Abstract

Now-a-days people think of their responsibility to maintain and protect the environment and this is the responsibility of all including the government, private sectors and individuals. The concept of Environmental Citizenship (EC) redefines the relationship of people and nature and reiterates that environmental conservation is everybody’s sole responsibility at all time, based on one’s life choices in minimizing ecological impact on earth. In light of this, this study is designed around the concept of EC that gravitates around the Malaysian primary and secondary school student’s knowledge, attitude, skills and participation in their daily activities and lifestyles that may bring a positive or negative impact on the environment. Both quantitative and qualitative research approaches were used in this study. The quantitative technique took on the form of a survey administration where 2853 Year-5 primary and secondary school students participated. Qualitative data was collected by open-ended response of the students. The findings determine that the current environmental citizenship level of students is low to moderate. There are many areas within EC domain where students’ level of Knowledge, attitude, skills and participation must be increased to reach expected EC level. In a wider perspective, this study hopes to act as leverage towards more emphasis of EE by Ministry of Education (MOE) in the science curriculum. Most importantly, the findings will also enable the stakeholders to make evidence-based decisions on the contributory factors that can improve the current EC among students, be it budget, Environmental Education (EE) materials or even an EE policy statement in the National Education Policy (NEP).

1. Introduction

We are living way beyond the planet’s means by relentlessly reaping the planet’s resources that, by the year 2050, we will need an equivalent of two planets worth of natural resources in order for the population to survive. The world’s population, from mammals to fish had decreased by about a third from 1970 to 2003, due to pollution, forest clearing and over fishing. Malaysia is not without her own complex environmental issues that had also resulted in environmental degradation and has endorsed the education for sustainable life. On hindsight, there is a prescribed solution to these environmental threats. In fact, the solution was initially advocated in 1972 in Stockholm during the United Nations Conference on the Human Environment (Hawthorne & Alabaster 1999). The World recognized the importance of education, including formal education, public awareness and training (UNCED 1992). It believed that unprecedented economic growth and technological progress had benefited many but caused serious
social and environmental consequences, so behavioral change would result in people taking on the responsibility as
the planet’s custodian and at the same time providing them with a more sustainable lifestyle (Hawthorne &
Alabaster 1999). Many countries have made environmental education as part of their curriculum. This study aims to
measure the level of environmental citizenship (EC) among Malaysians within the realm of four pre-determined
components, i.e. knowledge, skills, attitude and participation (Hawthorne & Alabaster 1999; UNESCO-UNEP1978).
Environmental Citizenship (EC) is the active participation of citizens in moving towards sustainability.
Environmental Citizenship (EC) can be viewed as the ultimate outcome of education for sustainability, a process
which is all about changing people’s attitudes, providing access to knowledge and developing skills, which combine
to influence behavior (Hawthorne & Alabaster 1999). It challenges conventional notions of citizenship to reflect the
nature of environmental problems. It is an important part of the shift towards governance (rather than just
government) in environmental policy and politics.

Education is the bridge to sustainability and its role has been lauded as one of the prescribed solutions to
environmental conservation since the World Conference of 1972 in Stockholm (Hawthorne & Alabaster 1999; NIER
2004). For over 30 years, the call for formal education and training has become stronger in changing the society’s
mindset towards the environment and its issues. Hawthorne and Alabaster’s (1999) model, showed that education,
or Environmental Education (EE), is an instrument that contributes to behavioural changes within the society,
which is ultimately translated into environmental citizenship. Other studies (Grodzinska-Jurczak et al. 2006;
Loubser & Swanepoel 2005) showed that EE programmes (especially, biological science education) impacted
positively upon the students’ knowledge, attitude, skills about waste issues, and provided opportunities for students’
relatives and the whole local community to become more environmentally conscious, through the process of inter-
generational communications and influence. But, an analysis made on the Malaysian National Education Policy
(NEP) revealed that the 23 policy statements made no reference to the environment (Nadeson & Nor Shidawati
2005). In ‘The Ninth Malaysia Plan 2006-2010’ it is said that efforts to enhance environmental awareness were
further intensified at school, community and national levels (Ninth Malaysia Plan 2006-2010). However, Nadeson
and Nor Shidawati (2005) recommend that, EE within the National Education Policy (NEP) (National Education
Policy 2004) needs to be reassessed and a comprehensive EE Policy for Malaysians should be drawn up. It is hoped
that an inclusion of an EE policy will further strengthen the EE practices in, as well as outside the classroom
throughout all levels of society, in turn contributing to an improved EC level among Malaysians.

Many survey studies have been conducted on environmental awareness and the lifestyles. The results show,
Malaysians have low to moderate level of understandings of environmental issues. They are just experiencing the
problems of environmental pollution, sewage disposal in rivers, open burning, haze problem but their knowledge
and awareness are not up to the level to think about adverse long time effect of this pollution on national economics
and their life. Hanunah’s (2004) study reveals that the level of knowledge of EE among the teacher trainees is
relatively high. Further, there is a strong relationship between the environmental attitudes and awareness in school,
with the teaching and learning process (Tan 2002) and mass media also can influence positively teaching and
learning activities. Pauziah (2004) have embarked on a study on EE at primary school and she claims that EE has
never gravitated in addressing the inter-relationships of components such as knowledge, attitude, skills and
participation, which are pre-requisites of EC (Hawthorne & Alabaster 1999). Hence, this study is conducted in the
hope of identifying these gaps and holistically addressing these components.

2. Methodology

In the context of the present research environmental knowledge refers to the expression of a variety of experience and
knowledge in issues related to the environment, and a basic understanding of what is required to create and maintain a
sustainable environment among individuals, groups or organizations. Consequently, environmental attitudes refer to
expressions of a set of values and feelings of concern for the environment, and motivation for actively participating in
environmental improvement and protection; environmental skills refer to an explanation of abilities or the skills acquired
for identifying, anticipating, preventing and solving environmental problems and finally environmental participation refers
to illustrations of embedded motivation and actions to be actively involved at all levels in working towards creating a
sustainable environment, among individuals, groups or organisations (UNESCO-UNEP 1978).

Both quantitative and qualitative techniques of data collection were used in this study. The quantitative technique
took on the form of a survey administration. The types of questions featured throughout Section A and B were
multiple choice items with a Likert Scale answer, as well as questions which required respondents to check on specific answers or tick YES or NO. Section C housed two open-ended questions. All the questions are on Malaysian local context, but they are similar to the questions of other international studies. A pilot study was conducted on the survey items for the purpose of checking whether the respondents would be able to understand the questions, especially the terminology used. The content and construct validity of the survey was checked by a rigorous process of improvements through the series of meetings held together with the panel of experts. 9 primary and 38 secondary school students participated in the pilot study which resulted in some minor changes, such as simplifying the sentences for better understanding.

**Students of Primary School:** There were 1314 primary school pupil respondents. The urban respondents represented 52.4% of the sample whereas the suburban respondents represented 47.6%. Most of them were Malays (82.8%), with Chinese, 9.1%; Indian, 2.6%; and other races, 5.5%.

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**Students of Secondary schools:** There were 1529 secondary school pupil respondents. The urban and suburban represented 50% of the sample. Most of them are Malays (62.3%) followed by Chinese (20.7%), Indians (8.8%) and other races (8.2%).

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### 3. Results and Analysis

**Knowledge Levels among Student Respondents:**

The overall knowledge levels for the reasons for environmental problems can be considered low for primary students group 29.1% and the secondary students showed level 40.9%. Knowledge about fauna & biodiversity the primary and secondary students showed the level at 19.6% and 21%. The students’ level of knowledge about EIA is 58.9% and 68.5% for primary and secondary students. Both primary and secondary students showed a level of 25% regarding ‘Knowledge about International Treaties’.

**Attitude Levels among the Student Respondents:**

The level is 54.2% for primary and 58.1% for secondary students. The attitude level towards coastal environment is between (21%-31.1%). The level of ‘Attitude towards water Pollution’ is 65.5% for primary and 89.0% for secondary students. The students’ attitude level towards environmental initiatives is 90.9% and secondary students is 96.7%. Related to non-biodegradable products only 36.5% of the primary school students, and 34.3% of the secondary school students are concerned.

**Skills Levels among the Student Respondents:**

The majority of the student respondents; primary students 79.5% and secondary students 90.6% have negative perceptions about how the haze problem was handled. Related to the clearing of protected land the students (primary 45.1%, secondary 48.2%) indicated a lower negative view towards the authorities. Regard to educational activities in acquiring skills only 14.3% of the primary and 14.3% of the secondary school student respondents feel that they can acquire environmental skills through educational activities.

**Participation Levels among the Student Groups:**

The self-perceived participation level for the students respondents is 59.6% for primary school students and 59.6% for secondary school students. Actual participation level in everyday environment-friendly activities is about the same as the self perceived level, which is between 48.7%-51.1%. Regard to level of personal time spent on environment related participation and
Efforts, the primary students’ level is 43.4% and the secondary students’ level is 36.1%, the figures also show a low to moderate level of participation. Efforts in carrying out activities in schools/institutions, the students’ level of views range from 83.9%-91.5% for primary and secondary students.

**Qualitative Results:**

The qualitative findings revealed several important intangible aspects related to environmental citizenship, including the need for role models in Malaysian society, the need for a sense of ownership among students towards environment and the lack of commitment to make more efforts in everyday conservation that goes beyond convenience. Process of Knowledge Acquisition on environmental Conservation Acquisition of knowledge relevant to environmental citizenship was found to have mainly been acquired in two ways, namely influence of one’s surroundings, explicitly or implicitly. The students write that polluted water can affect their life in many ways. It can obviously create health problem. But in the long run it can change the green land to barren land, can also affect bio-diversity and destroy natural fishing areas. Many students give emphasis on more school activities to learn about environment. There should be more content in books for environmental issues. They also have pointed to more environmental programmes in media.

However, they are very much conscious about not to harm any living animal, may be birds or little animals. On this issue they suggest positive attitude can grow among them by discussion and collective school oriented awareness programme. They are also aware of more reading about environment. They think newspapers can help them. But they argue only some issues of biodiversity and pollution is naturally discussed in newspapers. There should be interesting features on environmental problem and school-programme on environment should be highlighted.

4. Discussions

The overall knowledge level of the school going students for reasons of certain environmental issues (35%), knowledge about fauna and biodiversity (20.3%) and knowledge about international treaties (25%). The students (20.15%) think that they get environmental information mainly from television and newspapers. It can be assumed that the coastal environment is not familiar to most student-respondents except for those living in such environments, thus the low attitude levels. It is hoped that improved attention given to EE will call for more budget allocations for EE materials development as well as training for pre-service and in-service educators in schools as well as teacher training institutes. Ultimately, it is hoped that the findings will bring about change in the NEP, where an inclusion of an EE policy statement will be one of them.

5. Conclusion

The results of the study show low level of knowledge and attitude. So, more emphasis should be given to Environmental Education inside as well as outside the classroom. It is hoped that this study will be the pathway for various structured and coordinated strategies from institutional framework development, teachers’ training to materials development. In addition, this study hopes to be a catalyst to a collection of EE and EC related studies, which will translate into further improvement on the EE practices at the international and national platform.

References


New Straits Times. 2007. 31 January.


The Star. 2007. 1 May.

Turtles have left our shores, despite help. 2006. New Straits Times, 14 October: NT17.


UNESCO-UNEP. 2006. Teaching and Learning for a Sustainable Future, UNESCO. Paris. [This is a CD produced in conjunction with Griffith University and UNESCO/UNEP]