

Principles and Practice of Environmental Education for School Children in Malaysia

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1.0 INTRODUCTION

Malaysia has a total land area of 303, 752 sq. km consisting of Peninsular Malaysia with an area of 127, 560 sq. km (42%) and East Malaysia in West Borneo with an area of 176, 192 sq. km (58%). It has a total population of about 23 million. The topography consists of about one-third of hill land in the central region. The climate is hot and humid with a high solar radiation. The mean monthly temperature is 27°C and the yearly rainfall exceeds 200 cm.

About 65% of Malaysia is covered by tropical rainforests of highland, low and mangrove forests. There are nearly 30 different types of natural habitats which house a very large number of different flora and fauna species.

2.0 ENVIRONMENTAL EDUCATION PROGRAMME

Environmental Education (EE) is an educational process about, for and through the environment to upgrade the living standards of the people. The environment consists of all the physical, social, economic and political factors which are interrelated and affect the well-being of the people. It aims at improving the quality of life people and the quality of the environment with importance placed on sustainable development

through an understanding and wise management of all the natural resources.

2.1 Aim

The aim of environmental education is to create a society that is sensitive and cares about environmental issues and at the same time is knowledgeable, skilled and committed to act as individuals or as a group to solve environmental problems.

2.2 Objectives

Environmental Education enables students to:

2.2.1 gain experience, knowledge and basic understanding about the environment and its problems.

2.2.2 be sensitive, aware and caring about the environment and problems related to it.

2.2.3 have a positive attitude, value and love the environment and be motivated to be actively involved in the preservation and conservation of the environment.

2.2.4 understand that national development should only be undertaken with careful planning.

2.2.5 acquire skills needed to identify and solve environmental problems.

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2.2.6 be given the opportunity to be actively involved in solving environmental problems.

2.3 The Status of Environmental Education

Environmental Education is not taught as a subject but elements of environmental education are infused across all subjects in both primary and secondary schools.

2.4 Environmental Education Content

The elements of environmental education across the primary and secondary school curriculum are as follows:

2.4.1 God is the Creator of the Universe and All Living Things

2.4.2 Earth and the Universe.

2.4.3 Non-Living Things and Natural Resources.

2.4.4 Living Things and Their Environmental.

2.4.5 Interaction between Man, Animals dan Plants.

2.4.6 Management of the Environment.

- Renewable and Non-Renewable resources.
- Human activities and their effects on the environment.
- Environmental issues, problems and solutions.
- Population and related environmental problems.
- Importance of conserving the environment.

3.0 IMPLEMENTATION STRATEGY

3.1 Among the strategies adopted by the Ministry of Education are the following:

3.1.1 EE is infused across the school curriculum.

3.1.2 Advocation of spiritual, moral and student-centred approaches in the teaching and learning of EE using environmental education learning stations that can easily be set up. Schools are encouraged to set up EE learning stations in the school compound and also in the surrounding areas. These stations are set up for the purpose of practical work and hands-on activities. For example, at the Station of Plants, student compare and contrast leaf shapes and bark texture for identification, ect. The learning stations that can easily be set up in the school compound include:

- Station on Various Types of Pollution
- Station on Plants
- Stations on Animals
- Station on the Uses of Various Types of Energy
- Station on the Recycling of Waste Materials.

3.1.3 Teaching and learning methods that are student-centred, fun and interesting and these include practical work, investigations, experiments, projects, study visits, games, demonstrations, discussion, etc.

3.1.4 Evaluation and monitoring to ensure the success of the environmental programmes carried out in the schools.

3.1.5 Preparation of EE materials to be used in primary and secondary schools such as:

- Teacher's Guide Books on the Infusion of Environmental Educations Element Across the Primary and the Secondary School Curriculum.
- Marine Education Kit (in collaboration with Department of Fisheries).
- Greening of Schools (in collaboration with World Wild Fund for Nature Malaysia).
- Translated version of Mobius Curriculum : Understanding the Waste Cycle (in collaboration with United Motor Works Malaysia).

3.1.6 In-service teacher-training courses on EE for resource teachers EE is a compulsory subject to be taken by trainees in teacher-training colleges).

4.0 SUPPORT PROGRAMMES AND ACTIVITIES

In the Malaysian Development Plans, all the organizations in the public sector are required to give emphasis on EE and on sustainable development which has to be taken into account is also encouraged to follow suit.

Various agencies both from the governmental and non-governmental sectors as well as inter-governmental cooperation have come in support of the EE in Malaysian schools.

4.1 Government Agencies

4.1.1 Department of Environment (DOE), Ministry of Science, Technology and the Environment.

- a) Environmental Awareness Camp
 - This is an on-going activity for school children 14 - 16 years of age.
 - DOE's modules cover seven ecosystem of forest, highland, riverine, marine, organic farming, plantations and urbanization.
 - 3,200 students have participated in 80 camps held all over Malaysia.
- b) WIRA ALAM project
 - Emphasize on the involvement of school children in protecting and preserving the environment.
 - This project is divided into three categories that is:
 - (i) WIRA ALAM DIRI (Knowledge and self awareness)
 - (ii) WIRA ALAM KOMUNITI (Community Activities)
 - (iii) WIRA ALAM (Nature Activities)
- c) PRIAS (Scrap Book Competition)
 - Emphasizes environmental issues.
- d) River Watch Programme
 - To educate and instill awareness among school children on the importance of rivers.
 - Participating schools have to submit report of analysis on water quality of selected river twice a month to DOE. Based on the results. DOE will identify rivers that are clean, half-polluted or polluted.

- e) Environmental Cadets / Brigade
 - A uniform group established in school to create environmental awareness on the significance of conservation.
- f) Environmental Themed Competition
 - Novel-writing Competition
 - Environmental Poetry Writing Competition
 - Inter-Varsity Environmental Debate
 - ASEAN Inter-Varsity Environmental Debate
- g) Environmental Materials
 - Production of Animation Series
 - Video clips
 - Documentaries
 - CDs on environmental songs
 - Era Hijau (Quarterly magazine distributed to all schools)
 - Posters
 - Pamphlets
 - Booklets
- h) Training Programme
 - Environmental Awareness Workshop for selected teachers from each state. Teachers will then conduct environmental champs at school level funded by DOE.

4.1.2 Department of Fisheries, Ministry of Agriculture

The Department of Fisheries give more emphasis on educating public awareness on conservation and protection of marine resources in marine parks.

Marine Education Kit

- With collaboration of the Hong Kong Bank Bhd. (HSBC) and WWF Malaysia, the Marine Education Kit was produced to highlight the importance of Malaysia's rich marine heritage. This kit is a teaching aid focusing on four marine habitats that are mangroves, seashores, coral reefs and oceans and seas.

4.1.3 Department of Wildlife and National Parks (PERHILITAN)

- Nature conservation courses were conducted at all the three Nature Study Centres: Nature Study Centre at Bukit Rengit, Lanchang, Pahang and Nature Study Centre at Kuala Atok, Taman Negara, Pahang.
- The main aim of these courses is to instill awareness among the younger generation on the importance of nature conservation.

4.1.4 National Institute of Public Administration (INTAN)

- A workshop on "Managing Malaysia's Natural Heritage - Investing In Our Future" was conducted in April 2001. Students from selected secondary schools and undergraduates from the local universities attended the workshop.
- In 2002, a workshop on Career Options in Biodiversity will be held for secondary school teachers.

4.1.5 Department of Local Government, Ministry of Housing and Local Government.

- Book and Video on Rubbish and Your Life.
- Song on Recycling in three different languages (Malay, Chinese and Indian).

4.2 Non-governmental Agencies

4.2.1 World Wide Fund for Nature Malaysia (WWF Malaysia)

- WWF sponsored 12 teachers to attend an environmental teaching course in United Kingdom, after which the teachers assembled a handbook and resource kit to meet the urgent need for interesting teaching material.
- WWF has provided technical support in establishing a model field center for environmental education.
- WWF has also conducted pre-service and in-service courses for teachers.
- Production of Resource Kits:
 - (i) Marine Education Kit
In collaboration with HSBC and the Department of Fisheries.
 - (ii) Posters : Water Bird Migration, Greening of School, Green House Effect, Ozone Depletion.
 - (iii) Mobile Education Unit
The unit will visit a school daily by bringing the forest into the classroom through interesting slide shows, films, videos and fun quizzes.
 - (iv) Fraser's Hill Nature Education Centre (FHNEC)
This center was set up with the objective of inculcating a better understanding of highland forests, their importance and the need to conserve them. The center provides visitors with information and programmes to enjoy the highlands of Malaysia.

4.2.2 Malaysian Nature Society (MNS Malaysia)

The educational initiatives of MNS can be outlined as:

- a) Ex-situ approach - through outreach programmes such as schools' nature club, seminars and lectures, exhibitions, etc.
- b) In-situ approach - through the establishment of Nature and Research Centres in Forest Research Institute of Malaysia (FRIM), Cameron Highland, Endau Rompin and Rimba Ilmu Environmental Education Programme in University of Malaya.

4.2.3 Wetlands International - Malaysia Programme

- Organised an intensive training course for Putrajaya Wetland Nature Guides at a constructed wetland at Putrajaya.
- Began developing of a wetland Education Camp Activity Pack Consisting of education modules for wetland camps at the Tasek Bera as the first Ramsar site in Malaysia. Topics covered include general ecology, the concept of sustainability, threats to the natural wetland ecosystem, water supply and wetland statistics.
- Wetland Education Kit
Distributed to primary schools in Bera District, Pahang Darul Makmur.
- Wetland Wonders
In collaboration with Hongkong Bank and the News Straits Times, publish a four-page supplement Wetland Wonders on the last Sunday of each month.

4.2.4 Hong Kong Bank Corporation (HSBC)

HSBC Bank Malaysia Berhad's on-going partnership with the Department of Fisheries Malaysia, Wetlands International - Asia Pacific and other non-governmental organisation such as WWF Malaysia enables the bank to continue supporting various initiatives to protect Malaysia's marine environment for the benefit of present and future generations.

4.2.5 United Motor Works Corporation Sdn. Bhd. (UMW Corporation).

- In 1995 and 1996, UMW sponsored a workshop on 3R using 'The MOBIUS(r) Curriculum: Understanding the Waste Cycle'.
- In 1997, 'The MOBIUS(r) Curriculum: Understanding the Waste Cycle' was translated into the national language Bahasa Melayu and distributed to all secondary school.

4.2.6 Malaysia Newsprint Industries (MNI)

Malaysia Newsprint Industries Sdn. Bhd. supply world-class, premium grade newsprint based on recycling old newspapers and magazines. MNI helps the environment by:

- Organizing The Most Successful Paper Recycling Schools Competition. Most of the schools involved have successfully collected more than 50 tonnes of newspapers.
- Recycling Programme in schools, offices, hotels, charity organization and local community.
- In collaboration with MNS, organized a teacher's Environmental Camp to demonstrate the significance of preserving nature.

4.2.7 British Petroleum Malaysia (BP Malaysia)

In collaboration with INTAN, Nature Education Course focussing on Biodiversity was conducted and funded for school children in 2001. The main aim of this course was to instill awareness among the younger school children in preservation and conservation of Malaysian Biodiversity. In 2002 Workshop on Career Option in Biodiversity will be held for secondary school teachers.

4.2.8 Southern Waste Management Sdn. Bhd.

- A solid waste management company established in 1997 and currently based in Johore, the education unit frequently give exhibitions and talks on recycling solid wastes to school children from 5 - 18 years, undergraduates and to the local community.

5.0 International Cooperation

5.1. Danish Cooperation for Environment and Development (DANCED)

Bilateral relationship between the Danish and Malaysian Government was formalized through a signing of a Memorandum of Understanding (MOU) between the Danish's Ministry of Environment and Energy and the Malaysian's Ministry of Science, Technology and the Environment in 1994.

Project Proposal : Strengthening of Environmental Education in Primary and Secondary Schools in Malaysia.

The Pilot Project:

- The pilot project will take place in two states involving 20 schools and three teachers from each school.
- The teachers will be provided with comprehensive training during the 3 years project period.

- The training will be organized in monthly cluster session where new methods are introduced. The teachers will then plan learning session and reflect on the outcome during the following cluster session where additional competence is added.

6.0 LESSONS LEARNED

Since the implementation of EE infused across the curriculum and not as a subject, the support from various sectors have been of great help in making EE interesting , exciting, fun and assist in making students aware of the need to conserve the environment.

The cooperation has brought closer ties between both the government and non-governmental sectors in their common goal to address the environmental issues in line with the aspirations of the Malaysian government.

Implementation of EE especially in the co-curricular activities bears a high cost and the involvement of non-governmental sectors help alleviate the financial constraints. This has enabled EE to have a wider and better coverage and higher participation of school children in Malaysia.

In terms of training and exposure to EE the assistance from experts in the environmental discipline have been a tremendous help in assisting teachers keep abreast with the current and latest environmental information and issues.

Without doubt, conservation of the environment is a paramount importance for every nation in the world. Therefore it makes sense for government and non-governmental agencies to work in tandem in these issues so as to conserve and safeguard its natural heritage for its future generation.