

CHAPTER 6

CONCLUSIONS

6.1. Main Findings

Melaka secondary school students showed moderate level of environmental awareness (7.55). Student's environmental awareness was significantly influenced by locations of schools ($p=0.018$) and forms ($p<0.001$), with higher environmental awareness among urban school and form 4 students. Gender as the main effect showed no significant difference on students' awareness, although there were significant interaction effect between locations of schools with gender ($p=0.009$) and between forms with gender ($p=0.025$). Urban female students showed higher environmental awareness as compared to urban male students while rural male students had higher environmental awareness as compared to rural female students. Form 4 female and male students showed higher environmental awareness compared to Form 1 students of both gender.

Despite having moderate level of environmental awareness on tropical rainforest issues, the results also showed that Melaka secondary school students have low level of environmental knowledge (6.90). Students' environmental knowledge was significantly influenced by forms ($p<0.01$), with higher environmental knowledge among form 4 students as compared to form 1 students. The main effect and interaction effects between students' knowledge with location of school and gender showed no significant difference.

However, students showed a moderately positive attitude (46.18 out of 80) towards the environment. However, there were fewer students who were willing to sacrifice the comfort of life for the good of the environment.

The test results on students' attitude showed the main effects of both forms ($p=0.001$) and gender ($p=0.0001$) were also highly significant, with more positive attitude shown by the form 1 students as compared to form 4 students. Similarly, female students also showed more positive attitude towards tropical rainforest issues as compared to male students. Interaction effect between form and gender was also significantly different ($p<0.009$), with female students of both forms showing more positive attitude.

More than 50% of the Melaka secondary school students either 'seldom' or 'never' read environmental related materials or watch environmental programmes. The results revealed that rural students read or watch more environmental programmes compared to urban students. Between forms, form 4 students in both urban and rural districts were more interested in reading or watching environmental programmes. Between gender, urban male students from both forms have higher percentage of students reading or watching environmental programme while in the rural district, female students seems to be reading or watching environmental programme more often compared to rural male students.

In terms of students' participation in environmental activities, more than 60% of the Melaka secondary school students sampled 'never' or 'seldom' participated in environmental activities. However, students from the rural district

seemed to participate in these activities more often compared to urban district students.

Some misconceptions were also observed in this study. Among the misconceptions observed were the celebration on World Forestry Day, the main cause of deforestation in Malaysia and the plant medicinal and their uses.

6.2. Suggestions

The findings from this study suggest the following recommendations to enhance environmental education in schools.

- i. There is a need to review the Environmental Education Policy in Malaysia. With the review and strengthening of the Environmental Education Policy, an acceptable and common understanding on the environmental education could be defined. With this, the Malaysian goal on environmental education would establish clear direction for the development of environmental education in schools. Following this, environmental education should be made compulsory in schools, preferably as a subject in school starting at primary school level.
- ii. Teachers or environmental educators should be given proper training and exposure. Currently, teacher trainees are required to study environmental education in the teachers' training college. Although teachers are well informed on the theoretical aspects, they find difficulty in adapting these theories into interesting practical sessions. This frequently dampened

teachers enthusiasm in teaching or organizing environmental programmes or activities which would enhance the teaching methodology.

- iii. Training of trainers among the teachers are essential so that more teachers will be trained and the multiply effect will be effective. However, to achieve effective human development and training, it will be more effective if repeated training with larger representation from each school or state are alternated with trainees' be given opportunities to gradually implement the new competence at state or school level.
- iv. Information on environmental issues in the school textbooks must be updated and added on from time to time. Usually, information, and examples based on Malaysian scenario in textbooks are limited and diluted. Therefore, it would be recommendable if the Ministry of Education spells the syllabus of the textbooks and open publishing to more private publishers. With the participation of more than one private publisher, there will be greater competition to produce quality textbooks. Then, the Ministry of Education may take the lead in determining the best publish material as textbook. Hence, the need for additional revision book is unnecessary and this will make learning more interesting and not burdensome.
- v. When environmental topics such as the tropical rainforest issues are discussed or taught, it is essential to emphasize and study in depth about our own tropical rainforest. Local examples based on Malaysian scenario, examples and experienced should be highlighted. Learning issues or

matters that are closest and within us make education more interesting and meaningful, as we are able to identify the situation.

- vi. Teachers who are keen in leading clubs such as Nature Club, Recreation Club, Mathematics and Science Club should be given the opportunity to lead the clubs for longer periods to ensure that the development and efforts in instilling environmental awareness, knowledge and positive attitude would be consistent and effective.
- vii. Students should be encouraged to expose themselves with more environmental related hands-on activities. For example, out-door activities such as conducting an on-site river survey, or learning of the tropical rainforest by visiting the forest should be included in teachers' lesson plans as this activities could further enhance the understanding of the lessons taught in school. Just as the saying goes

When I hear, I forget

When I see, I remember

When I do, I understand

- viii. The role of mass media should be emphasized as they play an important role in promoting environmental awareness, knowledge and attitude. By highlighting an environmental issue, particularly of students' effort in environmental conservation, it would be a good morale and example to other students, which would generate interest among more of the younger generation. This is important as media massa is an effective tool in

promoting environmental awareness and conservation as shown in most studies both local and in other countries.

6.3. Recommendations for Future Research

The findings of this study should not stop here. It is important to carry out further research on this subject, which

- i. Involves more variables such as the respondents' education grades, school environment, respondents' socio-economic background, parental influence, religion, state and mass media influence
- ii. Includes representation of students from the various states in Malaysia
- iii. Involves teachers themselves, so as to assess the effectiveness of the teaching methods and environmental education in schools
- iv. Involves the observation and interview methodology in addition to the questionnaire survey sampling so that the research is better covered
- v. To conduct research and evaluate the implementation of environmental education in the current curriculum and co-curriculum activities to determine whether the education system provides sufficient information and effective teaching and learning strategies