AN EVALUATION ON THE OUTCOMES OF THE *SEKOLAH RAKAN ALAM SEKITAR* (SERASI) PROGRAMME IN SABAH, MALAYSIA

SUSAN PUDIN

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DECLARATION

I hereby declare that the material in this thesis is my own except for quotations, excerpts, equations, summaries and references, which have been duly acknowledged.

28 July 2008

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CERTIFICATION

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ABSTRACT

AN EVALUATION ON THE OUTCOMES OF THE *SEKOLAH RAKAN ALAM SEKITAR* (SERASI) PROGRAMME IN SABAH, MALAYSIA

This study evaluated the implementation of SERASI Programme in Sabah in terms of attitude change and outcomes. Evaluation of attitude change focused on three attitude components namely cognitive, affective and behavioural. Intended and unintended outcomes of the programme were also evaluated. The evaluation showed that the implementation of SERASI in the 39 schools had enhanced and improved environmental attitude amongst teachers and students. Collective change of attitude among the teachers and students may have resulted in behaviours that in turn produced positive environmental outcomes. Based on the teachers' years of service, it was found that there was a significant difference in environmental attitude after SERASI implementation. It was also found that there was no significant difference in environmental attitude between teachers who attended environmental education courses and those who did not. The results showed there was no significant difference in environmental attitude between teachers who teach environment-related subjects and non-environment related subjects, between graduate and non-graduate teachers, and between primary and secondary school teachers. For students, it was found that there was a significant difference in environmental attitude between leaders and non-leaders, and between primary and secondary school students. The results showed that there was a positive correlation between teachers' understanding on SERASI and their environmental attitude. Positive correlations were found among the cognitive, affective and behavioural components of teachers' and students' environmental attitudes. Based on the results, 88.5% of teachers and 90.3% of students responded that their schools' surroundings were more pleasant and cleaner after SERASI was implemented. Therefore, this particular outcome was the most obvious outcome of SERASI in the 39 schools. These findings were concluded by both qualitative and quantitative data analyses. There were other intended and unintended outcomes found in the research. For future research pertaining to the evaluation of SERASI Programme, studies should include more districts and schools, and other aspects of SERASI. The research findings are important to the organisers of SERASI Programme and to other relevant organisations working closely in the field of environmental education in Sabah.

ABSTRAK

Kajian ini telah menilai pelaksanaan Program SERASI di Sabah dari segi perubahan sikap dan hasil pelaksanaan. Penilaian perubahan sikap tertumpu kepada tiga komponen sikap iaitu kognitif, afektif dan tingkahlaku. Hasil-hasil pelaksanaan yang dijangka dan di luar jangkaan juga dinilai. Kajian menunjukkan bahawa pelaksanaan SERASI di 39 buah sekolah telah mempertingkatkan dan memperbaiki sikap para guru dan pelajar terhadap alam sekitar. Perubahan sikap bersama di kalangan guru-guru dan para pelajar kemungkinan besar telah merubah tingkahlaku mereka dan seterusnya memberikan hasil positif dari segi alam sekitar. Berdasarkan tempoh perkhidmatan para guru, kajian mendapati bahawa terdapat perbezaan yang signifikan dalam sikap terhadap alam sekitar selepas SERASI dilaksanakan. Tiada perbezaan signifikan sikap terhadap alam sekitar antara para guru yang pernah menghadiri kursus pendidikan alam sekitar dan mereka yang belum pernah. Kajian juga mendapati bahawa tiada perbezaan signifikan dalam sikap terhadap alam sekitar antara guru-guru yang mengajar subjek yang berkaitan dengan alam sekitar dan subjek-subjek lain, antara para guru siswazah dan bukan siswazah serta antara guru-guru sekolah rendah dan menengah. Bagi para pelajar pula, kajian mendapati terdapat perbezaan signifikan dalam sikap terhadap alam sekitar antara pemimpin dan bukan pemimpin, serta antara para pelajar sekolah rendah dan sekolah menengah. Kajian mendapati terdapat korelasi positif antara kefahaman para guru mengenai SERASI dan sikap mereka terhadap alam sekitar. Korelasi positif juga didapati antara komponen-komponen kognitif, afektif dan tingkahlaku bagi sikap para guru dan pelajar terhadap alam sekitar. Berdasarkan keputusan kajian, 88.5% guru dan 90.3% pelajar menyatakan bahawa persekitaran sekolah semakin ceria dan bersih setelah SERASI diperkenalkan. Oleh yang demikian, hasil ini adalah hasil pelaksanaan SERASI yang paling ketara di 39 buah sekolah yang terlibat. Keputusan ini telah dicapai oleh kedua-dua analisa data kualitatif dan kuantitatif. Hasil-hasil lain yang dijangka dan di luar jangkaan didapati dalam kajian ini. Kajian yang dikenalpasti yang boleh dijalankan pada masa akan datang dari segi penilaian program SERASI dicadang untuk merangkumi lebih banyak daerah dan sekolah serta pelbagai aspek Program SERASI. Dapatan kajian ini adalah penting kepada penganjur Program SERASI dan organisasi berkaitan yang terlibat secara aktif dalam bidang pendidikan alam sekitar di Sabah.

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ABBREVIATIONS

DOE	Department of Environment
EPD	Environment Protection Department
ESD	Education for Sustainable Development
IUCN	International Union for the Conservation of Nature and Natural Resources
NGO	Non-Governmental Organisation
SEEN	Sabah Environmental Education Network
SERASI	*Sekolah Rakan Alam Sekitar*
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
WWF	World Wide Fund for Nature

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CHAPTER 1

INTRODUCTION

1.1 ENVIRONMENTAL EDUCATION

The development of environmental education is not new (Palmer, 1998). The environmental education movements have evolved over many years throughout the world. It is used as one of the tools to manage the environment to create an environmentally responsible society. In the process of environmental education, individuals obtain understanding of concepts and knowledge of the environment. They also acquire experience, values, skills and knowledge necessary to form judgements, to participate in decision-making and to take appropriate actions in addressing environmental issues and problems. Environmental education is an instrument to enable participation and learning of various age groups based on a two-way communication, either formal or informal.

Among the many definitions of environmental education, one of them was formulated by the International Union for the Conservation of Nature and Natural Resources (IUCN) (Palmer, 1998):

> the process of recognising values and classifying concepts in order to develop skills and attitudes necessary to understand and appreciate the inter-relatedness among man, his culture and his biophysical surroundings. Environmental education also entails practice in decision-making and self formulating of a code of behaviour about issues concerning environmental quality.

Another definition of environmental education was conceived during the historic Tbilisi Convention sponsored by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) and United Nations Environment Programme (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 ones (Sato, 2006).

The participants of the Tbilisi Convention 1977 highlighted that environmental education stemmed from the reorientation of various disciplines and the establishment of links between them 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 basic objectives of environmental education – awareness, knowledge, attitudes, skills and participation – identified in the Tbilisi Declaration 1977 have remained the core mission of environmental education over the last 30 years or so (Chenrachasit, 2006). The main objectives of environmental education and their respective actions (Sato, 2006) are summarised in Table 1.1.

Table 1.1: 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.
Attitudes	To help social groups and individuals acquire a set of values and feelings of concern for the environment, and the motivation for actively participating in environmental improvement and protection.
Skills	To help social groups and individuals acquire the 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 the resolution of environmental problems.

Source: Sato (2006)

In 1980, a report entitled The World Conservation Strategy published by IUCN, UNEP and World Wide Fund for Nature (WWF) contributed to the development of the concept of environmental education (Sato, 2006). This key document stressed the importance of resource conservation through sustainable development and the

mutual inter-dependency of conservation and development (Chenrachasit, 2006; Palmer, 1998).

Agenda 21 - the centrepiece of agreements during the United Nations Conference on Environment and Development or The Earth Summit in Rio de Janeiro on 3-14 June 1992 – was a major action programme setting out strategies for nations to achieve sustainable development in the 21st century (Palmer, 1998). The 40 chapters of Agenda 21 included topics ranging from poverty, desertification and free trade to youth and education. Chapter 25 (Children and Youth in Sustainable Development) and Chapter 36 (Promoting Education, Public Awareness and Training) have significant implications for environmental education.

Another important document produced during the Summit was the Rio Declaration. This was a statement of 27 principles for sustainability which provided the basis for the programmes of international co-operation in Agenda 21. To summarise, the Rio Declaration prepared a blueprint for a sustainable future, while Agenda 21 provided a guiding programme for interpretation.

With the latest development on Education for Sustainable Development (ESD), environmental education experts have argued and debated on the difference between environmental education and ESD. Environmental education and ESD are concerned with achieving the same ends: enabling learners to question unsustainable practices and participate in changing these practices (Gough, 2006a). The difference is in the scope covered in achieving this goal and in the focus. The goals and objectives of environmental education have usually referred to the environment and its associated problems, and finding ways of resolving these (Gough, 2006a). ESD encompasses environmental education, setting it in the broader context of socio-cultural factors and the socio-political issues of equity, poverty, democracy and quality of life as well as a development perspective on social change and evolving circumstances (Gough, 2006a). (Gough, 2006a) further elaborated that ESD still had much in common with earlier conceptions of environmental education, including objectives encouraging critical thinking, values analysis and active citizenship in environmental contexts, but differed in that ESD is envisaged as ultimately about

education and capacity building and only secondly about environmental problem-solving.

In Malaysia, the importance of environmental education towards sustainable development is greatly emphasised in the National Policy on the Environment 2002. The policy sets out the principles and strategies to ensure that the environment remains productive, both ecologically and economically (MSTE, 2002). The objectives of the policy are to achieve the following:

a. A clean, safe, healthy and productive environment for present and future generations;
b. Conservation of the country's unique and diverse cultural and natural heritage with effective participation; and
c. Sustainable lifestyles and patterns of consumption and production.

The policy comprises of seven green strategies to attain the policy objectives. One of the key areas of the green strategies outlined in the policy is education and awareness. Environmental education and awareness is promoted across the board to achieve a deeper and better understanding of the environment and sustainable development. Incorporating information dissemination and training in line with the recommendations of Chapter 36 (Promoting Education, Public Awareness and Training) in Agenda 21 has significant implications for environmental education.

Various governmental organisations such as Department of Environment, Environment Protection Department, Forestry Department, non-governmental organisations (NGOs) such as Malaysian Nature Society and Sabah Environmental Protection Association, and the private sector such as Shell and Petronas are involved in the implementation of environmental education in Malaysia. They conduct informal environmental education to instil and create awareness and generate actions amongst the public and various target groups in the community.

Formal teachings for environmental education are carried out through an approach known as environmental education across the curriculum for all primary and secondary schools throughout the country. Environmental education is not taught as a single subject but rather infused in each subject in schools. These

subjects include *Bahasa Melayu*, English, Mathematics, Science, Living Skills, Religious Studies, Physical Education, Geography and *Kajian Tempatan*. Some subjects such as Geography, Science and *Kajian Tempatan* have the elements of environmental education incorporated in the syllabus. However, for other subjects, teachers are required to incorporate elements of environmental education during their teaching periods.

The 3K Programme on cleanliness, health and safety has been implemented in schools in Malaysia since 1991 (Yahaya, 2003). Its aim is to ensure that all schools have a strong system to deal with issues pertaining to safety, health and cleanliness in schools. The implementation of environmental education across the curriculum and the 3K Programme has exposed students and teachers to the importance of protecting the environment and to ensure its cleanliness. A document entitled *Pelan Induk Pembangunan Pendidikan* 2006-2010 by the Ministry of Education Malaysia reiterated among others the importance of strengthening cleanliness, health and safely in schools. The ministry is also publishing a guideline on cleanliness practices in schools. This will detail out activities that can be carried out by students and teachers. Based on the ministry's evaluation, there has been an improvement in the number of students practising good values related to cleanliness, health and safety in schools (MEM, 2006).

The establishment of green schools worldwide as an environmental education programme and award scheme is an effort to inculcate and instil a deep sense of environmental awareness and action amongst the younger generation. A green school is one, which adopts a process, in which it keeps improving itself under the condition of sustainable development, exercises self-management, improves educational methods and approaches, improves its operational efficiency and profits. It also continuously solves its own issues pertaining to sustainable development (Jiang, 2004).

A new term, ESD-schools, is being proposed at the international level through the Environment and School Initiatives (ENSI) based in Switzerland. By using the new term, there will be new challenges for schools that wish to engage in ESD-oriented development (Breiting, Mayer, & Mogensen, 2005). According to Breiting, Mayer and

Mogensen (2005), ESD is not only dealing with aspects of people's dependence on the quality of the environment and access to natural resources now and in the future. It also deals with aspects of participation, self efficacy, equality and social justice that are essential perspectives in preparing students for the engagement in sustainable development.

1.2 *SEKOLAH RAKAN ALAM SEKITAR* (SERASI)

As part of the Federal Government of Malaysia's effort to promote the concept of green schools, the *Sekolah Lestari* environmental education programme and award scheme has been established. The aim of *Sekolah Lestari* is to support and enhance the implementation of the National Policy on the Environment 2002 (DOE, 2004). *Sekolah Lestari* adopts an integrated approach involving the school community as a whole, their families, local communities, government, private sector and non-governmental organisations. It embraces environmental education through continuous infusion and incorporation of positive environmental values in school management, curriculum, co-curriculum and greening activities towards sustainable development. *Sekolah Lestari* also serves as a centre for learning and education that can influence the school community and society towards a better way of life.

At the Sabah state level, a similar environmental education programme known as the Environment-Friendly School Programme or *Program Sekolah Rakan Alam Sekitar* (SERASI) was implemented in 2003 in Sabah. SERASI is a long-term environmental education programme and award scheme for primary and secondary schools in Sabah jointly organised by the Environment Protection Department, Sabah Forestry Department, Science and Technology Unit, Environmental Action Committee Sabah, Department of Environment, Sabah Education Department, Sabah Wetlands Conservation Society (Kota Kinabalu Wetland Centre) and Shell Malaysia. The wide interest in SERASI from various organisations has helped to ensure its sustainability throughout the years. SERASI is implemented in conjunction with the Malaysia Environment Week (MEW).

SERASI was introduced to acknowledge the efforts by schools in Sabah in promoting environmental education and creating awareness amongst their students,

teachers and staff. The objectives of SERASI are as follows (EPD, 2005a; Pudin, 2006):

a. to enhance awareness on the importance of environmental protection and conservation in schools;
b. to instil positive and caring attitude for the environment amongst the students, teachers and staff as well as the local communities;
c. to encourage innovation towards the creation of a school's environment that emphasises on environmental protection and conservation; and
d. to acknowledge the continuous efforts by schools in promoting environmental education programmes.

The concept of SERASI is based on the continuous environmental protection and conservation practices. It also supports and strengthens environmental education across the curriculum. SERASI takes a holistic approach that connects schools with the local communities, families, the government, private sector and NGOs. This concept also emphasises on the integrated approach in management, curriculum, co-curriculum and greening of schools (EPD, 2005a).

Apart from being an environmental education programme, SERASI is also an award scheme in which awards are given as incentives to schools. There are five main criteria to guide schools in implementing SERASI namely environmental management, environmental activities, greening the school, cleanliness and beautification of school and environmental innovation (EPD, 2005a). These are also the criteria upon which schools are evaluated for the awards. Factors considered in environmental management are incorporation of environmental values in school's vision/mission, availability of environmental materials, records of environmental management in school and dissemination of environmental information in school. Environmental activities include cleaning up activities, environment-related celebrations (Earth Day, World Environment Day, Malaysia Environment Week, etc), seminars, workshops, exhibitions, camps, and study trips. Greening the school involves efforts in reusing rainwater, compost-making, wise usage of paper, etc. Cleanliness and beautification of school includes efforts in improving school's landscape, drains, canteens and toilets, and proper management of waste.

Environmental innovation efforts include activities promoting environmental innovation in schools.

SERASI is promoted to all rural and urban primary and secondary schools in Sabah. However, due to limited resources, personnel and time on the part of the organisers to visit more than 1000 schools in the state annually, schools are nominated by District Education Offices to represent each district in the programme. This is called Level One (Figure 1.1). Nominations are received and handled by the SERASI Secretariat. The number of schools in each district differs from one another. Based on data from the Education Department in 2006, there are 209 secondary schools and 1060 primary schools in all 26 districts in Sabah. The number of schools nominated from each district in 2006 was based on the quota of 1:3 for secondary schools and 1:7 in primary schools. For example, if the district of Beaufort has nine secondary schools and 41 primary schools, then the number of schools representing the district is three secondary and six primary schools. Level Two involves visits to all the nominated schools in 26 districts by a group of judges. Based on the results of Level Two, 20 primary and 20 secondary schools will enter Level Three or the Final Round. Another group of judges will visit the finalists in which interviews are carried out with principals, teachers and students of the schools. Interviews include questions on the level of commitment, involvement, action plans for environmental education in schools and involvement of local communities in the school's programmes.

In 2006, *Wira* SERASI (SERASI Hero) was introduced. Schools that have won the overall award since 2003 are eligible to participate. These schools are judged independently from the finalists. For the 2007/2008 programme, another category called the *Wira Harapan* SERASI (Potential SERASI Hero) was introduced whereby schools that have won awards in any of the categories are eligible to participate. They are required to submit reports of their efforts, and visits will also be conducted by a group of judges.