmental Studies of Kyoto University, Japan. A graduate of Yokohama National University, and Osaka City University, he joined a private consulting firm in Tokyo, and worked for the overseas projects of Japanese ODA (JICA) and United Nations. He then worked for the United Nations Centre for Regional Development (UNCRD) from 1999 to 2004 before joining Kyoto University. Rajib Shaw worked within different contexts in developing countries in Asia for several UN projects, working closely with the local communities, NGOs, governments and international organizations. Beside UNCRD, he has worked closely with different UN agencies and development banks. His main expertise is on environment and disaster management, and his research interests are: community based risk management, urban risk management, development learning (risk education) and climate change adaptation. He has written more than 40 papers in national and international journals, and edited more than 10 volumes.

Siriwat SOONDAROTOK

Director, Center of Environmental Education, Phranakhon Rajabhat University, Thailand

Educational Background

BA Science, 1975, Kasetsart University

MA Science, 1981, Kasetsart University

Certificate in media development San Hose University USA

Environmental Education from University of Strathclyde in Glasgow Scotland

Professional Career (Including Position)

1979-1980 Training in agriculture from Oregon State University USA

1971-1981 Lecturer at Nakhonsawan Teachers College

1982 Study tour in environmental education at New South Wales Australia

1983 Study Tour in environmental education in Japan

1982-1986 Deputy head of department of agriculture at Nakhonsawan Teachers College

1989-present Lecturer in department of agriculture at Phranakhon Rajabhat University

2002-present Head of Environmental Education Center, Phranakhon Rajabhat University

Field Environmental education; agriculture

Chinatat NAGASHINHA

Vice Director, Environmental Education Center, Phranakhon Rajabhat University

Laddawan KANHASUWAN

Specialist, Environmental Education Center, Phranakhon Rajabhat University

APPENDICES 3: AGENDA (II)

The 5th International Conference of Health Behavioral Science

CONFERENCE OUTLINE

1 Theme	Education on Health and Environment: Integrated Medicine and Environmental Education
2 Dates	Wednesday, 17 August - Monday, 21 August, 2006
3 Venues	Bangkok, Thailand Phranakhon Grand View Hotel Phranakhon Rajabhat University
4 Language	English
5 Organisers	Japan Academy for Health Behavioral Science International Association of Earth-Environment and Global-Citizen
6 Executive Body	Committee for the 5 th International Conference of Health Behavioral Science
7 Co-Organiser	Phranakhon Rajabhat University
8 Supported by	International Sociological Association, The Japanese Society of Health and Medical Sociology, Japan Academy for Mental Health Sociology, Japan Academy for Health Counseling, The Association for Preventive Medicine of Japan, Japanese Association of Alternative, Complementary, Traditional Medicine, Japanese Society for Integrative Medicine, Japan Holistic Medicine Society, The Japan Dental Association, Japanese Nursing Association, Japanese Society for Hospice and Home Care, Home Care Ensuring Clinic Network in Japan, The Asia-Pacific Network for Global Change Research (APN), Institute for Global Environmental Strategies (IGES), Kansai Research Centre, The Japanese Society of Environmental Education: Kansai

PROGRAMME

	Dates	Contents of Conference
Day 0	Wednesday, 16 August	Dong Muang International Airport (Bangkok)
Day 1	Thursday, 17 August	07:00-07:30 Excursion: Visit to Vihāra & Ayuthaya
		07:30-10:30 Participant Registration at Phranakhon Grand View Hotel, Phranakhon Rajabhat University
		10:30-12:30 Departure to Lopburi from Bangkok at 7:30 am
		12:30-13:30 Visit to Vihāra (Wat Pha Baht Nampoo)
		13:30-15:30 Lunch
Day 2	Friday, 18 August	15:30-18:00 Sightseeing in Ayutthaya
		08:15-09:30 Leave for Bangkok – course over by 18:00 pm
		08:30 Participant Registration at Phranakhon Grand View Hotel
		09:30-10:00 Set up displays of poster presentation
		Opening Ceremony
		Opening Address
		▪ Dr. Preang KITRATPORN, President, Phranakhon

			Rajabhat University, THAILAND
			▪ Prof. Dr. Tsunetsugu MUNAKATA, President, the 5 th International Conference of Health Behavioral Science, JAPAN / Executive, International Sociological Association
		10:00-11:00	Keynote Speech I Dr. Kazuhiko ATSUMI, President, Japanese Society for Integrative Medicine / Professor Emeritus, Tokyo University, JAPAN "New Paradigm, Integrative Medicine: Towards Future Health Care System"
		11:00-12:00	Keynote Speech II Dr. Nancy TURNER, University of Victoria, CANADA "Keeping Healthy: Traditional Medicine, Health and Well-being for Canadian First Nations" Lunch
		12:00-13:30	Oral and Poster Presentations
		13:30-15:30	• A-1: Health Behavioral Science Session –Oral Presentation • A-2: Health Behavioral Science Session –Oral Presentation • B-1: Environmental Education Session – Oral Presentation • B-2: Environmental Education Session – Oral Presentation • Poster Presentations Tea Break
		15:30-16:30	Oral Presentations - continued
		16:30-17:30	
		18:00-20:00	Welcome Party (Thai Traditional House)
Day 3	Saturday	09:00-10:00	Participant Registration at Phranakhon Grand View Hotel
	, 19 August	10:00-11:00	Keynote Speech III Prof. Dr. Tsunetsugu MUNAKATA, University of Tsukuba, JAPAN "Dependence and Autonomy in Integrative Health: Schema for Lifestyle Change"
		11:00-12:00	Keynote Speech IV Prof. Fumiaki TANIGUCHI, Konan University, JAPAN "Perspective of Ethical Education Focusing on Integrative Medicine and Comprehensive Environmental Education" Lunch
		12:00-13:30	
		13:30-16:00	Symposium Education on Health and Environment: Regarding Integrative Medicine and Comprehensive Environmental Education
			Coordinator: ▪ Prof. Kazuhiko FUJISAKI, Gifu University, JAPAN ▪ Prof. Laddawan KANHASUWAN, Environmental Education Center specialists, Phranakhon Rajabhat University, THAILAND
			Panelists: ▪ Prof. Kazuhiko ATSUMI, Director, Japanese Association of Alternative, Complementary, Traditional Medicine, JAPAN "International Promotion on Integrative Medicine and Comprehensive Studies of CAM" ▪ Dr. Shokichi TANI, Director, Komatsu Hospital, JAPAN "Medicine of Environment and Bioethics" ▪ Prof. Naoyasu MOTOMURA, Osaka University of Education, JAPAN "School Crisis Intervention in Japan" ▪ Dr. Nancy TURNER, University of Victoria, CANADA "Reconnecting Youth to Traditional Knowledge for Health and Well-being: Examples from British Columbia" ▪ Prof. Siriwat SOONDAROTOK, Director, Environmental

			<p>Education Center, Phranakhon Rajabhat University, THAILAND</p> <p>"Comprehensive Environmental Education Focusing on Sustainable Agriculture and Traditional Culture"</p> <ul style="list-style-type: none"> • Prof. Manoj L. SHRESTHA, Konan University, NEPAL <p>"Traditional Knowledge and Intellectual Property Rights: Problems, Prospects and Issues"</p> <p>Tea Break</p> <p>Satellite Symposium I</p> <p>Forum A-1: Practical Study on Behavioral Modification</p> <p>Coordinator:</p> <ul style="list-style-type: none"> • Prof. Dr. Tsunetsugu MUNAKATA, University of Tsukuba, JAPAN • Prof. Ben YANAI, Kansai University of Welfare Sciences, JAPAN <p>Panelists:</p> <ul style="list-style-type: none"> • Prof. Michiyo OKA, Gunma University, JAPAN <p>"Behavioral Modification in Chronic Illness Patients"</p> <ul style="list-style-type: none"> • Dr. Sayuri HASHIMOTO, University of Tsukuba, JAPAN <p>"Internet Based Remote Counseling to Support Physical Exercise Behavior in Elderly People"</p> <ul style="list-style-type: none"> • Prof. Mitsuki NIREGI, Rissho University, JAPAN <p>"The Modification of Health-Related Quality of Life in Hospitals by Using Narrative Analysis"</p> <ul style="list-style-type: none"> • Prof. Yuko TAKAHASHI, Nara Women's University, JAPAN <p>"Participation in Marathon of Tobacco Abstinence"</p> <p>Forum B-1: Common Materials for Environmental Education in the Asia-Pacific Region: Establishing International Guidelines for Environmental Education (II)</p> <p>Coordinator:</p> <ul style="list-style-type: none"> • Prof. Azizan BAHARUDDIN, University of Malaya, MALAYSIA • Prof. Fumiaki TANIGUCHI, University of Konan, JAPAN <p>Panelists:</p> <ul style="list-style-type: none"> • Prof. Jariya BOONJAWAT, Chulalongkorn University, THAILAND <p>"Common Materials for Environmental Education in the Asia-Pacific Region"</p> <ul style="list-style-type: none"> • Prof. Siritwat SOONDAROTOK, Director of Environmental Education Center, Phranakhon Rajabhat University, THAILAND <p>"Environmental Education Programmes in Thailand"</p> <ul style="list-style-type: none"> • Prof. Manoj L. SHRESTHA, Konan University, NEPAL <p>"Common Materials for Environmental Education and Guidelines: Public Awareness, Management and Biodiversity"</p> <ul style="list-style-type: none"> • Prof. Nancy J. TURNER, University of Victoria, CANADA <p>"Environmental Education Materials: Some examples from British Columbia, Canada"</p>
Day 4	Sunday, 20 August	9:00-10:00 10:00-12:00	<p>Participant Registration at Phranakhon Grand View Hotel</p> <p>Satellite Symposium II</p> <p>Forum A-2: Health Promotion and Developing Participation of the General Public</p> <p>Coordinator:</p> <ul style="list-style-type: none"> • Prof. Tadaharu NAKAO, Yamanashi Gakuin University, JAPAN <p>Panelists:</p> <ul style="list-style-type: none"> • Prof. Kazuhiko FUJISAKI, Gifu University, JAPAN <p>"Planning Health Promotion Programs with Resident Participation"</p> <ul style="list-style-type: none"> • Dr. Eiko KOBORI, Kyoto University, JAPAN

"HIV Risk Behaviors among Ethnic Minorities in Northern Thailand"

▪ Mr. Kreangkrai CHAIMAUNGDEE, The Life Skills Development Foundation, THAILAND

"Child-Friendly School and Community-Based Approach to Solving the Problems of HIV/AIDS Affected Children"

Forum B-2: How to Introduce Environmental Education in National Government Parks: Demonstration of Environmental Education Using On-line TV-net Meeting System between Japan and Thailand

Coordinator:

▪ Prof. Fumiaki TANIGUCHI, Konan University, JAPAN

▪ Prof. Laddawan KANHASUWAN, Environmental Education Center specialists, Phranakhon Rajabhat University, THAILAND

Panelists:

▪ Dr. Siriwat SOONDAROTOK, Phranakhon Rajabhat University, THAILAND

▪ Dr. Chinatat NAGASHINHA, Phranakhon Rajabhat University, THAILAND

"Conservation of National Parks in Thailand"

▪ Mr. Shuji SUZUKI, Director, Aina National Government Park in Kobe, Ministry of Land, Infrastructure & Transport, JAPAN

"Conservation and Utilization of *Satoyama* in the City Park"

Displays of posters taken down

12:30

Lunch

12:00-13:30

13:30-15:00

Workshops

▪ Workshop A: (Health Behavioral Science) Folk Medicine and Massage in Thailand

▪ Workshop B: (Environmental Education) Activities of Environmental Education for Development of Nature Trail: How to Improve Handbooks for Teachers and Students

15:00-15:30

Tea Break

15:30-17:00

Workshops

17:30-19:30

Closing Remarks & Farewell Party (Thai Traditional House)

***Excursion**

1 Date Thursday, 17 August, 7:30am-18:00 pm

2 Outline Tour a Vihāra (Wat Phabaat Naampu), a Buddhist hospital which cares for terminally ill patients such as those infected with HIV in Lopburi. This is an opportunity to observe an integration of health and spiritual care.

3 Course Fee JPY5000

***Satellite Symposium**

Forum A-1 Practical Study on Behavioral Modification

No one plans on becoming sick and being forced to view life from a patient's standpoint. But it happens every day to seemingly normal people when suddenly their bodies betray them. Such rapid onset results in many patients having a lot of difficulty fully comprehending their situation. This can potentially put them at odds with medical staff whose objective treatment goals may be out of the range of understanding for many patients. This creates the main gap between the patient's perspective and the staff's intentions. In reality, chronic illness patients (particularly the elderly) need to aggressively tackle the problems surrounding their quality of life and take a pro-active approach to diet and exercise. In this symposium, we will report on practical cases of behavioral modification using lifestyle changes which elderly and chronic illness patients used to make the effort of re-claiming their health.

Keywords: Behavioral Modification/Medical Behavior of Health/Health Promotion/Elderly Persons/Chronic Illness Patients, tobacco abstinence

General Public
Forum A-2 Health Promotion and Developing Participation of the

"Health Promotion and Developing Participation of the General Public" can be seen as one of the most remarkable health and medical practices in recent years. Rather than the traditional perspective of patients as simply the recipients of health and medical services, these practices serve to integrate the patients within the framework of health services not only as consumers but as active participants. Such practices will allow providers to give customized health and medical services to its consumers/citizens based on the needs of both parties. We would like to discuss "Health Promotion" as well as how "Developing Participation of the General Public" promotes therapeutic and preventative effects. To discuss this theme, we provide a range of topics such as "Smoking Abstinence," "HIV/AIDS," and "Health Planning." Furthermore, to make this discussion more active and profound, we have organized a panel of scholars, researchers, and NGO members from Thailand and Japan.

Keywords: participation of General Public, advocacy, health behavior, health promotion, minorities, HIV/AIDS, boosting development in village, health planning

Forum B-1 Common Materials for Environmental Education in the Asia-Pacific Region: Establishing International Guidelines for Environmental Education (II)

The fundamental objectives of the Asia-Pacific Network for Global Change Research (APN) project of *Guidelines for Environmental Education Focusing on Environmental Ethics and Human Dimension of Global Change* cooperated between Konan University, Japan and University of Malaya, Malaysia are: (1) To make full use of participating countries' experience & knowledge of global change research to formulate guidelines for environmental education & sustainable development. (2) To fill the existing gaps among teachers & other stakeholders involved, such as global change experts, decision-makers, etc., by developing methods/modules for environmental education that can be used as a basis for countries in Asia.

Keywords: Common Terms and Materials/Standardization/Guidelines/Networking/Asia-Pacific Region

Forum B-2 How to Introduce Environmental Education in National Government Parks: Demonstration of Environmental Education Using On-line TV-net Meeting System between Japan and Thailand

The objective of environmental education is to foster a warm-minded young generation who would be ready to participate in activities for environmental issues. In this symposium we will connect Aina National Government Park in Japan with Phranakhon Rajabhat University in Thailand to discuss about how to introduce Environmental Education Programme in National Parks using the on-line TV-net meeting system.

Keywords: Mind Environment/Essence of Education/National Government Park/e-Learning

***Workshops**

- A (Health Behavioral Science) Folk Medicine and Massage in Thailand**
B (Environmental Education) Activities of Environmental Education for Development of Nature Trail: How to Improve Handbooks for Teachers and Students
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APPENDICES 4: PROFILES OF THE SPEAKERS

Manoj L. SHRESTHA

Professor, Konan University, Japan

Dr. Manoj L. Shrestha is based in Kobe, Japan as a full professor teaching Strategic Management and Policy Studies at Konan University, Faculty of Business Administration. He is author of the book entitled “Multinationalization of Firms and Technology Transfer”, published in Japanese by Chikura Shobo (1996), recipient of the Japan Omni Management Award in 1997.

Before joining the Konan University in 1992, Dr. Shrestha was a visiting scholar at the International Center for Japanese Studies (NICHIBUNKEN), Kyoto (1995-98), undertaking his research on Japanese investment and technology transfer in Asia. He was also a visiting senior fellow at the Wharton School, University of Pennsylvania, and visiting scholar at MIT (1998-1999). He was an Adjunct Professor of Technology and Innovation at the Nara Institute of Science and Technology (NAIST) (2004), and Ritsumeikan University of Japan (2002-2005). Since 2001, he has been giving lectures on intellectual property management for the Japan International Cooperation Agency (JICA) and to policy makers worldwide.

Dr. Shrestha received his Ph.D. in Economics (1997) from the Graduate University of Advanced Study (SOKENDAI), Kyoto, Japan. He received his M.A. in International Economics and Business (1985) from Kyoto University, Japan.

Dr. Shrestha is a native of Nepal and one of the founding directors of the Nepal Educational Development Organization. He has been nominated for Marquis Who's Who in the World and Who's Who in American Education for the year 2007.

Nancy J. TURNER

Distinguished Professor, University of Victoria, Canada

Educational Background

PhD (Ethnobotany) 1974, University of British Columbia

BSc (Biology) 1969, University of Victoria

Nancy is an ethnobotanist, ethnoecologist and professor in the School of Environmental Studies. She started learning about indigenous peoples and plants as an undergraduate student at UVic in 1968, working with Saanich First Nations elders. Her doctoral work at UBC concentrated on plant classification systems of Haida, Nuxalk (Bella Coola) and Stl'atl'imx (Lillooet) peoples. Her major research contributions have been in demonstrating the pivotal role of plant resources in past and contemporary aboriginal cultures and languages, as an integral component of traditional knowledge systems, and how traditional management of plant resources has shaped the landscapes and habitats of western Canada.

APPENDICES 5: AGENDA(III)

International Symposium

Establishing Guidelines for Environmental Education Based on Environmental Ethics (III)

3-4 May 2007

Wawasan Room, Rumah University
(University Guest House)
University of Malaya

Organised by:

Sponsored by:
Asia-Pacific Network for Global Change Research (APN)

The Asia-Pacific Network for Global Change Research

The Asia-Pacific network for Global Change Research (APN) is an intergovernmental network whose primary purposes are to foster global environmental change research in the Asia-Pacific region, increase developing country participation in that research, and to strengthen links between the research community and policy makers. It promotes, encourages and supports research activities on long-term global changes in climate, ocean and terrestrial systems and on related physical, chemical, biological and cultural (ethical) socio-economic processes. The 21 APN member countries include Australia; Bangladesh, Cambodia, China, Fiji; India; Indonesia; Japan; Lao People's Democratic Republic of Korea; Russian Federation; Sri Lanka; Thailand; United States of America and Vietnam.

The Asia-Pacific is an important region for the understanding of global environmental problems. Important atmospheric and oceanic phenomena occur here, such as the Asia monsoon and the El Nino phenomena, which affect the world climate, and the region also has tropical forests, deserts, and mountains. At the time, the Asia-Pacific region has a population of nearly 3 billion-more than half of the world's total human population. In addition, its economic growth rate is the highest of any region in the world. Because of its population growth rate and its economic activities, this region contributes to global climate change in a major way. Degradation of the environment, such as deforestation and desertification, is becoming a matter of great concern, as are natural disasters which occur as a result of this degradation, such as floods and droughts.

Thus, observation, monitoring, and research on global change in the Asia-Pacific region are indispensable to understanding environmental changes taking place on a global scale.

Background

Studies on "Environmental Education" have not yet been sufficiently integrated to solve environmental issues. In order to have a common understanding of environmental issues based on environmental ethics, internationally recognized guidelines for environmental education need to be established. The symposium aims to establish preliminary guidelines and discuss the role of networks in environmental education in the Asia-Pacific region, in order to assist in the development and promotion of knowledge related to global change research.

The fundamental objects of the symposium are:

[I] To make full use of participating countries' experience & knowledge of global change research to formulate guidelines for environmental education & sustainable development.

[II] To fill the existing gaps in knowledge among teachers & other stakeholders involved, such as global change experts, decision-makers, etc., by developing methods/modules for environmental education that can be used as a basis for countries in Asia.

[III] Share view points, experiences, knowledge and expertise from invited guests in the fields of the natural, social and human sciences, regarding issues of global change and environmental ethics.

[IV] Discuss how to mobilise these experiences in the Asian context.

[V] Discuss the potential roles of networks in the Asia-Pacific region with respect to environmental education and sustainable development and begin to formulate/develop guidelines for environmental education.

The outcome of both the symposium and workshop will be used to formulate guideline that can be used by countries in Asia to develop environmental education guidelines to suit the needs of their own countries.

Programme

Day 1 -3 May 2007 (Thursday)	
08:00 - 09:00	Registration/Arrival of Guests
09:00 - 09:30	<p>■ Welcome Speech by Professor Dr. Azizan Baharuddin, Director Centre for Civilisational Dialogue, University of Malaya</p> <ul style="list-style-type: none"> ●
09:30-10:30	<p>■ Keynote Address by Professor Fumiaki Taniguchi, Konan University, Japan "Orientation of the Framework for Guidelines of Environmental Education Based on Practice of Environmental Ethics" - Speech and Opening by YBhg. Datuk Hajah Rosnani Ibrahim, Director General, Department of Environment, Malaysia.</p>
10:30-10:45	Tea Break
10:45-12:45	<p>■ Session I Model Programme for Environmental Education: Perspective of Various Cultures</p> <p>Moderator: Professor Fumiaki Taniguchi (JAPAN) Panellists:</p> <ul style="list-style-type: none"> ● Mr. Yoshiaki Asano (JAPAN) ● Dr. Rosli Omar (MALAYSIA) ● Dr. Siriwat Soondarotok (THAILAND) ● Mrs. Angela Hijjaz (MALAYSIA)
12:45 – 14:15	Lunch
14:15- 16:15	<p>■ Session II- Continued Model Programme for Environmental Education: Perspectives of Various Cultures</p> <p>Moderator: Professor Dr. Khairulmaini Osman Salleh (UM) Panellists:</p> <ul style="list-style-type: none"> ● Professor Dr. Nik Meriam Sulaiman(MALAYSIA) ● Professor Yoshihisa Shimizu (JAPAN) ● Dr. Chinatat Nagashinha (THAILAND)
16:15-16:30	Tea Break
Day 2 - 4 May 2007 (Friday)	
09:00 – 10:30	<p>■ Session III Case Studies of Implementation Environmental Educational in the Asia Pacific Region</p> <p>Moderator: Dr. Noor Zalina Mahmood (UM) Panellists:</p> <ul style="list-style-type: none"> ● Ms. Suzana Ariff Baharuddin (MALAYSIA) ● Mr. Nagarajan a/l Rengasamy (MALAYSIA) ● Professor Dr. Gloria Snively(CANADA)
10:30-10:45	Tea Break
10:45-11:45	<p>■ Session IV Analyses of Case Studies on Implementation of Environmental Education in the Asia-Pacific Region</p> <p>Moderator: Assoc. Professor Dr. Khadijah Mohd. Hambali (UM) Panellists:</p> <ul style="list-style-type: none"> ● Professor Dr. Azizan Baharuddin(MALAYSIA) ● Dr. Koh Kian Choon(MALAYSIA)
11:45 – 12:30	■ Session V

	Workshop & Summary/Closing
	Moderator: Professor Dr. Fumiaki Taniguchi(JAPAN) Professor Dr. Azizan Gaharuddin(MALAYSIA)
12:30-14:15	Lunch
14:15 – 16:30	Session VI DRAFTING COMMITTEE - The Skeleton of Guidelines of Environmental Education
16:30-17:00	Tea Break
20:00-22:00	Dinner & Cultural Show at Eighth Residential College
DAY 3 - 5 MAY 2007 (Saturday)	
09:00 –	Drafting Committee Depart to Kuang & Kuala Selangor Nature Park