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Transforming Sustainability Development Education in Malaysian Schools through Greening Activities

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Abstract

This article aims to evaluate the practice of sustainability among Malaysian Secondary Schools involved in the Sustainable Schools Program Environmental Award (SLAAS). The research attempts to identify the SLAAS effects on teachers' and students' behaviors after direct involvement with the activities of the program. The cluster sampling technique was used in selecting the school samples and the respondents were then also selected through simple random sampling among upper secondary pupils. A questionnaire survey was administered for 247 teachers and 447 pupils, to evaluate the after effects of the SLAAS. Document analysis was employed to identify the greening activities that were carried out in the schools involved. The results showed that the schools' involvement in SLAAS had some transformative effect on the schools especially on greening activities and also on sustainable behavior within the school compound. Based on the correlation analysis, it showed that there was a significant correlation between the knowledge about SLAAS program and the behavior of the teachers

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and similarly, it was also found that the significant correlation between the knowledge of the SLAAS and the behavior of the pupils post SLAAS. Hence SLAAS must be continuously deployed in school outdoor activities on greening efforts to educate pupils to sustain environmental quality. It is suggested that teachers should play the role model of sustainability, not only for the pupils but also for the public.

Keywords: education for sustainable development, program of sustainable schools, greening activities, behavioral changes, sustainable activities

Introduction

Malaysia is one of the leading nations in the world in practicing sustainable development (Ministry of Natural Resources and Environment Malaysia, 2010). Even though environmental sustainability is not openly announced in Malaysia, the word 'sustainable development' has been used officially since the Third Malaysia Plan (1976-1980) as explained in chapter 12-Development and Environment (Malaysia, 1976). The time frame of using this concept in Malaysia coincides with its introduction at the Stockholm Conference in 1972. Since the introduction of the sustainable development concept, attention to the education component was only surfaced during the Rio de Janeiro Earth Summit in 1992 some 20 years later, whereby at the end of the summit, Agenda 21 was formulated. In Agenda 21, the education aspects were further discussed in chapter 36 i.e., (i) to improve basic education, (ii) on the adaptation of current education towards sustainable development, (iii) to improve public understanding and awareness, and (iv) on training for leaders in environmental management (United Nation 1992). Furthermore, the importance of education did not stop at this conference but was picked up by the United Nations through Resolution 57/254 in December 2002, in which it suggested to UNESCO to include in its program, the educational decade for Sustainable Development 2005-2014 (DefSD) (UNESCO, 2010). Education encourage changes in behavior to shape a more sustainable future in terms of, the economy, environmental integrity and a fair society for present and future generations (UNESCO, 2002). However, the implementation process of education for sustainable development depends on a country's needs and the needs of the local people (UNESCO, 2007).

Since then, the educational approach for Education for Sustainable Development (ESD) has become one of the practical methods in conveying information to pupils at school level to create environmental awareness. ESD is defined as an innovation in educational reform that has evolved from the better-known Environmental Education (EE) movement. It is hoped that the new generation will appreciate the need to preserve environmental resources for the present and future generations. In fact, many researchers such as Hopkins & McKeown (2002); Joshi (2009); Lampa, Greculescu & Todorescu (2013); Moroye (2005); Sterling (2003); Scoullos & Malotidi (2004) suggested that environmental related problems should be resolved through education. This is because education is important in transforming the community towards sustainable development (Doost, Sanusi, Fariddudin, Jegatesan, 2011; Fielding & Head 2012; Foo 2013; Hazura, 2009).

In building human civilization towards sustainable development, an environmental-loving attitude will help address environmental problems. Consequently, the educational factors whether formal, non-formal or informal are important and ligned

with the demands of religious and cultural values which are practiced by the Malaysian society.

Problem Statement

An increase in the understanding and an awareness of the environment are two important elements in building the national capacity towards sustainable development (Dimitrova, 2014). ESD is capable of generating changes in the mentality of the community and in improving the quality of life (Firth & Smith, 2013; Lampa, Greculescu & Todorescu, 2013). Therefore, the main drivers of the ESD are teachers/educators, who are seen as effective change agents (Gough, 2005; Liu, 2009). ESD is one of the best methods to channel information at the school level towards environmental awareness, hence the present generation will appreciate more about environment preservation for future generations. Through education, changes in values and attitudes, skills and behaviors can be achieved, particularly through widespread and deep understanding of the issues on sustainable development (Bernardino, 2000). In actual fact, teachers at preschools should start introducing the concept of sustainability to children (Aini & Laily, 2010). The full commitment from all levels of society is essential because ESD is a disciplined learning strategy that emphasizes on value, thinking, methodology and structured policy making decision in line with the changes of the world (Lampa et al., 2013).

Since 1983, EE has been introduced at the school level in Malaysia through a structured curriculum. Besides, there are various environmental awareness programs that have been conducted by various ministries/departments, and Non-Governmental Organizations (NGOs) that are directly involved with the environment such as the Malaysian Environmental NGOs (MENGOs). Based on past studies school communities have low levels of environmental awareness and commitment (Aini, Laily & Sharifah, 2009; Arba'at, Kamsiah & Susan, 2009; Fatimah, Norliza & Salhayatin, 2011; Mohammad Zohir, 2009; Nor Aznan, Lilia & Arbaat, 2010). The studies also concluded that the country's current education system does not show any positive encouragement towards EE in the existing curriculum. For instance, the geography subject, whichis closely related with environmental issues, is not a core subject for the upper secondary level anymore. Unfortunately, upper secondary students have been known to develop concrete behaviora at this stage of their affective development (Ministry of Education, 1998). Research has found that EEas proposed by the Malaysian Ministry of Education, has not been fully implemented through the curriculum (Mohmadisa & Mohamad Suhaily Yusri, 2005; Mohammad Zohir & Sharifah Norhaidah, 2005)).

The present educational system needs to be reoriented, so that it is more responsive to the challenges of ESD. The challenge is on how all related parties can help to change the present educational system towards more conducive learning and teaching methods and how teachers can help students develop skill, value and knowledge in sustainability (Hopkins & McKeown, 2002; UNESCO, 2007). The Department of Environment (DoE), with the technical help of the Institute for Environment and Development (LESTARI), Universiti Kebangsaan Malaysia have used the sustainable school concept to develop, introduce and implement ESD at the school level under the Ministry of

Education, Malaysia. Sustainable Schools Program Environmental Award (SLAAS) is a 'whole approach' concept in the field of management, curriculum, co-curriculum and greening efforts in order to achieve two main objectives. These are, to inculcate good environmental values among school community and, to increase the awareness among school pupils in relation to the importance of conservation and preservation of the environment. During the implementation phase, there are parts of fieldwork exercises and observations, based on place, urban and non-urban schools, to show students that the geographical factors will influence the sustainability of the school. In fact, Doots et al. (2011) agreed that ESD needs to be developed and is instrumental to sustainability in schools.

The changes in behavior among students in sustainable practices for the present and future generation should take place now. So, the aim of this paper is to discuss the efforts of school administration towards ESD through various school activities. The main effect is not only about the schools' 'greening effort' but is also on the knowledge contribution and changes in behavior towards sustainability.

Two main objectives of this study are

i. to identify the level of the knowledge about SLAAS program and the behavior of students and teachers for sustainability.

ii. to determine the relationship between knowledge about SLAAS program with the behavior of students and teachers for sustainability.

Sustainable Development in Malaysia

In Malaysia, the government launched the National Environmental Policy in order to mitigate the effects of development and problems with air pollution (The Malaysia Ministry of Science, Technology and Environment, 2002). The three sustainable development components i.e. economic development, social development and protection of the environment are governed by this policy. Hence, the policy aims to continue the economic, social and cultural progresses, as well as to increase the life quality of Malaysians through maintaining environmental well-being and sustainable development. There are eight principles to monitor this policy, balancing the critical elements of economic development and preservation of the environment.

i. Environmental control – environmental respect and concern through standards of moral and the highest ethic.
ii. Conservation of environmental diversity – to conserve the natural ecosystem and to ensure that biodiversity remains intact.
iii. Continuous increase in the quality of the environment – to ensure the continuous increase in economic productivity and the environmental quality while pursuing the economic growth objectives and human development.
iv. Sustainable consumption of natural resources – to manage the use of natural resources for maintaining the resources balance and environmental quality.
v. Integrated decision making – to integrate environmental dimension into planning and the implementation of policy and its objective.
vi. The role of the private sector – to enhance the role of the private sector in the protection and management of the environment.

vii. Commitment and responsibility – to ensure that all decision makers in the public and private sectors, resource users, NGOs and the public have high commitment towards the protection of and responsibility on the environment while developing, planning and implementing their activities.
viii. Active involvement in the international community-staying actively and significantly involve in regional and global efforts towards the conservation and preservation of environment.

The effort of creating awareness and education in this policy are clearly shown by the distribution of information and exercises that are parallel with the proposal of Agenda 21. These roles are not only for the public but also for private agencies, as well as NGOs. Meanwhile, agencies in mass mediawere also actively encouraged to educate community on the issue of environmental awareness.

In the 9th Malaysia Plan (2006 – 2010), one aspect of sustainable environmental issues is the practice of natural environmental management, which involved the soil, water, forest, power and marine sources. Authorized organisations and NGOs are responsible to provide information and promote this specific objective of the 9th Malaysia Plan. In the year 2002, the MENGOs was formed with the involvement of 18 environmental NGOs. The objective of the organization was to incorporate andintegrate to handle the environmental issues and natural sources in order to increase awareness among members of the organization. Besides, the aim was also to put forward input, comments and positive feedback to the government. The private sector was encouraged to organize environmental awareness program among industries and companies in relation to topics on raising the level of protection for public as well as on environmental safety. The Environmental awards – Sustainable Urban Program was formed in 2005 in an attempt to encourage local authorities to use and adopt the environmental friendly program.

In the 10th Malaysia Plan (2011 – 2015) the direction of sustainable development in Malaysia is a continuity of the previous environmental issues, especially on the matter of preservation of public interest and concern about the environment. At the same time, it is hoped that it will create economic benefits to Malaysia. The sustainable production practice, especially on economic growth, is still the basic principle that Malaysia adopted, so that the environment will not deteriorate. The government was also encouraging the integrated effort by all sectors towards the national sustainability. Among the government encouragements included attractinginvestors in renewable energy production, energy savings for productive users, improving solid waste management, and preserving forest areas and wild life, adopting clean air action plan with the reduction of carbon gases in order to improve air quality. These strategies will guarantee the sustainable and manageable use of resources. The emphasis was given to all people to have responsibilities on the issue of environmental conservation even the world is facing with climate change effects and the pressure on the environment. Policy and mechanism are needed to ensure that there is a proper evaluation of environmental resources.

The department of environment has identified five concepts of sustainable development through an environmental context as follows:

i. Physical environment
ii. Ecology initiative
iii. Urban services
iv. Environmental administration
v. Education and awareness

The direction of sustainability in Malaysia is basically concerned with the overall factors, but there are several main obstacles by various factors such as economy, social, cultural and political ones. At the same time economic and social development should be continued. According to Shaharudin (2011) the national development policy will allow half of the environment to be sacrificed but it still has to follow the basic sustainable development policy.

Education for Sustainable Development in School

In Malaysia, research related to ESD has yet to garner most of the researchers' attention. A research by Suriati (2009) identified the level of environmental awareness through the concept of sustainable development of 340 secondary school students. The study showed that the understanding of the concept of sustainable development was still low. The research by Saravanan, Rosta & Ahmad (2013) regarding secondary school students' sustainability practice (354 respondents) found that the students' sustainability practice was at a moderate level. His research associates his findings with the lack of sustainability practice in daily life and that students could not relate sustainability practice in the long term. Even a study of the readiness of management and administration to empower sustainable development at school by Abdul Ghani and Aziah (2007) also proved that the school's management and administration were having limited knowledge pertaining sustainable development. The implication was that teachers and students were not given explanation nor sufficient support to implement sustainable development. At the same time, however, efforts to instill sustainability to the whole school were executed in a well-organized program. ESD was implemented informally at the school levelthrough the Sustainable School concept in 2005.

In order to encourage the involvement of schools in this program, Sustainable Schools Program Environmental Award (SLAAS) was implemented in the form of a competition. The purpose of SLAAS was to create a school environment that fosters the conservation and preservation of the environment in the aspects of management, curriculum, co-curriculum and continuous green activities in order to establish a life practice in line with the concept of sustainable development. There are five objectives of the ESD implementation : (i) to nurture the environmental good virtue in the school community (ii) to increase the level of awareness in the school community about the importance of conservation and preservation of the environment (iii) to encourage the school community to conduct effective environmental-friendly activities (iv) to increase co-operation between schools and communities in an attempt to succeed in the EE (v) to create conducive school environment to produce a school community that practices sustainable living.

The greening component in the implementation of the SLAAS program emphasizes on on supporting initiatives for safeguarding environmental quality. Its main activities

include tree planting and building knowledge on energy and water saving practices, waste management and the usage of recycled of resources (The department of Environment, Ministry of Education; Institute of Environment and Development (LESTARI), 2012b). The school carries out the greening activities based on the evaluation prepared by the organizer and the aspects under review are:

i. Strategy and action plan of greening activities
ii. Garden management system
iii. Garden architecture
iv. Greening implementation process
v. Source management towards the increase of efficiency and less consumption.
vi. Strengthening teachers, pupils and school workers positive outlook towards conservation and preservation of environment.
vii. Product consumption and green technology

Most of the schools involved in the SLAAS program undertook work to build an enjoyment garden to create a pleasant and harmonized school environment with the green surrounded by a herbal corner, programs to prohibition of tree cutting, labelling trees, making and using compost fertiliser, to encourage students to plant trees via the "one student one tree project", to tap rainfall for watering plants, to beautify areas of student facilities such as rest areas and discussion places with tree planting.

The relationship between sustainable developments, ESD is for identifying the priorities of teachers and students to engage in the three sustainable development domains - environment, economy and social. Huckle (2013) describes the role of school in spreading knowledge, developing culture and harnessing the potential or the talent of students through school programs. Although EE can occur anywhere, the basic and main place is in the school. School plays an important role in the process of helping students to learn and become aware of the environmental issues (Heneger, 2005; Mageswary, Zurita & Norita, 2013). In fact a study by Bergulnd, Gericke and Rundgren (2014) found that the implementation of ESD in school affect students sustainability consciousness.When good values are instilled in children, the development of the children will grow in line with the cultivation of environmental values that will ultimately produce environmentally concerned and responsible citizens.

Research Method

A total of 69 secondary schools throughout the country were involved in the 3rd session of the SLAAS Program (2009/2010) identified from the Department of Environment, Ministry of Natural Resources and Environment. Of the 69 schools, the researcher used cluster sampling technique, i.e. choosing school samples in all the three categories of participation (sustainable school participatory level, state level and national level). In each category of participation, four schools were selected. Each represents two urban schools and two rural schools. This means that the number of schools involved was 12 SLAAS schools. Meanwhile, the total sample of students and teachers in 12 SLAAS schools was 447 students and 245 teachers, respectively.

Before the actual study was conducted, permission at the level of Ministry of Education (MOE) and the State Education Department (JPN) was required and

subsequently direct communication with the school to determine the date of the study was carried out. For the students' questionnaire set, the researcher conducted the sessions by distributing questionnaires to the respondents in person (face to face). Explanation on the purpose of the study was done. Respondents were reminded to answer the questions honestly and not to copy each others' answers because there was no right or wrong answer. Meanwhile, for the teacher respondents, questionnaires were delivered through SLAAS Program coordinator in the school after obtaining permission from the school principal.

Research Instrument

The questionnaire developed for this study was based on literature review on the topic of sustainable development, ESD, environmental education and mainly from a questionnaire set based on previous studies that are common, stable and robust and similar to this field of research. In this study, face validity and content validity were done in advance before the constructed validity process. Variables in this study consisted of knowledge about SLAAS Program and behavior in ESD. A total of 11 items for knowledge about SLAAS Program variables are constructed based on the Basic Formation of Sustainable School for the Environmental Award (DOE, 2012a) and also from the Guidelines on Implementation and Evaluation of Sustainable School for the Environmental Award (DOE, 2012b). From 11 items knowledge about SLAAS Program, it consisted of seven (7) items on value and four items (4) on activity as measured by the Guttman scale (Bhattacherjee, 2012; Sabitha, 2006). All items on knowledge about SLAAS Program indirectly related to ESD.

Next, there were 20 items to form behavioral variables in this study. However the construct validity results by using Pearson Correlation method found that two items (Item 9 and Item 10) were not significant at the level $p < 0.05$ for both pilot tests. Item 9 refers to "I use plastic bags provided to store goods that have been purchased at school canteen" and item 10 is "I use materials that are not biodegradable (decomposed), such as Styrofoam and plastic in the school canteen". These two items are behaviors that have become so entrenched in their lives that they may be resistant to change. Hence they were dismissed bringing the total items for ESD behavior variables down to 18 items i.e. behavior in the classroom (8 items), at canteen (4 items) and in the school compound (6 items).

After the reliability test was done, the Cronbach Alpha values were 0.923 and 0.889 for pupils and teachers, respectively. According to Pallant (2010) the ideal Cronbach Alpha value is above 0.70, thus the reliability values calculated for the behavioral items in this study were in the high category.

Document Analysis

There was a checklist developed for the purpose of analyzing the documents as proof of sustainable activities in school. Documents of sustainable activities – greening components from the 12 schools were checked and analyzed. Those documents were either in the form of files or report of the SLAAS activities implementation. Documents were studied based on the aspects listed in the checklist as well as by the persons involved such as teachers, pupils, other school staff, officials from government and non-

government agencies. However, discussion in this paper was only based on teachers' and pupils' activities to support the first objective of the research, which is to review the level of ESD behavior of pupils and teachers. The participation of pupils and teachers in greening activities gives an insight on how far the pupils and teachers commit on activities that were planned in SLAAS program.

Results and Discussion

Profile Respondents

Table 1 shows the profile of the 34.5% pupils from the schools that are not going to the state level, 36.5% of pupils from the SLAAS state participants and 29.1% pupils were respondents at the national level. Based on gender, a total of 309 were female respondents (69.1%) and a total of 138 were male respondents (30.9%). From those there were 262 respondents aged 16 years (58.6%) and respondents aged 17 years were 185 pupils (41.4%).

Table 1.
Profile of students

Category	Sub Category	N	%
Level of Participation	SLAAS participants	154	34.5
	SLAAS State	163	36.5
	SLAAS National	130	29.1
Gender	Female	309	69.1
	Male	138	30.9
Age	16 Years Old	262	58.6
	17 Years Old	185	41.4

N= 447 students

Next, table 2 shows the profile of teachers. From 245 respondents, 36.3% were teachers from the schools that were not going to the state level, 26.9% were teachers from the SLAAS state participants and 36.71% were respondents at national level. Based on gender, a total of 184 were female respondents (75.1%) and a total of 61 were male respondents (24.9%). From those there were 216 respondents who were degree holders (88.2%), 23 respondents (9.4%) were master degree holders.

Table 2.
Profile of teachers

Category	Sub Category	N	%
Level of Participation	SLAAS participants	89	36.3
	SLAAS State	66	26.9
	SLAAS National	90	36.7
Gender	Female	184	75.1
	Male	61	24.9
Education level	SPM	1	0.4
	STPM	3	1.2
	Diploma	2	0.8

Bachelor's degree	216	88.2
Master's degree	23	9.4

N= 245 teachers

Respondents' Environmental Educational Profile

The first analysis was on the background of the pupils' and teachers' EE by using seven items. Respondents were asked to answer several questions in relation with the presence or involvement in any EE courses, the level of the EE courses/camps/workshops, involvement in organizing courses, their basic knowledge of SLAAS program, information source of SLAAS program, knowledge in organizing SLAAS activities and frequency in involvement in discussion on environmental issues.

Table 3 shows the distribution of respondents attending the camp/workshop/courses on EE. The result showed that about 52.1% the pupils attended the EE courses while only 29.0% of the teachers attended the same program. Clearly the percentage of teachers attending the program was lower than pupils' involvement. The results also showed that 47.9% of the pupils did not attend any camp/workshop/courses on EE. A small proportion of 3.8%, however attended EE courses for more than 5 times. Amongst the teachers the majority never attended the course while 5.7% attended more than 5 times. On the whole, the attendance of both pupils and teachers in EE course were not satisfactory but those who attended can share the content of the course to other school community.

Table 3.
Background of teachers' and pupils' Environmental Education

Background of environmental education		Pupils		Teachers	
		N	%	N	%
Presence at camp/workshop/ course on environmental education	Yes	233	52.1	71	29.0
	No	214	47.9	174	71.0
Presence at camp/workshop/ course related with environmental education	Never	214	47.9	174	71.0
	Less than 2 times	143	32.0	40	16.3
	3 – 4 times	73	16.3	17	6.9
	More than 5 times	17	3.8	14	5.7

Pupils: N= 447 Teachers: N=245

Analysis of Greening Document

Table 4 displays the analysis of greening activity practices by schools (12 SLAAS schools selected). It showed that schools involved in the SLAAS program had carried out the greening activities as proposed by the organizer. On the issue of strategy and greening action plan, the teachers' involvement was higher than pupils i.e. 100% by teachers as compare to only 25% by pupils. Furthermore, both teachers and pupils were equally involved in the garden management system. In terms of hands-on greening

activities which involved garden architecture and greening implementation process, they showed high involvement by both pupils and teachers (> 80.0%). However, there were several activities which showed less involvement by both pupils and teachers, such as the process of making compost from manure (75.0%) and managing of field areas (50.0%). High involvement from both teachers and pupils (> 90.0%) was observed for the source management activities towards enhancing and saving of water and electricity, through posting energy and water saving suggestions via notice, notice board, poster and announcement. Other greening activities which was proposed by the organizer were (i) enhancement of teachers, pupils and other school staff towards environmental conservation (ii) organizing of exercises in schools related to environment (iii) organizing of greening activities by teachers and pupils in the form of debate, poem and drama.

Table 4.
The analysis of greening activity practices by schools

Greenery activities	Teachers		Pupils	
	N	%	N	%
Strategy and Greening action plan				
Strategy	12	100	3	25
Action plan	10	83	3	2
Implementation	10	83	7	58
Product	9	75	7	58
Garden management system				
Human resource	12	100	12	100
Management plan	9	75	8	66
Duty time-table	9	75	8	66
Garden habitat health observation	10	83	8	66
Garden architecture				
Garden landscape condition	12	100	12	100
Garden cleanliness	11	91	11	91
Garden layout	11	91	11	91
Greening implementation process:				
Planting program using organic manure	11	91	11	91
One plant one student program	11	91	11	91
Planting program, conservation and preservation of appropriate trees from appropriate species	10	83	10	83
Trees labelling with local and scientific names	10	83	10	83
Compost manure project	9	75	9	75
Establishment of learning station	12	100	12	100
Organizing playing field area	6	50	6	50
Resource management towards a more efficient and economical consumption				
Water	11	91	11	91
Electricity power	11	91	11	91
Non-renewable – paper, tonner, printer cartridge	6	50	6	50
Waste product from offices, classroom, canteen,	7	58	7	58

laboratory and workshop				
Saving proposal via	12	100	12	100
Notice, announcement display				
Poster, announcement				
Enhance environmental attitude among teachers, students and school staff.	6	50	6	50
Organizing environmental practices in school	5	41	5	41
Organising greening activities in the form of:	4	33	5	41
Debate				
Poem	3	25	4	33
Drama	2	16	3	25
Usage of green products and technology	3	25	3	25
Rain harvesting system				
Solar energy panel	0	0	0	0
Organic manure	6	50	6	50

Exposure to greening activities received good responses from teachers and students. However, not all activities can be implemented as they faced shortage of time and finance, and also lack of external support.

Analysis the Level of Knowledge about SLAAS Program and ESD Behavior

Table 5 shows the descriptive analysis of the knowledge level of the pupils' and teachers' SLAAS program. Based on the scores, it showed that the knowledge was high level (score 15 – 22) for both pupils and teachers i.e. more than 75.0%. Furthermore, about 3.1% and 1.2% were calculated for the low knowledge level of pupils and teachers on SLAAS program (score 0 – 7), respectively. Meanwhile, at the medium level (score 8 -14) 19.9% and 9.8% were calculated for pupils and teachers, respectively. These findings indicated that the knowledge level of teachers and pupils on the SLAAS program was high and this will directly affect the other variables (such as attitude and commitment-never discuss on this paper). Instead analysis of documents in most SLAAS Program activities that has been evaluated clearly proves that teachers who planned the activities will directly get the students' involvement. This is also proof that ESD awareness begins to be attained through the Sustainable Schools program. According to McKeown (2002), besides knowledge, pupils must be equipped with the skills, values and attitudes to address the current social and ecological realities.

Table 5.
The level of the knowledge about SLAAS program

Level	Pupils		Teachers	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Low level (Score 0-7)	14	3.1	3	1.2
Medium level (Score 8-14)	89	19.9	24	9.8
High level (Score 15-22)	344	77.0	218	89.0
TOTAL	447	100.0	245	100.0
	Mean = 16.20 (mean at		Mean= 17.87 (Mean at	

	high level) and SD=3.65	high level) and SD=3.05

Table 6 shows the level of ESD behavior among pupils and teachers. The overall findings showed that the ESD behavior for both pupils and teachers were at the medium level with the score range of score 37 – 54. On the other hand, for the high level (the score 55 – 72) the pupils had scored lower than the teachers. The results proved that the high level of knowledge about SLAAS program amongst teachers and pupils was not transformed into behavior. This finding is similar with what Mumtazah and Norhafidah (2009) found in their research that the practice of ESD was not yet developed especially at school level. Even though there were many campaigns and government efforts to address the issues of sustainable consumerism, the goals as stated in the National Consumer Policy were still not achieved yet. In Kluang, Johor, Saravanan, Rosta and Ahmad (2013) studied 354 pupils and found that 70.6% respondents on medium level on practice of sustainable consumerism. They concluded that the students practice on sustainable consumerism has not yet reached the required level to conserve and preserve the present and future environment. Similar finding was observed by Aini, Nurizan, dan Fakhru'l-Razi (2007), Norlia (2011) and Pe'er, Goldman, and Yavetz (2007). Summers, Corney and Childs (2003) also stressed that teachers should be exposed to some program of professional development to understand more about the direction of ESD programs. In Malaysia, studies by Abdul Ghani and Aziah (2007) and Hazura (2009) have concluded that the low level of teachers' readiness to practice sustainable development although they have the relevant knowledge. The teacher gives less focus on the sustainable development concept in the teaching processes. Even though the total implementation of SLAAS in the school is a 'whole approach', but the understanding and knowledge of SLAAS program obviously did not help the school to give full commitment towards developing sustainable behavior. Among the causes identified were the lack of strategies and methodologies that were exposed to the teachers, in order to adopt the ESD in teaching and learning.

Table 6.
The ESD behavior level among pupils and teachers

Level	Pupils		Teachers	
	N	%	N	%
Low level (Score 18-36)	19	4.3	1	0.4
Medium level (score 37-54)	303	67.8	137	55.9
High level (score 55-72)	125	28.0	107	43.7
TOTAL	447	100.0	245	100.0
	Mean = 50.15 (mean at the medium level) and SD=8.44		Mean = 54.42 (mean at the medium level) and SD=7.77	

Further analysis was carried out using the Pearson correlation test in order to find a direct relationship between knowledge about SLAAS program and behavior of teachers and pupils. Table 7 clearly showed that there was a positive but low correlation between knowledge about SLAAS program and ESD behavior (r = 0.137**) among pupils. Analysis also showed there was a positive and low correlation between knowledge

about SLAAS program and ESD behavior (r = 0.168**) among teachers. This result indicates knowledge about SLAAS program is related to ESD behavior among pupils and teachers. It's meant that the more knowledge about SLAAS program, teachers and pupils also tended to have a positive attitude towards ESD behavior. Therefore, the study reject the null hypothesis saying that there was no relationship between knowledge about SLAAS program and ESD behavior for both the pupils and teachers. Is supposed knowledge of ESD Program must be given exposure to students and teachers in various mediums in order to shape positive attitudes. Therefore, the role of providing information regarding ESD is not only the responsibility of the school but that of other government agencies and Malaysian Environmental NGO's (MENGO's). Although, early theory regarding changes in behavior emphasizes on knowledge input (see Fishbein and Ajzen, 1975; Ajzen, 1991), individual experience is also influencing ESD behavior as described by Barr et al. (2003) apart from knowledge.

Table 7.
The ESD behavior level among pupils and teachers

Variables	Behavior pupils *(r)*	Behavior teacher *(r)*
knowledge about SLAAS program (pupils)	0.137**	-
knowledge about SLAAS program (teachers)	-	0.168**.

***significant at p<0.01*

Conclusions

'Ideal' awareness level of sustainable development education may be achieved by strengthening sustainable development education through continuous sustainable activities / programs. Schools should not regard SLAAS program as a mere competition, but as recognition towards creating the culture of environmental good virtues in school. In extending the knowledge and information about the SLAAS program, the role of teachers is needed and must be sustained in translating these into student learning. Even many researches have showed that teachers' knowledge and the effectiveness of environmental education are strongly correlated, it is important to have agents in schools such as teachers that can continuously provide information and knowledge on conservation and preservation of the environment. Information sources and hands-on activities such as greening the environment is a smart strategy to enhance awareness on ESD. Formal and informal sustainable activities must be continuously implemented as to improve the environmental knowledge of teachers and pupils, which in the long run will enable changes in their attitude and foster a culture of environmental sustainability.

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