

Environmental Education in Malaysia, Progresses and Challenges Ahead (Review)

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Abstract: This paper reviews public awareness, knowledge and attitude on environmental aspects in Malaysian educational system and highlights gaps and challenges. The review found that however environmental education components were existed in various sources within the existing educational system; there are still huge gaps on public awareness in Malaysia. The educational system needs to invest more on teachers who are involved in related topics. Teachers would play an important role to increase the public awareness throughout students in primary and secondary schools. This is concluded that more effectiveness of environmental educational system relies on integrity of topics in one independent subject rather than appearances in various subjects. Students would perform an acceptable level of understanding if topics are being actively taught practically in which trainees experience tangible issues than theoretical. Budget however is always concerned in various countries; Malaysia demonstrated a good economic growth that facilitates enough financial allocation if government is convinced to approach towards sustainable development.

[Aminrad Z, Zakariya SZBS, Hadi AS, Sakari M. **Environmental Education in Malaysia, Progresses and Challenges Ahead (Review)**. *Life Sci J* 2012;9(2):1149-1154] (ISSN:1097-8135). <http://www.lifesciencesite.com>. 171

Keywords: Awareness, Knowledge, Attitude, Environmental education, Malaysian School System

1. Introduction

In the end of the 20th century, the environmental concerns grew much greater, not only among the developed countries, but also in some developing and underdevelopment nations. The common reason was that the consequences of environmental damages to some vital resources became so apparent and horrifying that governments became worried and mass media found great value for their headlines due to the public concern (Karimi, 2003). Besides destructive trend on environment during and after the industrial revolution, sluggish grew on the environmental awareness and initiatives revealed bitter consequences of the environment. The most helpful initiative, activities and movements resulted in international, regional and local agreements addressing specific issues are the increase of environmental awareness. International Environmental Events and Multilateral Environmental Agreements are few of the many improvements that emphasize the importance of the role of environmental education in safeguarding different components of the environment. Also there are different ways such as environmental education and introducing environmental issues to public for protection of the environment (Khorshid Dost, 2003).

In 1978, UNESCO (United Nations Educational, Scientific and Cultural Organization) at the Tbilisi Declaration stressed the need of common

use of environmental education (EE) in educational system. During the Tbilisi Convention, environmental education was defined as: 'a process of developing a world population that is aware of and concerned about the total environment and its associated problems, and which has the knowledge, skills, attitudes, motivation and commitment to work individually and collectively towards solutions of current problems and the prevention of new ones'. The Agenda 21 is stressed on sustainable development in the 21st century for all level which leads to people in businesses and governments in economically, socially and environmentally for have a sustainable planet at worldwide, national and local levels. Ibarahim, (2006) in her interview about environmental education stated that, "Malaysia, a signatory party to the Rio Earth Summit, has an obligation to adopt and implement Agenda 21 at the national and local levels in which states clearly as: "One of the fundamental pre-requisites for the achievement of sustainable development is broad public participation in decision making". Individuals, groups and organizations should have free access to information relevant to environment and development held by national authorities". In Malaysia, environmental education subject is still as critical issue which is important for creating of an action to have environmental society. Malaysian

Ministry of Environment (1993) defines environmental education as following:

'It is through knowledge and awareness that positive values and attitudes emerge; values and attitudes that will prompt action to make the adjustments to lifestyles and consumption habits that will reduce the burden we place on the environment'.

Despite, growth of interest in environmental education, several of the studies and agreements recognized absence of environmental awareness and proper environmental education as the main cause of major environmental problems and issues. Therefore, emphasizes providing of public environmental awareness and environmental education for all age levels of human societies. Most of agreement was recommended of public participation in decision making, planning, implementation and monitoring environmental plans.

2. The Environmental Education Elements in Malaysian Education System

There has been a strong movement in Malaysian educational system in the past years towards an outstanding quality. This educational system follows primary to tertiary levels which is under categories including six years of primary, five years of secondary, and two years of pre-university before the student apply to get enrolled into public or private universities inside the country or oversea. There are three type of certificates in Malaysian education system namely LCE, MCE and HSE that refers lower certificate of education, the Malaysian certificate of education which is equivalent to "O" level in the G.C.E. system, and the higher school certificate which is equivalent to "A" level", respectively (MOE, 2010).

Malaysian educational system emphasizes the building of a multiracial and multicultural society where good and useful citizens are being built. Suhaimi (1982) mentioned that under these conditions the practice of liberal education would find limited expression for the development of free, school based, innovations on Environmental Education in schools. He emphasized that in elite system, the focus point for success is learning and tends to provide academic curriculum. In this condition negative trend of environmental education was concerned. This has been shown that volunteer contribution of pupils may provide a better stamina towards the meeting of environmental education's objectives.

Science curriculum in schools has been changed in primary and secondary in past decades and initiated a progressive replacement of traditional courses with modern approaches. Science curriculum was started in the late sixties had no specific

objective on environmental education. Environmental elements were included into the curriculum gradually and enhanced by interested subject teachers. In the late seventies, there has been some official move to encourage adding topics on environmental education somehow to do not weaken the current academic contents. This gradual change has been developed environmental education on multidisciplinary infusion method. This integrated environmental elements into single subject lessons, such as geography, integrated sciences, biology, chemistry and the humanities.

According to Daniel (2006), there are two types of education in Malaysia which is including formal and informal education. Formal education consists of primary and secondary schools. These schools are under law, order and monitoring of the ministry of education (MOE). In 1991, Education Planning Committee (of MOE) has decided to integrated environmental education in national educational system. Followed by this, the environmental education was integrated to the new primary and secondary school curriculums. After this, the outcome from the committee, the MOE was committed to conduct the projects, activities, programs and all materials which were approved by the committee. In 1994, there was three main objectives and elements introduced for primary levels. These elements were containing Islamic education, Moral education, Mankind and environment. Later on, in 1994, the subject of environments was divided into science and moral studies. The subjects of environmental education were detailed into curriculums. For better understanding about the environmental subjects, the curriculum was divided into 3 syllabuses such as textbook, work book and activity book. The Secondary School Integrated Curriculum had similar elements to primary school. The subjects for these groups contained Islamic, Moral, Science and Social Education. The target and objective for the Secondary School Integrated Curriculum are to enhance the student's ability and to unify their skills and noble values, integrating in a national language (Bahasa Malaysia), having a real knowledge and finally cooperation and integrate of curriculum with co-curriculum (Mok, 2003). As mentioned earlier, the ministry of education has to lead and implement to the development of environmental education among schools. Also the MOE is granted to increase the student's awareness about the environment using appropriate programs and relevant requirement. Malaysian education system is moving towards to develop according to vision 2020. In this line, the MOE is trying to update the subject of environment in their strategies. Some of the policies, strategies

and action plans are shown in Table 1 (Nadson and Rasid, 2005).

Table 1, Policies, strategies and action plans in Malaysia (Nadson and Abd Rasid, 2005)

Policies, strategies and action plans in Malaysia No.	National Policy/Plan	Strategies/Action Plan/Statement
1.	National Policy on Biodiversity (1998)	Incorporate the study of biological diversity and related fields into the curricula of schools and institutions of higher learning
2.	National Policy on the Environment (2002)	To achieve a deeper and better understanding of the concepts of environmentally sound and sustainable development, and a caring attitude towards nature, EE and awareness will be promoted across the board, incorporating information dissemination and training, in line with Agenda 21
3.	National Integrity Plan (2004)	Community Institution – emphasizing on increasing the awareness of environmental conservation
4.	9th Malaysia Plan (2006-2010)	Appropriate interventions and changes will be made through the school curriculum to create a deeper and longer lasting awareness of the need to care for the environment. In addition, the energy, ideas, enthusiasm of the environmental NGOs will be harnessed to complement and supplement efforts by the government in promoting the environment.

3. Environmental Awareness, Knowledge and Attitude in Malaysia

Malaysia as a developing country is serious to provide outstanding quality of education for citizens. The country is being changed in the education consideration of national needs. The major reform in Malaysian Educational System has happened since the late 1980's and early 1990's (Nadson et.al. 2008). Several studies are found on environmental awareness, knowledge and attitude among schools teachers in Malaysia. Lee (1987) in his study reported that, in Malaysian education

system the science teachers in secondary school did not have enough information regarding to integrate of the environmental education subject in school curriculum. For prevent of destruction of environment have a high level of awareness is required (Sham, 1993). Ali (1999) and Osman (2003) reported that, the knowledge of environmental issues among teacher still in a moderate level. Daniel et al (2006), reported in his study, in 1997 the public awareness regarding to environmental issues especially haze problem in Sarawak State were renewed. After this, the local government targeted to measure the air pollution which was produced by many of old vehicles and considered fine for that owner of cars which had more pollution and collected these cars until improve and repair their vehicles. Vehicles spewing excessive smoke were fined and, some vehicles were taken off the road until the problem was rectified. However, he believed that, environmental awareness is in early stage in Malaysia (based on UNESCO, 2003) and the education system was not fully successful to create a responsible citizen regarding to environment. This means, there is some problems and disagreements between citizens related to environment which do not allow them to achieve a proper situation regarding to environment. Another study on Malaysian student's understanding on environment showed that, there was lack of correlation between student's understanding with their willingness on protect of environment (Shamsudin, 2003).

A descriptive study by Fong (2005) in two Selangor schools is in agreement with results reported by Sharifah et al.(2005) the students understanding on environmental issues was in surface level in Malaysia. In general the students' knowledge about environment was high while awareness and sensitivity was low. Also she reported the important resource for students to obtain environmental knowledge was television, radio and newspapers. Overall Lim's study revealed that the students' environmental awareness level was low and the teachers' environmental awareness level was only moderate. In the same study, it was found that environmental management of noise levels and waste management in the schools were not satisfactory. Some of study showed that psychology elements affect the knowledge of students. Aroff and Kasa (1987) believed that, the students are thinking based on the concept of psychology such as the "emotion, observation, learning, as well as the aspect of integrate". The knowledge based on experience and sense will develop the student's opinion about their surroundings. Hence, the role of educators is very important to encourage the behavior of the students that be responsible to do the right and good attitude,

along with the well and healthy environment (Alsagoff, 1992).

4. Environmental Awareness, Knowledge and Attitude in other countries

Palmer (1998) believe that for achieve to suitable level of knowledge, skill and values which are elements to figure of environmental awareness and ethics must be attention to the character of people and student's experiences. Also he stated that, when students achieve a suitable knowledge, understanding, attitude and concept toward environment they can do appropriate action than to environmental issues. Hence, student's awareness, knowledge and attitude will developed due to the achieved skill.

Environmental awareness, knowledge and attitude are major and important component to use as a tool for increasing of opinion of students towards environment (Worcester, 1996). These components can effect on students life whether inside or outside of the school (NAAEE, 1996). However, Ballard and Pandya (1990) have supported the above statements they believed that, the subject of environmental education possibly present as an independent subject in school curriculum. Orr (1992) stated that, the knowledge is not only element in environmental literacy. He referred that knowledge is important to connected to other element and attitude is needed to caring. Thus, attitude and knowledge is necessary for environmental literacy. He believed that, "All education is environmental education". Some researchers were not agreeing with this statement. They believed that, there is a biased in the Orr's statement, they said, "education is a favorable time to act and a chance to receive a sustainable society". Awareness, knowledge and attitude are important components in environmental education. Awareness is a force which motivate the knowledge (Madsen, 1996). It will be happen when the students see the fact of problems regarding to environment. So, the personal commitment to solving of environmental problems will be involve. He stated that for achieved to environmental awareness level, the people should be recognize and confidence regarding to problems in around them, also has a knowledge in scientifically point about environmental problems is compulsory and finally they should be responsible to answer and solve the problems. He believed that, for solving of environmental problems the decision makers and leaders should be have awareness and knowledge about environment. Also he referred, if the leaders have enough information regarding to environment, they can performed a suitable action when they faced with these problems. Another study by Blum (1987) was reviewed five such nation-wide studies on the

knowledge and beliefs of ninth- and tenth-grade students on environmental issues. These studies were conducted in the United States (Bohl, 1976; Perkes, 1973), Australia (Eyers, 1975), England (Richmond, 1976) and Israel (Blum, 1984). The questionnaire was used as a means of collecting information about students' knowledge and attitudes about environmental issues. Since then researchers in several other countries have conducted similar types of environmental inquiry (Aminrad et al, 2010). In the Dominican Republic, Roth and Perez (1989) surveyed the environmental knowledge and attitudes of twelfth-grade students; in the Philippines, Cortes (1991) surveyed the environmental knowledge, comprehension, responsibility, and interest of secondary level students and teachers; and in Singapore, Lau (1992) conducted a pilot survey to find out the extent of environmental knowledge and commitment of school children. These three studies were conducted in less technologically developed countries than the United States, where Manning (1992) conducted a study similar to his predecessors. Lau's (1992) study on environmental knowledge and commitment of school children showed that students' performance in the knowledge section of the survey was very poor. Students fared better in their commitment to environmental protection. Aminrad et.al (2010), in her study state that overall environmental awareness and attitude about environmental issues is moderate and high, respectively. In addition, the majority of the students had adequate awareness and attitude about environmental issues. In conclusion, with increasing student's environmental awareness and attitude, they increase their environmental views.

Finally against this background of growing interest in environmental education, this review paper will show to the importance of environmental education and it's components in Malaysia and it's situation against the world.

5. Challenges of EE in Malaysia

The implementation of EE in Malaysia is an exciting duty. The challenges faced by environmental education researcher or implementers are:

To strong support for EE

-Attention of other organization to environmental education and put a priority in their program regarding to environmental education subject due to the longer period of impacts of environmental education program in society. However, should be exist some principle of precautionary to destroy of environment and principle regarding to protect of environment between organization.

Create a change in people's attitude

-One of major challenge in EE is changing people's attitude to be more environmentally friendly. Environmental education should be start from earlier of age on younger generation due to they are as a future leader are so important.

Reaction of new generation regarding environment

-Next challenge is creating awareness on the importance of the environment which achieved with technology (such as the internet and multimedia presentation) and also through electronic and printed media.

Lack of budget to implement of EE program

-One of big problem for implementer of environmental education program is lack of funding.

Less skill in implement of EE program

-Another challenge is limited skills among implementers, who wants solve the environmental problems. They do not want to share of lessons learned and their knowledge's to overcome problems.

Lack of integration

- The lack of collaboration among implementers is still a challenge but the situation now is much better due to improved communications amongst implementers.

6. Conclusion

Malaysia, in a long term plan of the year 2020 vision, has highlighted the importance of environment education in which appears in school books. The current research has shown a huge gap to an environmentally utopia in implementation of the policy. Throughout the study, this is found that family economy and education is highly effective in environmental understanding of public. Teachers are an area of severe concern where lack of their environmental knowledge's are predominantly influences children as a future generation. The study has suggested further researches that focus on stimulating factors may boost environmental awareness, attitude and knowledge of school teachers as a key factor in environmental education. This may happens by providing face to face and/or remote in-service education programs for teachers to improve their environmental understanding.

Acknowledgements:

Author would like to thank Institute of Environment and Development (LESTARI) at National University of Malaysia (UKM) under the project UKM-GGPM-PLW-147-2010, for their

continuous support toward publication of the manuscript.

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06/04/2012