

Education for Sustainable Development in Hong Kong: A Review of UNESCO Hong Kong's Experimental Schools

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Abstract

This paper studies the process of education for sustainable development (ESD) in Hong Kong. Research results are based on the triangulation of in-depth document review, panel judges' assessment, and institutions' websites. The aim of the review is to assess specific key aspects of the institutions' performance and their achievements and challenges within the context of the requirements for ESD Experimental Schools Qualifications. This study identifies that Student Learning and Innovation and Teacher Development are the two weakest factors in the ESD Experimental Schools. It suggests that Schools should support a stable teaching team to promote ESD and encourage students to engage in sustainable development-related ecotourism programmes and activities in Hong Kong.

Keywords: education; sustainable development; ecotourism; Hong Kong

Introduction

The UN Decade of Education for Sustainable Development (DESD) is a global initiative led by UNESCO. It aims at reorienting education worldwide: everyone should have the opportunity to acquire the values, competencies, skills and knowledge that are needed to contribute to sustainable development (UNESCO, 2005). Education for Sustainable Development is seen as a major contributor towards achieving sustainable futures through promoting an awareness of the issues at all levels, developing particular values and influencing behaviours. As stated in the DESD plan, the underlying values which ESD must promote include: 1. Respect for the dignity and human rights of all people throughout the world and a commitment to social and economic justice for all; 2. Respect for the human rights of future generations and a commitment to inter-generational responsibility; 3. Respect and care for the greater community of life in all its diversity which involves the protection and restoration of the Earth's ecosystems; 4. Respect for cultural diversity and a commitment to build locally and globally a culture of tolerance, non-violence and peace (UNESCO, 2005). Obviously, ESD is different in different contexts. The difference with the eco-centric position is that it highlights the quality of human life as the main focus. In addition, it is not only the person's individual life; it is also the life of others. Thus, sustainable development is viewed as a fundamentally social phenomenon (Carmichael, 2003). The underlying values relate to valuing the other so that the transformative power of education could bring about

fundamental changes demanded by the challenges of sustainability (Pavlova, 2008).

Under the guidance and rationales of the China National Working Committee for UNESCO and the related spirit of sustainable development, Experimental Schools will continue to be implemented in all areas of Mainland China. Every year, UNESCO China will receive applications for ESD Experimental Schools from all regions in Mainland China. After local assessment and endorsement, certificates will be presented to successful schools by the China National Working Committee for UNESCO on ESD. Mainland China has designated 1,000 schools as experimental schools for Education for Sustainable Development and Long-term Education Reform and Development (2010-2020) (UNESCO, 2011).

The Hong Kong Education for Sustainable Development Association (HKESD) has been established since 2003 and is now a registered charitable organization. The New Senior Secondary and Education for Sustainable Development Programmes (thereafter the *NSS & ESD*) are targeted towards senior secondary students with the aim of providing them with Other Learning Experiences (OLE). UNESCO HK is dedicated to facilitating and achieving UNESCO's mission and creating conditions for dialogue among civilizations, cultures and peoples based upon respect for commonly shared values. It is through this dialogue that the world can achieve global visions of sustainable development encompassing observance of human rights, mutual respect and the alleviation of poverty. It strives to work towards the building of peace and to facilitate the sustainable development of society, economy and environment through education, sciences and culture. UNESCO HK aims to: 1) upholding the mission and objectives of UNESCO; 2) launching programmes and activities in accordance with UNESCO objectives; 3) leveraging Hong Kong's technology and talents to best support its long-term development as well as that in Mainland China; 4) strengthening Hong Kong's roles in international affairs and activities (UNESCO HK, 2013a).

UNESCO HK is the representative of the China National Working Committee for UNESCO on ESD in Hong Kong. Seven schools are designated as ESD schools, including 6 secondary schools and one primary school. These schools have participated in the ESD programme in Hong Kong with the following objectives: 1. To arouse students' awareness of sustainable living practices and habits; 2. To encourage changes in behavior and attitude of students for a more sustainable future; 3. To enhance students' ability and skills in communication and problem solving; 4. To provide training for students to think in multiple perspectives and understand the relevance of their learning to the environment, economy, culture, community and sustainable development (UNESCO HK, 2015). These schools will be granted ESD experimental schools status if they have made an application and assessed to satisfy the following four conditions: 1. The school principal should play a leading role in conducting experimental work for which there should be an appropriate organizational structure and a stable team of teachers; 2. At the time of application, the school should have undertaken the experimental works in classroom, extra-curricular and outside-school

activities with some degree of achievement for at least two years; 3. The school should have formulated the ESD working plan for the next 1 to 3 years, including guidelines, objectives, main contents, organizational structure and anticipated results, etc; 4. The school should be able to provide financial support for teacher training, granting awards for research results, acquiring physical resources, employing experts and making external visits (UNESCO HK, 2013b). There are few studies examining the self-evaluation of seven schools that have participated in the ESD programme.

This study is to review the education for sustainable development practice through experimental schools in Hong Kong. The aim of the review is to assess specific key aspects of the institutions' performance, their achievements and challenges within the context of the implementation of the requirement for ESD experimental school's qualifications. The specific objectives of this study are as follows: First, this study evaluates the experimental school's performance within the UNESCO system. Second, it examines what factors can strengthen implementation. Finally, it provides suggestions for the improvement of the education for sustainable development practices in Hong Kong.

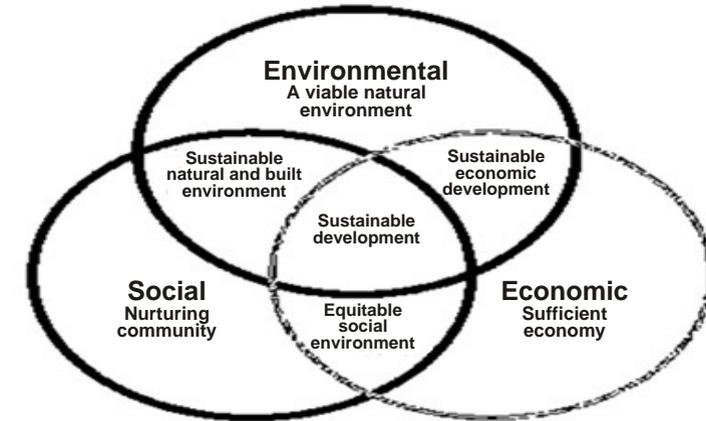
Literature Review

Sustainable Development (SD) and Education for Sustainable Development (ESD)

Sustainable development is viewed as a fundamentally social phenomenon (Camichael, 2003). The Brundtland Commission has defined sustainable development as "meeting the needs of the present without compromising the ability of the future generations to meet their own needs". Sustainable developments that are locally relevant and culturally appropriate, include several common goals or themes. The International Implementation Scheme for the United Nations Decade of Education for Sustainable Development (DESD) (UNESCO, 2005) identified key areas of concept as: (see Figure 1)

- Society: an understanding of social institutions and their role in change and development, as well as the democratic and participatory systems which give opportunity for the expression of opinion, the selection of governments, the forging of consensus and the resolution of differences.
- Environment: an awareness of the resources and fragility of the physical environment and the effects on it of human activity and decisions, with a commitment to factoring environmental concerns into social and economic policy development.
- Economy: a sensitivity to the limits and potential of economic growth and their impact on society and on environment, with a commitment to assess personal and societal levels of consumption out of concern for the environment and for social justice.

Figure 1: Three pillars of sustainability



(Sources: UNESCO, 2005)

According to UNESCO, ESD is an emerging but dynamic concept that encompasses a new vision of education that seeks to empower people of all ages to assume responsibility for creating a sustainable future. ESD should deal with the dynamics of the physical, biological, social, economic and spiritual environment (United Nations, 1992). ESD has included key sustainable development issues in teaching and learning; for example, climate change, disaster risk reduction, biodiversity, poverty reduction, and sustainable consumption. It also requires participatory teaching and learning methods that motivate and empower learners to change their behavior and take action for sustainable development (UNESCO, 2013a). ESD means a lifelong learning process that leads to an informed and involved citizenry having the creative problem solving skill, scientific, and social literacy, and commitment to engage in responsible individual and cooperative actions. These actions will help ensure in an environmentally sound and economically prosperous future (President's Council on Sustainable Development, 1994). Janse van Rensburg and Lotz-Sisitka (2000) believed ESD is an empowering process in which the individual and community learn the connectivity among the three pillars of sustainability and uses this knowledge to improve the quality of life of humans.

The development of ESD in Mainland China and Hong Kong

Sustainable development or sustainability is not a new idea; it is deeply embedded into the cultures of the Asia-Pacific region under different forms and names. It means caring not only for ourselves, but also our children and their children. So in a nutshell, sustainable development means "living well within the means of nature" (Bhandari, & Abe, 2003). ESD has been recently recognized as an important area in the new Chinese educational reform (Yang, Lam, & Wong, 2010). ESD in Mainland China began from 1992 Rio Conference and Mainland China's Agenda 21. There are several important projects/programmes implementing ESD. Based on the experience of the UNESCO EPS-ESD project, Education Commission of Beijing City issued guidelines for ESD in

primary and secondary schools (Choi, Jiang, Guo, & Cao, 2009). However, as a government policy, it first appeared in 2003, in implementing Guideline on Environmental Education for Primary and Secondary Schools by Ministry of Education (Ministry of Education, 2003). The core issue of education is education equity and quality, as that is the preparation of Mainland China's mid- and long- term education strategy.

Due to unbalanced economic development across the country, there are different levels of ESD developed in different regions in Mainland China. The eastern part of Mainland China is relatively more developed than the west. In poorer areas, people consider more on economic development and on living a better life than the risk of polluting the environment. Li and Wang (2005) found that when there are conflicts between economic benefit and environmental risk, the enterprise and the local government might make inadequate decisions, and the local people did not know their lost and right in the western region in Mainland China. Their environmental awareness is generally low in the poor regions as children might not have the chance for schooling and there is often higher illiteracy. ESD has developed better in the coastal part of Mainland China, such as Beijing, Shanghai, the cities in the Changjiang River Delta and Pearl River Delta, etc. However, there are still difficulties to ESD in these areas. One of the important issues was limited support from the local government, especially financial support. There are other difficulties. Such as the main index to evaluate a school is often at the rate of students entering higher education. Knowledge education is taken much more attention than ESD in Mainland China (Choi et al., 2009). Lee (2010) believed that Chinese Green philosophy and/or the green approach to ESD in the context of Mainland China is needed for long-term development.

In Hong Kong, the Chief Executive made it clear in his 1999 Policy Address the endeavour to building Hong Kong into a world-class city and making Hong Kong a clean, comfortable and pleasant home would require a fundamental change of mindset. Every citizen, every business, every Government Department and Bureau needs to start working in partnership to achieve sustainable development. In simple terms, sustainable development in Hong Kong means:

- Finding ways to increase prosperity and improve the quality of life while reducing overall pollution and waste;
- Meeting our own needs and aspirations without doing damage to the prospects of future generations; and
- Reducing the environmental burden we put on our neighbours and helping to preserve common resources (HKSAR, 1999)

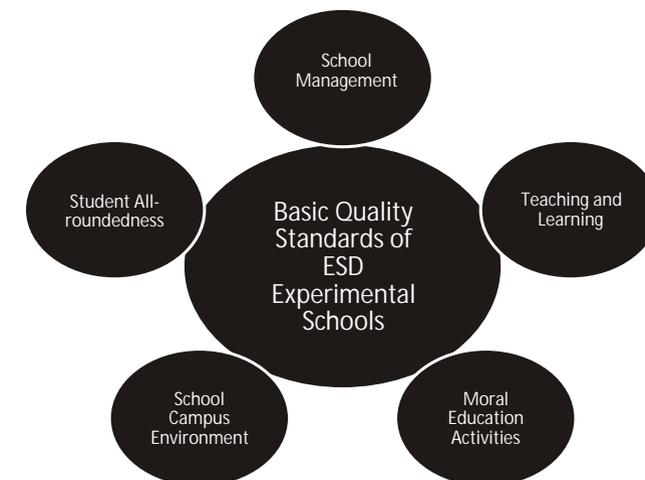
The Government's efforts alone cannot build a sustainable society. The Sustainable Development Division (SDD) has established contacts with non-government organizations, green groups, academic institutions, the private sector and leading organizations, both locally and overseas, with a view to building strong partnerships in

pursuing sustainable development. In addition, the SDD has launched a full programme to promote public awareness of sustainable development. The Council for Sustainable Development has been implementing a Sustainable Development School Outreach Programme to introduce the concept of SD to teachers and students since 2002. So far, more than 420 schools (about 123,000 teachers and students) have participated in this programme. Chan & Yung (2004) argued that Hong Kong like many Western countries is moving towards the goal of urban sustainability. However, the implementation mechanisms towards achieving such a goal are indeed a complex and often contentious process, and much of the rationale behind the prevailing development control laws today is not conducive to meeting with the requirements of "sustainability".

Quality Evaluation

Under the guidance and rationales of the China National Working Committee for UNESCO and the related spirit of sustainable development, Experimental Schools will continue to be implemented in all areas of Mainland China. The requirement for quality standards in the form of indicators/factors for ESD Experimental Schools in Hong Kong include: School Management, Teaching and Learning, Moral education activities, School Campus Environment and Student All-roundedness (See Figure 2).

Figure 2: Quality Standards of ESD School in Hong Kong



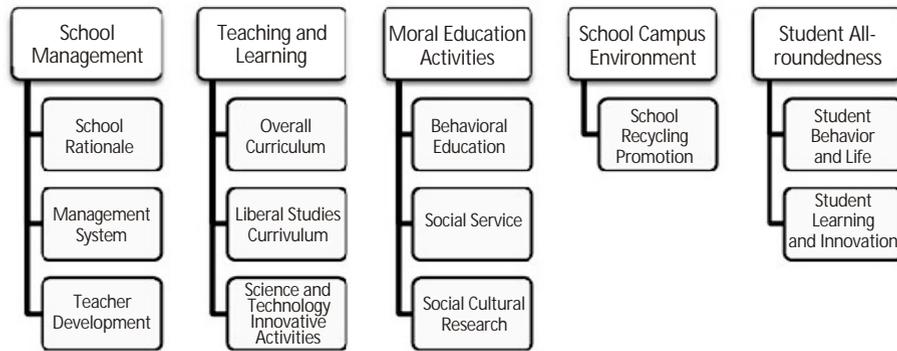
(Sources: UNESCO HK, 2013b)

An Evaluation Framework of ESD in Hong Kong

According to UNESCO (2013b), UNESCO's overall strategy and approach towards institutions should be determined by three criteria: first, the financial situation of the organization, and more particularly the long-term availability of financial resource for supporting the institutions; second, the extent of alignment and integration of the institutions' activities with the education sector's priority areas of work, with implications for the division of labour, complementarity and achievement of economies

of scale; third, the performance and impact of the institutions' activities in key areas of the education sector's mandate. Based on these three criteria, it is established that there are five indicators of ESD which aim at achieving a sustainable development in our society, under which are 12 evaluation criteria (See Figure 3).

Figure 3: Evaluation of ESD Quality Criteria

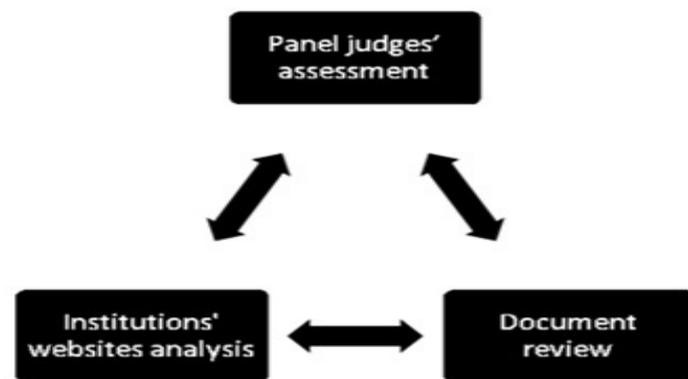


(Sources: UNESCO HK, 2013b)

Method

This study is based on the triangulation of in-depth document review, panel judges' assessment, and institutions' websites. 7 ESD Experimental Schools will be reviewed in this study, including 6 secondary schools and one primary school. All 7 schools follow the requirement for quality standards in the form of indicators/factors for ESD Experimental Schools in Hong Kong. First, according to the panel judges' assessment scores, we will do a descriptive analysis on the results of the seven schools. The panel judges are from professionals and industry experts who are invited by UNESCO HK. Second, we will do a content analysis of the individual institution's self-assessment report and institution's websites based on UNESCO HK's Evaluation Framework of ESD in Hong Kong (see Figure 4). Content analysis for this study allows the researchers to investigate the texts without any influence or direction from any 'a priori' theory or concepts, and it is thus open to discussion regarding what is revealed from this study (Jennings, 2001).

Figure 4: Triangulation of Data Sources



At stage one, we conducted a quantitative analysis of the panel judges' assessment. At this stage of research, the analysis is based on the panel judges' assessment scores regarding those 7 school's performance. According to each evaluation criterion score, we conduct a descriptive statistical analysis to compare the mean score of each criteria using SPSS20.0.

At stage two, we used a qualitative approach to analysis the institution's self-assessment report and websites through content analysis, using NVivo10.0. The data at this stage are mostly textual data from the institution's self-assessment report and website. The researchers organized the collected data into five categories: School Management, Teaching and Learning, Moral Education Activities, School Campus Environment, and Student All-roundedness. Rounds of discussion were held to reach consensus. The six dimensions for ESD School Management, Teaching and Learning, Moral Education Activities, School Campus Environment, Student, All-roundedness and Others were decided upon as a result. Under these six factors, categories are derived.

Results

Stage one

Table 1 shows the top three best performances of the Experimental School in Hong Kong under the evaluation of ESD Quality Criteria are Behaviour Education, School Rationale and Management System. Both their overall means are higher than 8.5 and the minimum scores are greater than 7.5. The weakest three performances out of the 12 criteria of the Experimental Schools are Social Cultural Research, Teacher Development, and Student Learning and Innovation. Both their overall means are less than 8 and the minimum scores are less than 6.7.

Table 1: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Behavioural Education	7	8.00	10.00	8.8957	.94805
School Rationale	7	7.57	9.33	8.5529	.64662
Management System	7	7.67	9.33	8.5419	.63972
Overall Curriculum	7	7.33	9.33	8.4271	.80881
School Recycling Promotion	7	7.56	9.33	8.3777	.78549
Social Service	7	7.33	10.00	8.2862	.84853
Liberal Studies Curriculum	7	7.67	8.80	8.2105	.49158
Student Behaviour	7	7.33	8.67	8.1824	.62754
Science and Technology Innovative Activities	7	7.67	8.67	7.9957	.38124
Social Cultural Research	7	6.67	9.00	7.9533	.95203
Teacher Development	7	6.67	8.67	7.7862	.81070
Student Learning and Innovation	7	6.00	9.00	7.7629	1.13478
Valid N (listwise)	7				

Stage two

Based on the frequency of the factors discussed, a number of recurring themes were organized to represent what was perceived to be critical for the success of ESD. The 7 ESD Experimental Schools' self-assessment reports and websites are categorized into six broad evaluation factors, according to UNESCO HK's the Evaluation Framework of ESD (see Table 2 and Figure 5).

Table 2: Factors of Implementation of ESD from Self-assessment Report

Factors	Categories	Text Units for each School							Total	%
		1	2	3	4	5	6	7		
School Management	a. School Rationale	1	2	3	2	3	5	1	17	2.7
	b. Management System	3	0	0	3	6	4	3	19	3.1
	c. Teacher Development	5	0	1	8	2	9	0	25	4.0
	d. School Publicity	0	1	1	1	3	0	2	8	1.3
Teaching and learning	a. Overall Curriculum	9	8	1	5	0	1	0	24	3.9
	b. Liberal Studies Curriculum	7	2	0	9	2	6	1	27	4.4
	c. Science and Technology Innovative Activities	5	8	1	5	0	1	1	21	3.4
Moral education activities	a. Behavioural Education	8	3	1	22	6	13	4	57	9.2
	b. Social Service	13	9	0	15	20	9	0	66	10.7
	c. Social Cultural Research	13	5	0	23	5	18	0	64	10.3
School campus environment	a. School Recycling Promotion	27	9	11	16	1	16	13	93	15.0
Student All-roundedness	a. Student Behaviour and Life	3	1	0	5	2	4	15	2.4	
	b. Student Learning and Innovation	11	4	0	3	1	4	1	24	3.9
Others	a. Development Achievement	11	0	36	19	1	48	21	136	22.0
	b. Future Plan	9	0	7	5	0	1	1	23	3.7
Total									619	100

The 619 text units are organized into six broad factors, according to the UNESCO HK's Evaluation Framework and its characteristics of implementation in Table 2. Text units mean the number of times the activity being mentioned in Experimental Schools' self-assessment reports. For example, one self-assessment report claimed that the school supported student sustainable tourism activities. This should account for one text unit on Student Learning and Innovation. The most important factor is on "Moral education activities", with 57 text units of Behavioural Education, 66 text units of Social Service, and 64 implementation units of Social, Cultural Research, including a total of 187 and accounts for 30.2% of all the text units. By contrast, the weakest factor is "Student All-roundedness", with 15 text units on Student Behavior and Life and 24 text units on Student Learning and Innovation, which account for 6.3% of all the text units. Specifically, Student Behavior and Life are the weakest in terms of implementation of the self-assessment report. Results also indicate that under UNESCO HK's Evaluation Framework, for the factor "School Management", a criterion to be known as "School Publicity and Community" should be added to demonstrate that schools attending community activities or conferences can enhance the school's ESD

capability. More importantly, a sixth factor to be known as "Others" is added under which are two criteria to be named "ESD Development Achievement" and "Future Plan". Both criteria help review the past and develop the future implementation of ESD.

Figure 5: Modified Evaluation of ESD Quality Criteria

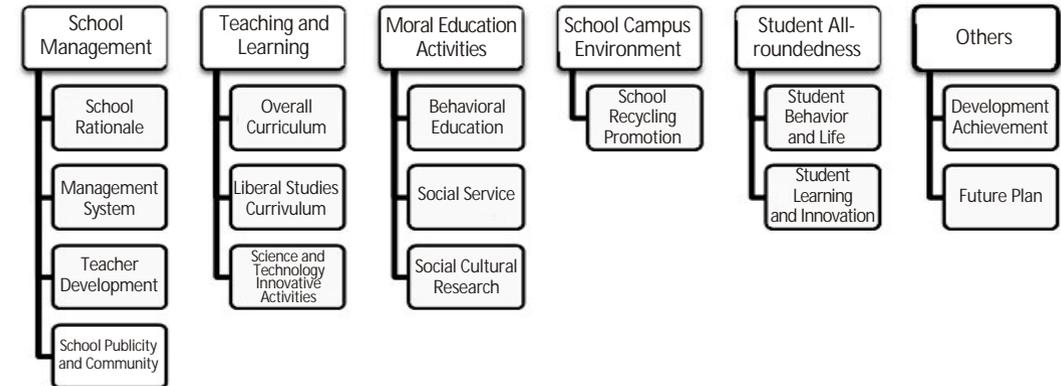


Table 3 shows that the 339 text units are organized into six broad factors, according to UNESCO HK's Evaluation Framework and the characteristics of the implementation. The dominant factors are "Moral education activities", "School campus environment" and "Others", which account for 91.8%. By contrast, the weakest factors were "Student All-roundedness", "Teaching and learning" and "School management", which account for 8.2% of total text units. Specifically, "Student All-roundedness" constitutes 0%. In regard to the criteria of Teacher Development, Overall Curriculum, Science and Technology Innovative Activities, they account for less than 1% of the institution's website implementation of ESD.

Table 3: Factors of Implementation of ESD from Institution's Websites

Factors	Categories	Text Units for each School							Total	%
		1	2	3	4	5	6	7		
School Management	a. School Rationale	0	2	2	2	1	4	0	11	3.2
	b. Management System	1	0	4	3	0	1	0	9	2.7
	c. Teacher Development	0	0	2	0	0	0	1	2	0.6
	d. School Publicity and Community	0	0	0	3	0	1	3	4	1.2
Teaching and learning	a. Overall Curriculum	0	0	1	0	0	1	0	2	0.6
	b. Liberal Studies Curriculum	1	0	6	0	0	0	0	7	2.1
	c. Science and Technology Innovative Activities	1	0	1	1	0	0	1	3	0.9
Moral education activities	a. Behavioural Education	3	1	26	5	0	2	8	82	24.2
	b. Social Service	6	27	23	11	6	1	1	65	19.2
	c. Social Cultural Research	2	1	8	5	28	1		45	13.3
School campus environment	a. School Recycling Promotion	8	3	23	11	0	0	12	45	13.3
Student All-roundedness	a. Student Behaviour and Life	0	0	0	0	0	0	0	0	0.0
	b. Student Learning and Innovation	0	0	0	0	0	0	0	0	0.0
Others	a. Development Achievement	18	5	28	7	0	6	15	64	18.9
	b. Future Plan	0	0	0	0	0	0	0	0	0.0
Total									339	100

Discussion and Conclusion

This study presents an overall review of the education for sustainable development in Experimental Schools in Hong Kong. One of the core issues is that Student Learning and Innovation and Teacher Development of ESD in Hong Kong are found to be weak in implementation, according to the results from 7 ESD Experimental Schools. First, for Student Learning and Innovation in Hong Kong, students did not show concern for willingness to solve problems in national or international sustainable development, but had a better understanding of innovative activities in science and technology. The passive learning style in Hong Kong is a rather generic issue, as Kennedy (2002) pointed out that Chinese culture may have influenced Chinese learning styles in Hong Kong. In Chinese families, children are taught to have respect for age and rank for parents, elders and ancestors. Proper respect is also given to teachers whose wisdom and knowledge are taken for granted and teachers are not supposed to be questioned. Hong Kong teachers seldom seek to encourage students to do positive appraisals of their performance. Hong Kong students are usually characterized as hard-working and diligent, but lacking in creativity and originality. Even though Chinese students do better than Western students in mathematics and sciences, they are not known for their creativity and original thinking (Salili, 1996). Second, Teacher Development facilitates a stable teaching team to promote ESD, and gives suitable training to other teachers whenever needed, and raises resources issues for individual institution. According to the Canadian Chamber of Commerce in Hong Kong (2004), they tried to measure the sustainable development progress of Hong Kong in terms of key economic, environmental and social priorities. The educational system is ranked the most important factor for Hong Kong's sustainable development. It is also confirmed that innovative teaching methods and comprehensive personal development are the important issues within education that should be improved in Hong Kong.

From the perspectives of UNESCO HK, the recommendation is that it should enhance the Evaluation Framework of ESD in Hong Kong, e.g., one criterion that should be added to the School Management factor is School Publicity and Community. The finding in this study reveals that people are not only looking to the institutions for action, but also in the business sector, the community, family and other groups within the society. It is also revealed that people are starting to move away from what is important to them to what is important for the community as a whole. The results also show that there is strong support from different sectors of the Hong Kong society to work together to improve quality of life. As regards the five factors under consideration, one other factor known as "Others" should be added, under which are two criteria, namely (a) Development Achievement and (b) Future Plan. It should be noted that Development Achievement will help ESD development in schools. Opportunities include the launching of the Sustainable Development School Award Programme organized by the Council for Sustainable Development, as it helps to promote the concept of sustainable development (SD) and practices in schools and the community.

In conclusion, this study identifies education as the highest priority for sustainable development in Hong Kong. A clear consensus is not identified for any single aspect, but a number of areas within education have been identified that requires improvement. Sterling (1997) reiterated that the educational system needs wholesale reorientation if ESD is to succeed. This is possible when we understand how the issues are connected and impacted each other and should be seen as an advantage rather than a problem. By working on one issue in one area, it is often possible to show connections with and make a positive impact on other connected issues — to promote positive synergies intentionally. In the context of Hong Kong, consideration should be given to applying the principles of sustainable development to all recent work, and across all sectors and disciplines. Chinese culture may have influenced Chinese learning styles in Hong Kong. UNESCO HK should strengthen the linkage between the ESD in Mainland China and Hong Kong regarding sustainable development practice. For example, ecotourism concepts should be introduced to students when they travel overseas. The features that made Hong Kong unique should be measured and tested for sustainable development performance. In that way, both sustainability and competitiveness for Education for Sustainable Development (ESD) could be achieved in Hong Kong, albeit not necessarily in a genuine green society.

Limitation and Future Research

This study has a number of limitations that deserve further investigation. First, the quantitative analysis is based on data from 7 institutions. The restricted data are weakening the results because of the small sample bias. Further research should try to collect data from additional and different sources. Further research efforts may probe deeper into the panel of judges, probably with the aid of in-depth interviews in order to enhance the evaluation framework. Second, due to the limited data, we combined the data for secondary school and primary schools. Since sustainable developments in primary and secondary school may be different, future research should divide the sample into two groups. Third, this study is qualitative in nature and is case specific. Further results can be obtained with the aid of quantitative methods, such as cross sectional and time series analyses. This may lead to a more comprehensive evaluation system to assess the performance of Hong Kong and Mainland China. Fourth, whilst this research employs data from the institutions and websites, additional sources from senior management and teachers should be sought. Finally, this research focuses on the Hong Kong and Mainland China perspective. In the future, it should further include the Western experiences, approaches adopted, outcome achieved, facilitating factors, and institutional constraints to understand the education for sustainable development practice in Hong Kong.

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