STUDENT'S REFLECTION ON ENVIRONMENTAL CONSERVATION: THE LEVEL OF KNOWLEDGE, ATTITUDE, AND BEHAVIOR

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Abstract
The purpose of this paper is to identify the reflection of primary school students' in term of their environmental conservation awareness based on their knowledge, attitude, and behavior. The survey method was used in data collection and the questionnaire was distributed to 235 students from 25 different school under UTHM's Knowledge Transfer Program in Kluang District. The results obtained moderate-average level of environmental awareness for each construct (i.e. knowledge, attitude, behaviour). The analysis suggest level of reflection has significant effect on gender and race differences for certain construct, however, it is positive correlation between the level of environmental conservation's reflection with demographics profile. This study offers new insights into the impact of education on environmental protection, the need for environmental education to improve conservation awareness.

Key words: Environmental, Conservation, Knowledge, Attitude, Behaviour.

INTRODUCTION

Environmental conservation is generally referring as the human's practice to save the environment from being destroyed such as species extinction (i.e. floral or fauna), loss of ecosystem due to the natural disaster, pollution and human activities (Lorimer, 2018). In many developing countries, including Malaysia requires an environmental sacrifice that will indirectly result in adverse effects resulting from plant destruction, existing infrastructure, and impact on the community. Environmental problems such as global warming, natural disaster, depletion of ozone layers have been one of the main concern of both government and non-government related agencies worldwide (Ali et al., 2017). Environmental education across curriculum needs to be adapted more effectively to ensure that awareness at the school level, mainly primary school can be applied and practiced. Hence, the perception of environmental conservation through education is the most influential agent in order to enhance sustainable development awareness (Hanifah et al., 2015).

As education become of the way in improving the awareness, its need to be start in early stage of education system to ensure that knowledge, skills, behavior, and proper actions in addressing ecological issues (Hanifah et al., 2015).Teacher and students play an important role to ensure the current environment practices in schools (i.e. teaching and learning approach, co-curricular activities, awareness program) able to improve awareness of conservation and management sustainable environment (Aarnio-Linnanvuori, 2019). Students should be involved directly in the effort of environmental sustainability as this group also received the impact of the energy crisis, climate change and environmental (Boylan, 2017, Zyadin et al., 2012). Practice knowledge preservation of early age groups is essential affect their future practice. Through environmental education approach, it is capable of improving knowledge and awareness of the public against environmental issues for future generations as emphasized through the concept of development sustainable (Hanifah et al., 2015). Therefore, school is better place to develop new forms of behavior, shaping attitude, skills, and commitments needed to preserve and protect the environment has to begin at an early age.

Impartiality puts awareness of deep green practice among school children, especially at school is the starting point for green practice implementation (Mahat et al., 2014). Based on some of the need to identify whether awareness and practice of preserving the environment apply among primary school children, this study is conducted through survey of primary school students in one of the districts in Johor. The study focused on basic awareness on environmental conservation in perception of knowledge, attitude and behavior. This study embarks on the following objectives and expectation; to identify the level of environmental conservation awareness among students from the self-perspective of knowledge, attitude, and behavior, to determine the differences of environmental conservation based on races and gender and to identify the relationship the conservation factors in order to increase students' environmental awareness.

LITERATURE REVIEW
1) Environmental Education
In early 1960s, environmental education (EE) was started focused on the instructional aspect of environmental movement, such as pollution, population growth, loss of ecosystem, and degradation. Early definitions were framed as intended to produce people who are knowledgeable about the biophysical environment and its related issues, who are conscious of how to solve these issues and who are inspired to work towards their solution (Gough and Whitehouse, 2018). EE can be formally taught in schools, classroom, colleges and universities or can take place in informal learning context through NGOs, community society, conferences and seminars. Teaching and learning process in EE enable students to self-explore the environmental issues, develop critical thinking and problem solving skills, and suggest potential solution of the environmental problems.

The important of EE is related to curriculum objectives such as awareness, knowledge, attitude, skills and participation have been continuing themes in the development of the field of environmental education. It has been defined and reviewed that environmental education concerned in all factors mentioned. Wee et al. (2017) recommended that environmental education subject necessarily might be considered as an independent syllabus in Malaysian education system. In raising the consciousness of keeping nature around in school, an effective way is with practicing green practices among citizen's school. Furthermore, the awareness of the conservation and management environment is not solely

depending on the academic's program or teacher effort from school. have suggest the awareness is individual.

2) Pro-Environmental Behaviour Model

The Model of Pro-Environmental Behavior states that with the supply of existing knowledge will increase student awareness and concern (attitude). Hence, it will give birth to people who have a more positive attitude towards the environment. Figure 1 shows the Pro-Environmental Behavior Model that explains that an individual will use existing experience to take further action. The model explained the relationship between knowledge, awareness, attitude and behavior towards the

environment is linear. With the current education system and the EE being applied, students will be able to gain that knowledge even if it is not entirely due to other factors that influence it. Environmental awareness is also influenced by cognitive and affective components that are a combination of two major components (Kollmuss and Agyeman, 2002). Cognitive components are usually based on the knowledge that is formed in the human mind and motivates people to act on knowledge. Affective components include emotional involvement or feelings towards the environment as an important factor in shaping and shaping the beliefs, values and attitudes of the environment.

Figure 1: Model of pro-environmental behaviour (Kollmuss & Agyeman, 2002).

MATERIALS AND METHODS

A qualitative research approach was conducted in this study. There are 25 primary school at Kluang district, which is under UTHM's knowledge transfer program were selected. A total of 236 years six students were took part in the survey. In order to collect data, a questionnaire was distributed among the students. This questionnaire consists of three main part based on pro-environmental behavior model; knowledge, attitude and behavior in students' perception towards environmental awareness. It was included students' demography and 30 closed-ended questions covering the perception of various issues form primary schools' students' perspectives. The instruments developed using a four-point Likert scale; ranging from 1(strongly disagree) – 4 (strongly agree) was used. Table 1 shows the example of item in each section. The statistical analysis such as descriptive, mean, differences and correlation were conducted to analyze the collected data.

Table 1: Instruments structure and example of item

Section	Items
A : Demography	Gender Race
B : Knowledge	10 items Example: Open burning will cause haze
C : Attitude	10 items Example: I am sharing the environment information with my friend.
D : Behavior	10 items I am working to reduce the use of electricity to protect the environment.

Table 2: Level of Environmental Conservation

	Mean	Std. Deviation
Knowledge	3.371	0.427
Attitude	3.661	0.361
Behaviour	3.028	0.583

RESULTS AND DISCUSSIONS

1) Demography analysis

This study has managed to gather 236 data from students. The information in Figure 2 indicates the male comprise 31.8% (n = 75) and female comprised 68.2% (n = 161) from the participant in this study. The gender difference was considered is this study as the social perspective is directly affected by the impact of gender and, in turn, influences the process of social development (Blenkinsop et al., 2018).

Meanwhile, Figure 2 represent the race information, where Malay is 63.1%, Chinese is 19.5%, Indian is 14.8% and others race is 2.5%.
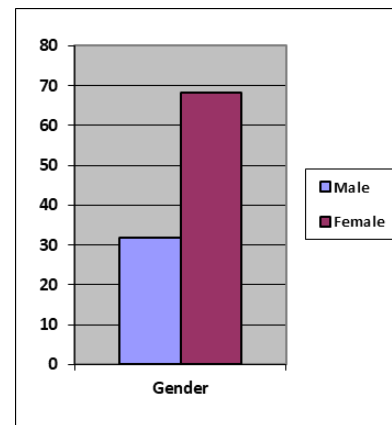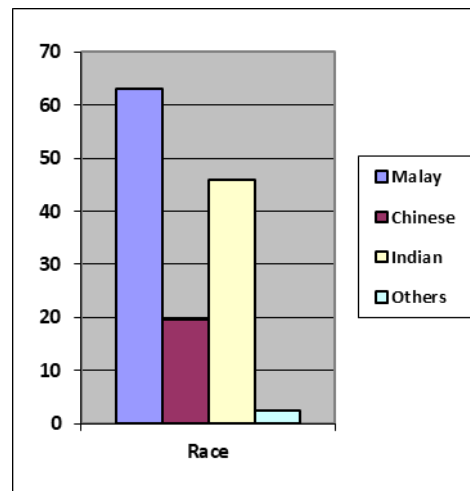

Figure 2: Gender information

Figure 3: Race information

2) Level of Environmental Conservation Awareness

Table 1 presented the grand means and the standard deviation for each contrast (e.g. knowledge, attitude, and behaviour) in this study. First, in the knowledge construct, results indicate the level of knowledge with mean 3.37, which is a high level of knowledge perception. Majority of respondents were strongly

agreed (80.9%) with item number 10 that particularly aware on buying items made from recycled materials can help protect the environment. This is due to the significant positive relationship was found between both the intention to purchase and the purchase of recycled products among students (Sun et al., 2018). Besides, respondents also aware the waste from factories can cause of water pollution (79.7%). The low mean of students' response in item 5 stated the use of soap or detergent would not cause of water pollution.

In the attitude construct, the average mean obtained is 3.66, and majority of respondents obtained the high mean in all items ranging from 73.7%- 80.5%. For example, item number 11, 80.5% students were strongly agreed that they will support the recycle program. This is due to the importance of proper design of recycle bin to guide and changing waste management practices for public (Keramitsoglou and Tsagarakis, 2018). Furthermore, item number 12 obtained 73.7% of respondent's agreement, which is they will ready to support the environmental issues at school. In this case, schools were suggested to apply some practical environmental program such as introduce the reduce waste, reuse resources and recycle (3Rs) program or organise tree planting program and explained the important tree to the environment (Goldman et al., 2018).

Moreover, in the context of student's behaviour findings show that majority of respondents have moderate level responses ranging from 35.2% to 49.6%. For example, item number 21, "I use both sides of the paper when I doing exercises" (49.6% is strongly agreed) and item number 26, "I will remind my parent to bring shopping bag while shop" (35.2% is strongly

agreed). This is matter due to the low to average awareness among the consumer's participation and effectiveness of the no plastic bag day programs (Asmuni et al., 2018).

Level of Awareness Differences between Gender and Race

Table 3 presented the group statistics for each construct based on gender difference. Meanwhile, Table 4 indicate an independent T-test results on the level of awareness based on the demographics profile. The findings show there was significant difference in the scores of knowledge for male's students (M=3.376, SD=0.361) and female's students (M=3.368, SD=.455) conditions t (0.118), p=0.041. This study has reject the null of Levene's test and conclude that the variance male's reflection level is significantly different female student in knowledge. However, in the context of the attitude, there is no significant different between gender with the reflection level, where male' student obtained M = 3.636, SD= 0.368) and female (M = 3.672, SD = 0.368) condition t(-0.671), p = 0.423. It is similar to the behaviour, there is no significant between gender where male's student (M= 2.772, SD= 0.526) and female (M= 3.146, SD= 0.572). Thus, the null hypothesis of both attitude and behaviour are accepted.

Table 3: Group Statistic

	Gender	Mean	Std. Deviation
Knowledge	Male	3.376	0.361
	Female	3.368	0.455
Attitude	Male	3.638	0.368
	Female	3.672	0.359

Table 4: Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
KNOWLEDGE	Equal variances assumed	4.207	0.041	0.11	234	0.906	.00706	0.059	-0.11	0.12
	Equal variances not assumed			0.13	178.642	0.898	.00706	0.055	-.101	0.12
ATTITUDE	Equal variances assumed	0.644	0.423	-0.67	234	0.503	-.03400	0.050	-0.133	0.07
	Equal variances not assumed			-0.66	141.388	0.507	-.03400	0.051	-0.135	0.07
BEHAVIOUR	Equal variances assumed	1.846	0.176	-4.78	234	0.000	-.37325	0.078	-.0527	-0.22
	Equal variances not assumed			-4.92	155.89	0.000	-.37325	0.075	-.0522	-0.22

Table 5 presents the analysis of comparison responses between races. A one-way ANOVA was conducted to compare the responses between races towards environmental conservation. There was a significant difference at p = 0.05 for

the three level of perceptions; attitude [F (3,232) =6.074, p=0.001] and behavior [F (3,232) = 4. 936, p=0.002). However, there was no significant difference in knowledge perceptions.

Table 5: Significant differences environmental conservation according to race

		Sum of Squares	df	Mean Square	F	Sig.
Knowledge	Between Groups	1.363	3	0.454	2.541	0.057
	Within Groups	41.501	232	0.179		
	Total	42.864	235			
Attitude	Between Groups	2.241	3	.0747	6.074	0.001
	Within Groups	28.536	232	0.123		
	Total	30.777	235			
Behaviour	Between Groups	4.804	3	1.601	4.936	0.002
	Within Groups	75.271	232	0.324		
	Total	80.075	235			

Relationship of Environmental Conservation Factors

Table 6 displays the correlation analysis for the knowledge, attitude and behaviour. A Pearson correlation coefficient was computed to assess the relationship between environmental conservation awareness factors. There was positive

correlation between knowledge and attitude, r = 0.407, n =236, p = 0.000, knowledge and behavior, r= 0.304, n =236, p= 0.0000, behavior and attitude, r= 0.438, n =236, p= 0.000. The result is aligned with pro-environmental behavior model which integrate three main factors as preliminary model in

initial environmental behavior. Several studies focus on these three factors to predict people's pro-environmental behavior as mentioned in Leung and Rosenthal (2019) in their study conducted to identify the perceived of behavioral control, attitude in recycling and recycling intention. The expanding the concept of sustainability used in organizational. By integrating the factors to identify students' perception, this research may develop first concept of fundamental in environmental education for primary school based on the positive findings gather in this research. Kollmuss and Agyeman (2002) mentioned the most frequently factors mentioned influence people's environmental sensitivity are childhood experiences in nature, experiences of pro-environmental destruction, pro-environmental values held by family, role models (friends or teachers) and education.

Table 6: Correlation analysis for environmental conservation factors

		Knowledge	Attitude	Behaviour
Knowledge	Pearson Correlation	1	0.407**	0.304**
	Sig. (2-tailed)		0.000	0.000
	N	236	236	236
Attitude	Pearson Correlation	.407**	1	0.438**
	Sig. (2-tailed)	0.000		0.000
	N	236	236	236
Behaviour	Pearson Correlation	0.304**	0.438**	1
	Sig. (2-tailed)	0.000	0.000	
	N	236	236	236
**. Correlation is significant at the 0.01 level (2-tailed).				

CONCLUSION
In summary, this study was conducted to determine the level of the student's reflection toward environmental conservation from three different contexts (e.g. knowledge, behaviour and attitude). Besides, this study was comparing mean between two dependent variables. A case study of year six students was conducted to determine their level of environmental conservation and awareness during the teaching and learning activities. The results of the case study have indicated the important of conservation and environmental program in an early stage of education system. Given that, we do realize the limitation of a case study which do not able to generalize to the larger population. For future works, we wish to explore the possible reflection level towards different environmental program/activities.

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