

The Informal Environmental Education Value Practices Among Adults in Sabah, Malaysia

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ABSTRACT

Education and awareness are the main points in the Green Strategies outlined in Malaysia's National Policy on environment. Informal education aims to complement primary and secondary education to provide acquisition of new-updated knowledge and skills. The advantage of informal education over formal education is its flexible program involving different types of activities related to the environment. Adult environmental education activities in Sabah, one of the states in East Malaysia, are increasingly being promoted and developed by various relevant sectors. The results of Arba'at (1992) study showed that majority of the environmental education goal levels were perceived by primary school teachers in Sabah as important.

The aim of this paper is to present the value practices of informal environmental education among adults in Sabah. Data were gathered through review of literatures on informal environmental education by Sabah Environment Protection Department. Findings from the case studies conducted by the Science and Technology Unit were also included. Results from Sabah Environment Protection Department (2008) showed that most of the environmental education activities carried out in Sabah were awareness campaigns organized by non-governmental organizations (for example, Sabah Environmental Education Network (SEEN) and Sabah Environment Protection Department (SEPD). Other activities that were carried out throughout the state of Sabah included environmental talks, exhibitions, seminars, workshops, conventions, and outdoor activities. All activities implemented were found to have increased public awareness on environmental protection.

Key Words: Primary Education; Secondary Education; Informal; Environmental Education; Awareness; Sustainability.

INTRODUCTION

Informal education refers to education that is driven by the objectives of the learners who often participate by choice or volunteer (Heimlich 1993). The learning process occurs



through activities or programs organized by the organizations constructing the learning opportunities. Adult learning, usually in an informal manner, is a central tool in the process of raising environmental awareness and promoting environmentally supportive action. The existing adult environmental education is experimenting different ways of learning to bring about changes and initiate actions through informal ways (UNESCO 1999).

During the historic Tbilisi Convention organized by the United Nations Educational, Scientific and Cultural Organization (UNESCO) and United Nations Environment Program (UNEP) in 1977 in Tbilisi, environmental education was defined as:

...a process aimed at developing a world population that is aware of and concerned about the total environment and its associated problems, and which has knowledge, attitudes, motivations, commitments and skills to work individually and collectively towards solutions of current problems and the prevention of new one (p. 2).

The participants of the Tbilisi Convention 1977 highlighted that environmental education stemmed from the reorientation of various disciplines. Other highlights included the establishment of links between the disciplines to facilitate an integrated and comprehensive perception of environmental issues, and to encourage more rational actions to satisfy the needs of society (Sato 2006).

The main objectives for environmental education and their respective actions are outlined in Table 1.

Table 1. *The Objectives of Environmental Education and Actions*

Objectives	Actions
Awareness	To help social groups and individuals acquire an awareness of and sensitivity to the total environment and its allied problems.
Knowledge	To help social groups and individuals gain a variety of experience in, and acquire a basic understanding of, the environment and its associated problems.
Skills	To help social groups and individuals acquire the skills for identifying and solving environmental problems.
Participations	To provide social groups and individuals with an opportunity to be actively involved at all levels in working towards the resolution of environmental problems.

Sources: Arba'at (1992; 2006) & Sato (2006)

The Belgrade Charter: A Global Framework for Environmental Education stated that environmental education be developed as one of the most critical elements of an all-out-attack on the world's environmental crisis (UNESCO 1975). The foundations for worldwide environmental education programs must be laid to make it possible to develop new knowledge, skills, values and attitudes towards a better environment.

The target population for environmental education as outlined in the Belgrade Charter is the general public. The major categories were the formal education sectors, which are the pre-school, primary, secondary and higher education students, as well as teachers and environmental professionals in training and re-training. The informal education sector consists of the youths and adults, individually or collectively, from all segments of the population, such as the family, workers, managers and decision makers, in environmental as well as non-environmental fields.

The A

Agenda 21 (Report of the United Nations Conference on Environment and Development) was established during the Earth Summit in Rio de Janeiro on June 3-14, 1992. The objective is to sustain cultures and redress environmental decline without jeopardizing the ecosystem or resources base for the future. Each report speaks to the imperative of education to engender this ethic (Palmer 1998). The 40 Chapters of Agenda 21 included topics ranging from poverty, desertification and free trade to youth and education. The Chapter 25 (Children and Youth in Sustainable Development) and Chapter 36 (Promoting Education, Public Awareness and Training) have significant implications for environmental education.

The Fifth International Conference on Adult Education, organized by UNESCO, was held in Hamburg in July 2007. The workshop on the Adult Environmental Education: Awareness for Environmental Action was to discuss the present state of environmental adults education, its major difficulties and shortcomings, and to develop recommendations for further development (UNESCO 1999). The workshop discussions concluded the following aspects:

- i. The government and donor policies, with regard to adult environmental education, are in a precarious state.
- ii. Environmental education is less developed in adult and informal sectors than in schools.
- iii. Teaching practices in environmental adult education often tend to be limited to the transmission of knowledge rather than to promote a critical examination of environmental problems.
- iv. Practical solutions are seldom promoted in environmental education for adults.
- v. Environmental education is seldom linked to the immediate environment of the participants (p. 13).

Rationale of the Study

Education and Awareness is one of the Green Strategies agenda outlined in Malaysia's National Policy on the environment, which is in line with the recommendations of Agenda 21 (Ministry of Science, Technology, and Environment 2002). The strategies to educate and increase awareness in environmental issues in Malaysia are to:

- i. devise and introduce comprehensive formal and informal environmental education, training strategies, and information dissemination programs;
- ii. integrate environment and development into educational activities from school to tertiary institutions of which relevant method and materials will be developed;
- iii. establish national centers for excellence for interdisciplinary research and education in environment and development;
- iv. review education curricula at all levels of education to ensure a multidisciplinary approach with environment and development issues;
- v. actively promote informal education activities at local and national levels; and
- vi. to strengthen the role of media in disseminating environmental information (pp. 8-9).

Environmental education in Malaysia is actively promoted both in formal and informal sectors. Target groups are diverse, covering all levels of population, ranking from teachers, students, government agencies, developers, restaurant operators and industries or factories, by various federal and state government departments, private sectors, educational institutions and Non-Governmental Organizations (NGOs) (Pudin 2008). Environmental education here is usually geared towards addressing environmental challenges, such as littering, pollutions (air, water, etc), and loss of biodiversity (UNESCO 1999).

The Malaysia Ministry of Education has played an active role in its effort to develop curriculum on environmental education and implementing various teaching and learning strategies in schools. The environmental education, *Alam dan Manusia* (Man and Environment), was once taught in the Malaysian primary school curriculum since 1982 (Arba'at 1992; 2006). Unfortunately, this subject was scrapped out from the school curriculum in 1992. It was then replaced by a subject called Social Studies (*Kajian Tempatan*) which was taught cross other subjects in the school curriculum.

In 1996, the Ministry of Education introduced environmental education across the curriculum (Curriculum Development Centre 1999). One year before, in October 1995, the Teachers' Education Division introduced Environmental Education as a subject taught in all teachers' training colleges in Malaysia (Ahmad Shah 2004). In the pre-service teacher education programs, such as the Malaysian Teaching Diploma (*Diploma Perguruan Malaysia=DPM*) and Post Graduate Diploma in Teaching (*Diploma Perguruan Lulusan Ijazah=DPLI*) program, the environmental education is made compulsory to instill a positive attitude towards the environment amongst the trainees (Kadir 2000). This makes tertiary level of education to implement various environmental science and environment-related courses offered at degree levels. Over the year, the local universities have established their expertise in the environment-related fields.

In the informal settings, various government organizations and NGOs are involved in implementing environmental education in all states in Malaysia—throughout the Nation. Various programs and activities are implemented through talks, exhibitions, radio shows, drawing or coloring competitions, cleaning-up campaign, tree planting, seminars, workshops and other environmental trainings. Various environment-related events, like Malaysia Environment Week, Forestry Day, Water Day, Green Day, Earth Day, World Environment Day and Wetlands Day, are commemorated every year. At present, adult environmental education in Sabah is increasingly developed and promoted by various sectors.

Due to the many organizations involved in implementing the environmental education programs, a network known as the Sabah Environmental Education Network (SEEN), was set up on 17th. March, 2005 (Sabah Environment Protection Department 2008). The setting up of SEEN was to create synergy of all the efforts by the various organizations to build up strong cooperation and coordination amongst the implementers. The current chairman is the Director of the Sabah Environment Protection Department while the deputy is the Director of Sabah Department of Environment. The Environment Protection Department, Kota Kinabalu, Sabah, acts as the SEEN Secretariat.

The objectives of Sabah Environmental Education Network (SEEN) as mentioned by Pudir (2008) were to:

- i. provide a platform for a more cohesive environmental education programs and activities in Sabah;
- ii. provide a platform for training environmental education practitioners in Sabah;
- iii. establish an effective network among the public and private sector, and NGOs engaged in environmental education programs and activities in Sabah;
- iv. share experience, information and other resources in the implementation of environmental education programs and activities in Sabah;
- v. evaluate the effectiveness of environmental education programs and activities; and
- vi. to establish networking with local, national and international environmental education-related organizations.

The aim of this paper is to present the value practices of informal environmental education among adults in Sabah. This study is importance due to the fact that less study is being carried out on informal environmental education in Sabah. According to UNESCO

(1997), it was indicated that adult awareness on environment was still lacking. Therefore, the gap needed to be bridged. Hugen (2009) emphasized that environmental adult education (EAE) was considered new field of study. It faced many challenges! Though, outgrowth of the environmental movement and adult education, together with ecological orientation provided a considerable approach concerning environmental education.

METHODOLOGY

a) Research Design

This paper presents value practices on informal environmental education among adults in Sabah, Malaysia, highlighting two case studies. The method used in preparing this paper were (i) literature review on informal environmental education for adults, locally and globally; (ii) collection of secondary data from a compilation of the case studies by the Science and Technology Unit; and (iii) collection of primary data from the Environment Protection Department

b) Sample

Two case studies were carried out by the Science and Technology Unit in collaboration with Japan International Cooperation Agency (JICA) and World Wide Fund for Nature (WWF) Malaysia. The general public was assumed to be mostly adults. There were also specific campaigns for students being evaluated.

c) Procedure

The adult informal environmental education conducted by the Sabah Environment Protection Department was not included in the list in Case Study A. This is because its programs and activities are discussed separately in the Case Study B. For the purpose of this paper, adult informal environmental education excludes activities participated by school teachers because they were exposed to formal environmental education in their teachers' training institutes. However, this paper includes talk, exhibition, seminar, workshop, and other activities (Table 2).

d) Data Analysis

Case Study A: Adults Informal Environmental Education by Various Organizations

A state wide study on environmental public awareness campaigns in Sabah was conducted in 2002 (Ajam & Iguchi 2003). The campaigns carried out, mostly talks and exhibitions shown in Table 2. The people involved in carrying out the campaigns were interviewed by the study teams to obtain necessary data evaluating the campaigns and information. Five evaluation criteria were used. They were (i) Effectiveness, (ii) Efficiency and Cost Effectiveness, (iii) Impact, (iv) Relevance, and (v) Sustainability.

Ajam and Iguchi (2003) defined the criteria of environmental education as follows:

i. Effectiveness is the degree to which services delivered by the campaigns have enabled beneficiaries to achieve the intended results.

ii. Efficiency was evaluated in terms of the quantity and quality of the outputs in relations to the inputs.

iii. The impact of a campaign means permanent changes in the society brought about by the campaign activities. Such impacts could be unforeseen, positive or negative.

iv. The relevance of a campaign means the extent to which the campaign achievements are relevant and important to the beneficiaries and stakeholders.

v. Sustainability is the degree to which the benefits continue after external support for the campaign has ended.

RESULTS

Data in Table 2 presents the summary results of the campaign.

Table 2. Comparison between Informal Environmental Education for Adults and Students by the Sabah Environment Protection Department (1999-2008)

Year	Talks		Exhibitions		Other Activities	
	Adults	Students	Adults	Students	Adults	Students
1999	3	0	2	0	3	0
2000	3	5	1	0	3	3
2001	3	3	1	1	1	0
2002	8	2	4	2	3	3
2003	1	2	5	0	5	1
2004	10	2	6	4	2	0
2005	10	5	6	4	2	6
2006	4	7	5	3	8	2
2007	7	11	5	8	10	0
2008	3	17	3	9	5	0
TOTAL	52	54	38	31	42	15

Source: Sabah Environment Protection Department (2008)

Case Study B: Adults Informal Environmental Education by Sabah Environment Protection Department

The Sabah Environment Protection Department (SEPD) is a state environmental agency established in 1998 to manage natural resources and the environment in Sabah. The situation in the states of Sarawak and Sabah is unique because under the state laws, land ownership falls under state government, not federal authority (Pudin 2008). The two state governments have, therefore, established their respective environmental agencies. Environmentally, in Sabah, the two main environmental agencies to manage the environment, with specific jurisdictions, are the Federal Department of Environment and the Sabah Environment Protection Department. Each department has its own environmental education division or unit to promote and implement programs and activities.

The adult target groups for informal environmental education of the Environment Protection Department are the general public, community residents, government officers, religious groups, village heads, village committees, and lecturers (Sabah Environment Protection Department 2008). Data on the various environmental education activities for adults compiled from 1999 to August 2008 were mostly talks and exhibitions (Table 2). Most of the talks covered topics on kitchen and garden waste composting methods and general awareness on environmental management. Exhibitions ranged from environmental issues, tools in environmental management, and means and ways to reduce environmental problems. Seminars, workshops and conventions revolved around topics on environmental management. There was also more environmental education activities carried out for adults as compared to students.

DISCUSSION

Discussion is presented based on these case studies.

Case Study A: Adults Informal Environmental Education by Various Organizations

Table 3 explains that 91.7% of the campaigns were found to be “Effective.” This implies that most of the campaigns have, therefore, delivered services, which enabled the participants to achieve the intended results of the campaigns. In terms of campaign efficiency, 75% were “Efficient” in the implementation of campaigns. However, Efficiency needed to be further enhanced to improve the quality of the campaigns. Only 33.3% (Impact) of the campaigns were assessed to have brought about permanent positive changes in the society. All of the campaigns (100%) were claimed to be “Relevance” and important to the beneficiaries and stakeholders. About 50% was assessed to have continual benefits (Sustainability) to the stakeholders even after external support for the campaign has ended.

Based on the results, efforts by various organizations in Sabah to implement informal environmental education for adults, have achieved their objectives to a certain extent. Since the campaigns were focused on environmental awareness, therefore, there were expected to be relevant and important to the stakeholders. However, impacts of the campaigns on individuals or groups need to be studied further. This is to obtain in-depth information on the changes that have occurred as results of the campaigns. Evaluating the impacts and sustainability of any campaign, program or activity is still a challenge to environmental education in Sabah.

Table 3. Campaigns Evaluation Results

No.	Case Studies	Effectiveness	Efficiency	Impact	Relevance	Sustainability
1.	Anti Fish Bombing	Yes	Difficult to assess	Yes	Yes	Unknown
2.	World Forestry Day	Yes	Yes	No significant impact observed	Yes	Difficult to assess
3.	Exhibition on Sustainable Forest Management	Yes	Yes	Yes	Yes	Yes
4.	Environmental Education Program for Rural Communities	Yes	Yes	Yes	Yes	Yes
5.	Reduce the Usage of Plastic Bag Campaign	Yes	Yes	Not direct	Yes	Yes
6.	Species 2000	Yes	No	No significant impact observed	Yes	Yes
7.	Partners for Wetlands Program Vision – Kinabatangan, A Corridor of Life	Yes	Yes	Yes	Yes	Yes
8.	Forest for Water, Water for Life	Yes	Yes	No significant impact observed	Yes	Yes
9.	World Environmental Day	Yes	Yes	Not direct	Yes	Unknown
10.	World Wetlands Day	Yes	Yes	Unknown	Yes	Unknown
11.	Sabah Clean-up Month	Yes	Yes	Unknown	Yes	Unknown
12.	Voluntary Guardian Program	No	No	No significant impact observed	Yes	Unknown
Positive response (100%)		91.7%	75.0%	33.3%	100.0%	50.0%

Source: Ajam & Iguchi (2003)

Case Study B: Adults Informal Environmental Education by Sabah Environment Protection Department

Table 2 shows that the most implemented environmental education activity for adults by the Sabah Environment Protection Department (SEPD), from 1999 until August 2008, was environmental talks (Adults 52; Students 54). Exhibitions had also been carried out extensively throughout the period of nine years. Various seminars, workshops and conventions were implemented 30 times for adult target groups (Fig 1). A range of activities had also contributed in creating awareness on the importance of environmental protection. It was generally summarized that the Sabah Environment Protection Department had implemented more informal activities for adults than students for the same period. However, for talks and exhibitions, there was an increasing trend of invitation from schools.

In terms of evaluation of the programs and activities, the SEPD had carried out basic evaluations using feedback forms for the activities. Generally, based on the increasing number of activities, it could be concluded that responses of activities from target groups were encouraging and that there had been an increased public awareness on environmental protection and roles of the Department. Cooperation among government agencies, private sectors and NGOs had also enhanced through the Sabah Environmental Education Network (SEEN).

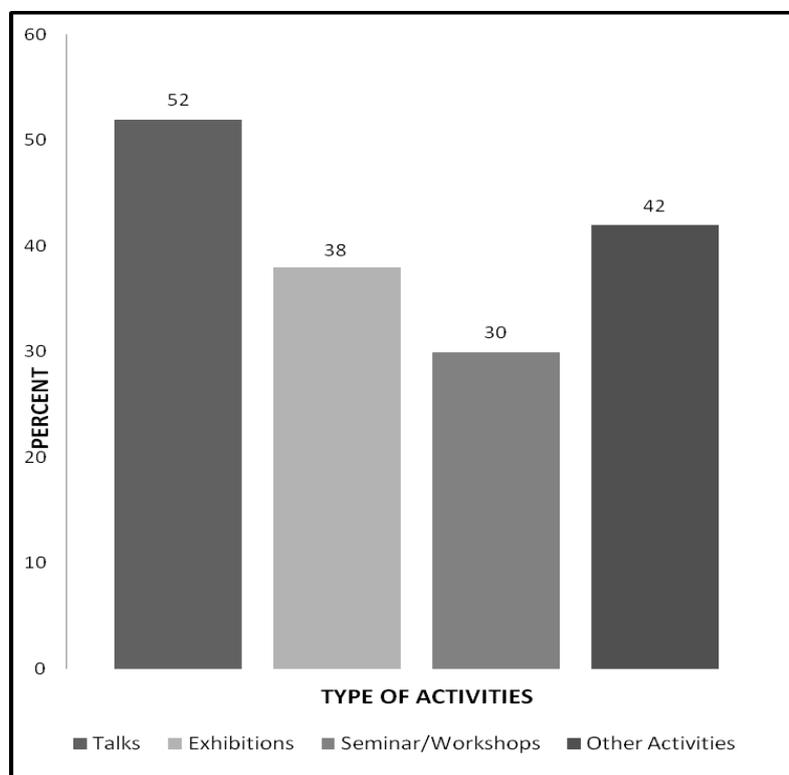


Figure 1. Adults Informal Environmental Education Activities (1999-2008)

CONCLUSION

The interesting learning method used in adult informal environmental education here is that people are directly involved with nature. Targeted groups responded positively and encouragingly toward activities. This indicates an increase in the public awareness on the necessity of environmental protection as observed in the roles played by the Department. The

enhancement through the cooperation among government agencies, NGOs, and private sectors is obvious. Informal education is a vital component of environmental education. Majority activities of the programs involve publics of all levels from youngsters to adults. The differences mode of learning is that the learning environment is outside education formal setting. The structure of learning is also flexible but interesting. It does not follow specific program structure as implemented in the classroom setting. The interesting method of learning is that people are directly involved with nature. They learn by directly contacted with the nature, like fauna and flora. Visitation to the nature, like forest, which has rich in biodiversity of fauna and flora, can be very meaningful way of learning.

SUGGESTIONS

Many nature sites of Environmental Education Centres and other relevant centres can be found all over in every state. Wildlife sanctuaries, rehabilitation centres, zoos, mangrove re-planting plans and programs, recycling centres, water treatment plants, and landfills, for examples, can become centres for informal environmental education “schools.” Thus, this form of education could be considered through “learning by doing,” or “learning by experience,” which is believed to be highly meaningful and, therefore remembered longer by these “outside classroom” or “informal students.” It is also suggested that more learning sites be found and engaged for the program. To evaluate the informal environmental education program, better tools and mechanisms, need to be extensively explored and developed. This is to ensure the effectiveness of the program of its implementation, suitability, and sustainability, whether by the government officers and/or specialist volunteers come into reality and effective. Many more non-government organisations (NGO), wider and comprehensive levels people in the community should offer hands and commitment to make this informal environmental education be recognized for the long-life learning (3L) education program.

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