

# EDUCATION FOR SUSTAINABLE CONSUMPTION: AN ANALYSIS OF THE MALAYSIAN SECONDARY SCHOOL CURRICULUM

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## ABSTRACT

*Education for Sustainable Consumption (ESC) calls for desired behavioural changes that comprise the adoption of practices by members of society that will contribute to a low carbon, resource efficient, and sustainable society and economic growth without environmental degradation. The Malaysian school curriculum is analysed for contents and learning outcomes statements that express desired behaviours in sustainable consumption. The objective of this study is to assess the current status and existing initiatives in Education for Sustainable Consumption (ESC) within the Malaysian public education system. The document analysis method is applied in analysing curriculum materials and textbooks. This paper presents results from the analysis of the public secondary school curriculum. Results from the document analysis show that while there are contents related to the consumption, use, and disposal of materials and resources in a number of subjects, there are hardly any stated learning outcomes in terms of desired behaviors in sustainable consumption. It is concluded that there is room for improvement, and opportunities and avenues to incorporate sustainable consumption education in the Malaysian curriculum. It is recommended that desired behavioral learning outcomes in ESC is integrated within the existing curriculum during the next national curriculum review.*

**Keywords:** Curriculum analysis, desired behaviours, Education for Sustainable Consumption (ESC), Education for Sustainable Development (ESD), learning outcomes, Sustainable Consumption and Production (SCP).

## INTRODUCTION

The origins of Education for Sustainable Consumption (ESC) lie in the development of education for sustainable development (ESD) and consumer education. The former focuses on the inter-relatedness among people, cultures and the ecosphere, while the latter highlights the rights and responsibilities of the consumer. Both ESD and ESC are about learning for change and learning to change (UNESCO, 2011). These two educational foci form the conceptual background for this research.

There is general consensus that gaps exist in the Malaysian curriculum in ESD, and specifically in ESC (Habiba and Punitha, 2010). Numerous aspects of education for sustainable consumption are present in the curriculum but there is a general lack of cohesiveness and intent. On the conceptual level, the understanding of the vision of sustainable consumption based on sustainable human development is often vague or lacking. The opportunity to incorporate ESC in the curriculum can be made in the impending curriculum review to the Malaysian secondary school curriculum. The new Standard Curriculum for Primary Schools (Kurikulum Standard Sekolah Rendah- KSSR) was launched in 2011 and is now in its fourth year running. It will complete its first run by 2016 and will transition into the new Standard Curriculum for Secondary Schools that will be implemented in 2017. There is opportunity for ESC content to be formally incorporated in the new Standard Curriculum for Secondary Schools 2017. This curriculum development provides the opportunity for research on the status of ESC in the current curriculum. It is hoped that the gaps identified would be improved upon in the new curriculum. The output from this study could inform the impending curriculum review for the inclusion of ESC content and materials in the new curriculum in 2017. Suitable areas in the curriculum would be identified for the inclusion of appropriate ESC content.

To determine the need for the incorporation of SCP education in the Malaysian curriculum, an analysis of the school curriculum and

assessment of existing programmes need to be carried out to map the current state of play and status of SCP in the curriculum. The general objective is to assess the current status and existing initiatives in Education for Sustainable Consumption (ESC) within the Malaysian public education system. This paper presents results from one specific research objective, that is, to analyse the secondary school curriculum for ESC contents and behavioral practices in sustainable consumption. The conceptual and educational policy background surrounding ESC are first presented, followed by an insight into Malaysia's school curriculum. The analysis method and the results obtained are then discussed. Subsequently, the implications from the findings are given, and finally, the conclusions drawn.

According to UNEP (2010), integrating ESC into formal education is fundamental since children and youth are among the most vulnerable and influential consumers, need to be given better tools that will help them to shape tomorrow's world into a more sustainable one and to become responsible consumers and citizens. Education for sustainable consumption is intended to enable students to take informed and responsible decisions and actions, now and in the future.

The importance of consumer education was rooted in the declaration of consumer rights in 1985 by the United Nations. The Johannesburg Plan of Implementation, signed at the UN World Summit on Sustainable Development (WSSD) in 2002, calls upon all governments to take action to "change unsustainable patterns of consumption and production" (UNEP, 2010, p.4). Education for Sustainable Consumption calls for desired behavioural changes that comprise the adoption of practices by members of society, from all walks of life and in all forms of activities, that will contribute to a low carbon, resource efficient, and sustainable society and economic growth without environmental degradation (OECD, 2011).

Education for sustainable consumption is essential to empower individuals and social groups with appropriate information on the impacts of their daily choices as consumers, as well as for workable

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solutions and alternatives. Its main objective is helping people to learn how to make informed decisions for the benefit of themselves and others, now and in the future, and to act upon these decisions. It entails the acquisition of knowledge, attitudes and skills necessary for functioning in today's society. It is responsibility learning, which aims to contribute to the individual's ability to manage his or her own life while also participating in the stewardship of the global society's collective life. Although the contexts and methodology used in education for sustainable consumption may vary in different cultural settings, there are many common learning outcomes and competencies. Identifying these competencies and outcomes is an ongoing process that needs to move with changes in society.

The main goal of the UN's Decade of Education for Sustainable Development (DESD, 2005-2014) is to integrate the values inherent in sustainable development into all aspects of learning to encourage changes in behavior that allow for a more sustainable and just society for all. The DESD recognizes that achieving more sustainable consumption patterns requires both business practices and government policies that broaden the range of choices and guarantee clear and reliable information open to consumers to make environmentally and ethically sound decisions. Education plays a particularly important role in catalysing this process, and UNESCO is entrusted to coordinate global efforts to make education relevant for addressing present and future sustainable development challenges.

Today, education is being redesigned in terms of how to prepare people for life: for job security; for the demands of a rapidly changing society; and for technological changes. On the level of course content, some of what is presented is fragmented and occasionally based on outdated scientific data and models that have proven to function poorly in real life. On the didactical level, teachers struggle to combine theory, research and practice, finding it difficult to connect the course content to the everyday lives of the students. And on the level of student motivation, teachers encounter disillusionment, passivity, fatalism and a sense of powerlessness. The Tbilisi Declaration 1977, had outlined the strategies and approaches in delivering environmental education. These widely adopted environmental education objectives are common to ESC: awareness of the environment and its associated problems, knowledge through understanding of environment and its problem in various experience, developing positive attitude by actively involving in environmental protection, develop skills to identify and solve environmental problems, and actively participate towards resolution of environmental problems.

The main challenge in relation to education for sustainable consumption is how to support initiatives that stimulate the individual's awareness of the central role they play in forming society and empower them to choose responsible, sustainable lifestyles (Tukker *et al.*, 2008). This involves providing opportunities for learning about the systems and processes connected to consumption. It also involves relearning and reorganizing information in wider contexts. It is contingent on reconsideration of such central questions as the value of material and non-material prosperity, and the significance of service to one's fellow human. The present situation indicates the need for the further development of analytical, reflective thinking skills in order to decode the extensive and aggressive commercial messages to which individuals around the world are constantly exposed. Education for sustainable consumption should be an instrument for ensuring awareness of consumer rights. The challenges are for proactive measures as well as protective ones. They encompass helping individuals learn how to function as citizens who not only make selective, reflected lifestyle choices in the market but who also effect changes by seeking creative new solutions and engaging as stakeholders in the dialogues and debates that determine policy.

The phenomenon of climate change is one of the major environmental issues that need to be addressed in order to ensure the sustainability for human well-being and other living things. Ecological

footprint can highly influenced the phenomenon of climate change where the high human consumption and demand to fulfill their living satisfaction is significantly higher than the Earth's ability to provide the natural resources to the human such as food sources, fuel consumption for transportation and others. Besides the ecological footprint, one of the examples that significantly related with climate change is the waste management. The improper of waste disposal and treatment can negatively affect the environment by producing several greenhouse gases (GHG) such as methane and carbon dioxide which can contribute to climate change in globally. Therefore, education for sustainable consumption can act as a tool and platform to disseminate the knowledge to the students which subsequently enhance their awareness through green practices such as recycling and composting, water and energy saving, healthy food intake and using the public transportation and cycling.

Avenues for improvement and opportunities to incorporate sustainable consumption education in the curriculum could be acquired by looking at some best practices. Cars and West (2014) identified Sweden as the best example of how a mature, developed country promotes life-long learning through education. The development of ESD in Sweden can be traced to the ninetieth century. The teachers training have started to incorporate the study of nature into play, lesson plan and school resource materials. ESD can also be linked to a long Swedish tradition of outdoor exercise, outdoor education and nature preservation. The strong basis in environmental awareness has eased the integration of ESD based on contemporary science into Swedish school policy and programmes. According to National Agency for Education (2011), Sustainable development appears as a curricular goal for each of the following subjects: biology, chemistry, civics, crafts, geography, history, home and consumer studies, physics, religion, and technology. In civics, crafts, history, and home and consumer studies, for example, students should consider the consequences of their choices regarding sustainable ecological, economic, and social development. In biology, teachers are to offer pupils the information from which to form their own opinions on the use of natural resources and ecological sustainability. In chemistry study, students are to relate energy and natural resource use, both nationally and internationally, to ESD. Ethics surrounding the sustainability of environmental and developmental issues are included in geography and religion. In physics teachers showing how people and technology influence the environment, students can draw conclusions about recent developments in sustainability. In technology, students are to learn about recycling, reusing, and improving sustainability with technology. ESD consequently promotes competencies like critical thinking, imagining future scenarios and making decisions in a collaborative way.

Another example that has been given by Blum *et al.*, (2013) is Singapore. Environmental concern is a highly important consideration to its development and long-term survival. Singapore is land-scarce, water-short and energy-poor in a context of high consumption of these resources. Taking water as an example, Singapore is dependent on foreign sources for almost 50% of its daily water supply, and this dependence has strategic implications for the government (Goh, 2005). Principles of sustainable water management were therefore adopted from the late 1980s not out of choice, but of necessity. The Ministry of Education also understands that this issue is important for its citizens to appreciate and hence it is incorporated within the curriculum, particularly in social studies, sciences, geography, and civics and moral education. Pupils from a young age are imbued with a sense that water should be valued and consumption should be reduced.

However, in Denmark, the government's main focus has been on linking climate change to innovations in science education, rather than on developing a separate conceptualization of Climate Change Education (CCE) for inclusion within the curriculum (Kopinina, 2013). This may have in turn made it more difficult for teachers of other subject areas to see the importance of teaching about these issues as part of

wider environmental education practice (Breiting et al., 2009 as cited in Blum et al., 2013).

In Indonesia the United Nations Environment Programme (UNEP) implemented a pilot project on the "Institutional Strengthening of Education for Sustainable Consumption, Advancing Education for Sustainable Consumption Policy and Implementation Strategies" (UNEP, 2010). Recommendations were made to policymakers to support ESC through formal education by mainstreaming and integrating ESC into the existing curricula, and encourage further development of current initiatives in non-formal education.

### MATERIALS AND METHODS

The Malaysian school curriculum is analysed for contents and learning outcomes statements that express desired behaviours in sustainable consumption. The official curriculum specifications documents issued by the Malaysian Ministry of Education are used in this analysis. The Curriculum Specifications (CS) documents were developed by the Curriculum Development Centre of the Ministry of Education Malaysia (2010a, 2010b, 2010c). The curriculum specifications provide the details of the curriculum, such as the aims and objectives of the curriculum, brief descriptions on thinking skills and thinking strategies, scientific skills, scientific attitudes and noble values (for the science curriculum), teaching and learning strategies, and curriculum content. Each curriculum content specifies the learning objectives, suggested learning activities, the intended learning outcomes, and vocabulary.

The approach in analysing the curriculum materials may be regarded as qualitative content analysis as defined by Fitzpatrick, Sanders and Worthen (2004) and Flick (2006). The curriculum documents were perused for ESD and ESC related contents. Then it was determined whether the learning objectives were stated as desired behavioral objectives. These were systematically recorded in data tables.

### RESULTS AND DISCUSSION

The Malaysian formal curriculum consists of the Standard Curriculum for Primary Schools, the Integrated Curriculum for Primary Schools, and the Integrated Curriculum for Secondary Schools. Currently, the Malaysian education system infuses Environmental Education (EE) into the modules and curriculum in selected topics for subjects such as Science, Geography, Biology and many more (Habibah and Punitha, 2010). There is no specific core subject on environmental education in schools.

There are a total of 58 subjects in the Integrated Curriculum for Secondary School, of which 16 are core subjects offered in the majority of mainstream schools (Table 1). Of the core subjects, eleven (11) were found to have ESD or ESC related content (Table 2). Topics that have direct reference to the environment or environmental sustainability are found mostly in subjects such as Living Skills, Health Education, Science, Physics and Commerce.

Results from the document analysis show that while there are contents related to the consumption, use, and disposal of materials and resources in the eleven core subjects, the learning outcomes were mainly focussed on cognitive knowledge. There are learning outcomes statements that were related to ESD practices in five subjects (Table 2), but there are hardly any stated learning outcomes in terms of desired behaviors in sustainable consumption and production.

One of the secondary school subjects that have a direct curriculum focus on the environment is Science. The Form Five Science curriculum contains six themes (Table 3). The theme on 'Balance and Management of the Environment' focuses on one learning area, 'Preservation and Conservation of the Environment'. There are five learning objectives for this topic, and the corresponding learning outcomes, as shown in Table 4.

**Table 1.** Number of subjects in the Malaysian School Curriculum

Level	Curriculum	Number of Subjects
Primary	• Standard Curriculum for Primary Schools ( <i>Kurikulum Standard Sekolah Rendah KSSR</i> ) (with effect from 2011)	34
	• Integrated Curriculum for Primary Schools ( <i>Kurikulum Bersepadu Sekolah Rendah KBSR</i> ) (1993- 2003 reviewed- 2015)	20
Secondary	• Integrated Curriculum for Secondary Schools ( <i>Kurikulum Bersepadu Sekolah Menengah KBSM</i> ) (in effect until 2016)	58
	• Standard Curriculum for Secondary Schools ( <i>Kurikulum Standard Sekolah Menengah KSSM</i> ) (to take effect from 2017)	

**Table 2.** Secondary Core Subjects with ESC Contents

Subjects	ESC Content	Learning Outcomes
1. English Language	✓	X
2. Geography	✓	X
3. Integrated Living Skills	✓	✓
4. Health Education	✓	✓
5. Moral Education	✓	X
6. Civic and Citizenship Education	✓	X
7. Science	✓	✓
8. Biology	✓	X
9. Physics	✓	✓
10. Commerce	✓	✓
11. Basic Economy	✓	X

(✓ = Yes; X = No)

**Table 3.** Themes and Learning Areas (Form Five Science Syllabus)

Themes	Learning Areas
1. Man and the Variety of Living Things	• Microorganisms and their Effects on Living Things
2. Maintenance and the Continuity of Life	• Nutrition and Food Production
3. Balance and Management of the Environment	• Preservation and Conservation of the Environment
4. Matter in Nature	• Carbon Compounds
5. Force and Motion	• Motion
6. Technological and Industrial Development in Society	• Food Technology and Production • Synthetic Materials in Industry • Electronics and Information and Communication Technology (ICT)

It is apparent from Table 4, that the learning outcomes are all instructional statements in the mastery of educational objectives such as identify, explain, describe, and other action verbs that conform to the taxonomy of learning. The only exception is the learning outcome statement for the fifth learning objective, which states that 'A student is able to practice good habits to preserve and conserve the environment. However, this statement is still vague since doubts still exist as to what kind of habits would preserve and conserve the environment? Would students be aware that their consumption of goods and materials

contribute to the wastes that pollute the environment? Or would these would be consumers be aware that their choice of products use up non-renewable resources, or could contribute to the deterioration of the environment? As pointed out by Tukker et al (2008), reducing environmental pressure by consumption can be reached in three ways: greening production and products, shifting demand to low- impact consumption categories, and lowering material demands. Education for sustainable consumption will enable students to make informed and responsible decisions and take actions, and it is fundamental to integrate ESC into formal education since the younger generation are among the most vulnerable and influential consumers (UNEP, 2010).

**Table 4.** Learning Objectives and Learning Outcomes

Theme 3: Balance and Management of the Environment Learning Area: Preservation and Conservation of the Environment	
Learning Objectives	Learning Outcomes
1. Analysing balance in nature	<p>A student is able to:</p> <ul style="list-style-type: none"> <li>describe what balance in nature is,</li> <li>state the natural cycles that help to maintain balance in nature</li> <li>explain how these natural cycles help to maintain balance in nature</li> <li>explain how food webs help to maintain balance in nature</li> <li>explain with examples the effects of natural disasters on balance in nature</li> <li>suggests ways to maintain balance in nature</li> </ul>
2. Analysing the effects of environmental pollution	<ul style="list-style-type: none"> <li>identify the sources of environmental pollution</li> <li>explain the effects of environmental pollution</li> <li>describe global warming</li> <li>relate greenhouse effect to global warming</li> <li>state what ozone layer is</li> <li>explain the importance of ozone layer</li> <li>state the chemicals that damage the ozone layer</li> <li>list the sources of chemicals that can damage the ozone layer</li> <li>explain how damaging ozone layer affects living things</li> </ul>
3. Synthesizing the idea of preservation and conservation of the environment and pollution control	<ul style="list-style-type: none"> <li>state the importance of preservation and conservation of the environment</li> <li>generate ideas on environmental pollution control</li> <li>explain with examples how preservation and conservation of the environment can contribute to a clean and healthy environment</li> </ul>
4. Evaluating the importance of proper management of natural resources in maintaining balance in nature	<ul style="list-style-type: none"> <li>generate ideas on proper ways to manage natural resources in order to maintain balance in nature</li> <li>explain with examples the effects of improper management of natural resources</li> <li>justify the need for proper management of the environment</li> </ul>
5. Practising responsible attitudes to preserve and conserve the environment	<ul style="list-style-type: none"> <li>practise good habits to preserve and conserve the environment</li> <li>Suggested Learning Activities: Plan and practice good habits to preserve and conserve the environment through the following activities: (a) awareness campaigns on reducing, reusing and recycling (b) jungle trekking to appreciate the beauty of nature and an unspoilt environment (c) adopt part of an area such as beach, river, hill and forest to practice responsible and caring attitudes to preserve and conserve, (d) Write a proposal on how to preserve and conserve the environment in a local community.</li> </ul>

Based on the analysis on Malaysian Secondary School Curriculum, there are no clear views in emphasizing the sustainable content in the curriculum and also the modules. The term of Education for Sustainable Development and Education for Sustainable

Consumption are not very familiar in Malaysia especially at the school level. The study conducted by Kopnina (2013) has contribute a suggestion and view that the effective instrument for teaching and the assessment on educational curriculum and modules mainly on consumption need to be developed.

The education system in Malaysia for environmental education is more on theoretical learning rather than practical learning approaches. The practical approaches on theoretical learning is the most effective strategies where it can be implemented through the social participation including the public such as composting of food waste activities, recycling campaign, cycling and jungle trekking. Lukman *et al.*, (2013) have stated that the environmental issues cannot be solved through conventional learning approaches because this method is not comprehensively suffice to foster the positive behaviour among the students towards the environment at the present and for the long term. The knowledge and practices on environmental education is continuous learning and it needs to be disseminating during the early stage of education especially for the children rather than the students at higher learning institution.

Adham, Merle and Weihs (2013) pointed out that Malaysia's "green strategies" use education and awareness raising activities as a platform to protect the environment. According to the authors, building a culture of conservation and efficient resource management can be achieved through awareness campaigns as well as through the formal and informal education as identified in multiple aspects in the "educational instrument" (Adham, Merle and Weihs, 2013, p.8). These encompass public education activities, training, research and development (R&D), awareness campaigns as a backbone to support ESC. The most important tool in any formal education system is the curriculum. This document should reflect the developmental vision of the nation. Therefore, it is implicative that ESC should be made an educational goal to ensure environmental sustainability. Learning outcomes need to focus on individual behavioral changes, adoption of lifestyle patterns and making choices that lead to sustainable use of resources and minimal impact on the environment (Wang, Liu, Qi, 2014).

## CONCLUSION

There is ample room for improvement, and opportunities and avenues to incorporate sustainable consumption education in the Malaysian curriculum. Even though EE is integrated across the Malaysian curriculum, there are hardly any learning outcomes in terms of desired behaviors in sustainable consumption and production. The existing curriculum documents contain numerous topics related to ESD but very few focus on ESC. It is apparaent that ESC is not an agenda in the national curriculum. Nevertheless, ESD has received widespread attention and has been integrated sporadically across the curriculum. Having reached the end of the DESD, it is still not too late to incorporate ESC as an agenda in the new national curriculum. It is recommended that ESC content, stressing on desired behaviors towards sustainable consumption and production in daily life practices be integrated within the existing curriculum in the impending national curriculum review.

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