

Education for Sustainable Development through Environmental Education in Primary and Secondary Schools in Korea

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ABSTRACT

Environmental education in Korea started in early 1980's and is carried out mostly in two forms, formal environmental education and informal/non-formal environmental education. The importance of environmental education in these two areas has been emphasized starting in the late 1990's, and accordingly, the amount of it has largely increased. In this presentation, an overview of environmental education in primary and secondary schools in Korea is overviewed, which was followed by 4 quality cases of education for sustainable development through environmental education. Based on these introduction and exploration, issues were discussed in relation with implementation of environmental education and education for sustainable development in schools in Korea and the Asia-Pacific region.

Key Words: Environmental Education, Education for Sustainable Development, Primary and Secondary Schools, Quality Cases.

Introduction

Environmental education in Korea started in early 1980's when environmental pollution arose as a result of rapid economic development and the awareness and demand for high quality of living and environment increased. Korean environmental education is carried out mostly in two forms, as in other countries: formal environmental education and informal/non-formal environmental education. The importance of environmental education in these two areas has been emphasized starting in the late 1990's, and accordingly, the amount of it has largely increased.

In schools, environmental curriculum focuses on enabling students to behave at home and in the society based on environmental knowledge that they have newly acquired. The course on environment is taught in middle and high schools as one of the formal curriculums, and various environmental education programs are provided through extracurricular activities and discretionary activities. In social level, NGOs, Local Agenda21, public agencies, local governments, and national government conduct different environmental education programs, for youth and various adult groups such as homemakers, military personnel, and environment guards, which has been established as one of the major areas of social education.

However, with a recent emphasis on education for sustainable development worldwide, and the start of UN Decade of Education for Sustainable Development (UNESCO, 2005), we need changes in the qualitative aspects of environmental education. In this presentation, I would like to give you an overview of environmental education in primary and secondary schools in Korea, and then to explore some quality cases of education for sustainable development through environmental education, which is in an attempt for providing implications for environmental education and/or education for sustainable development in Korea and the Asia-Pacific region.

Environmental Education in Elementary and Secondary Schools

Development of Environmental Education in Korean Schools

Educational activities in schools can be divided between curricular activities including subject-based education, extracurricular activities and discretionary activities, and other educational activities. In Korea, textbook development and school education is done based on the national curriculum, and thus, environmental education in elementary and secondary schools are closely related to the curriculum. In other words, if it is not mentioned or emphasized in the curriculum in any way, it would be difficult for environmental education to be conducted in schools.

Environmental education was first mentioned in the guideline of the introduction in the 4th national curriculum, which stipulated that "In every aspect of school education, sufficient care shall be taken on health and hygiene, health promotion, enhancement of physical strength and safety, and education on nature preservation, environmental pollution and population is to be effectively taken.". In the guideline provided with the introduction of the 5th national curriculum, environmental education was further emphasized as compared with the simple reference made in the 4th curriculum, in the statement, "National moral education, unification and defense education, economic education, safety education, environmental education, career education, population education, and sex education should be conducted throughout all aspects of curriculum, and special emphasis should be made in relevant courses." (Nam, 1995). As a result, contents on environmental pollution or environmental education came to be included in various courses.

During the enactment of the 6th national curriculum, environmental education became institutionalized in the school educational system, providing a significant turning point in the history of EE in Korea. In elementary schools, "discretionary time" similar to the integrated period of learning in Japan was introduced, enabling environmental education to be conducted in subject-based activities, extracurricular activities and discretionary time. In the 7th national curriculum, these courses have all been retained, and the course in environmental science in high schools has been renamed to "Ecology and Environment."

Status of Environmental Education in School Curriculum

As of January of 2006, with school education being conducted under the 7th national curriculum, environmental education in elementary school is conducted in relation to subjects such as 'Wise Life,' 'Ethics,' 'Social Studies,' and 'Science,' as well as during discretionary activities (1st~6th grades: 60-68 hours per year for each grade). In addition, in kindergarten, integrated education is carried out in five areas such as language, health, expression, inquiry, and social life, and EE is done with the focus on actual practice in four of these fields excluding language.

In middle schools, environmental education is conducted in various courses, including the independent subject of 'Environment'. As explained above, in middle schools, 'Environment' was introduced as an independent selective subject in 1995, when the 6th national curriculum was launched, and school principals are free to select the subject, within the class extent of 34 to 102 hours annually. As of the end of October 2004, 368 (12.9%) out of all 2,858 middle schools around the country selected 'Environment' among their subjects (Table 1).

Environmental education in high schools is also carried out in various courses, including the independent subject of "Ecology and Environment." The first independent course in this field was introduced in 1996 under "Ecological Science," as provided in the 6th national curriculum, leaving it to the discretion of principals to choose it among subjects. Under the 7th national curriculum which has been implemented since 2002¹, selective subjects in high schools were divided into general selective subjects and advanced selective subjects. "Ecology and Environment," which was renamed from 'Ecological Science' is included among general selective subjects that can be primarily

¹ The 7th national curriculum started in 2001 for middle schools, and in 2002 for high schools.

Table 1. Number of Schools which Selected 'Environment' Subjects

	Middle School		High School	
	2003	2004	2003	2004
Seoul	15	14	24	43
Busan	158	128	10	16
Daegu	27	25	24	29
Incheon	4	8	25	21
Kwangju	6	8	15	15
Daejon	14	9	22	25
Ulsan	3	2	12	16
Kyonggi	53	29	312	159
Kangwon	6	7	17	17
Chungbuk	76	67	28	28
Chungnam	13	8	38	39
Chonbuk	7	8	42	53
Chonnam	18	23	35	34
Kyeongbuk	10	10	32	36
Kyeongnam	18	17	27	25
Total	433	368**	672	565***

* Source: Ministry of Environment, 2005

** Total N= 2858, Ratio = 368/2858(12.9%)

*** Total N= 2071, Ratio = 565/2071(27.3%)

selected, broadening the subject's opportunity to be chosen. Among 2,071 high schools in the country, 565 (27.3%) were taking "Ecology and Environment" as one of their subjects, as of the end of October 2004.

The Ministry of Education and Human Resources Development authorizes the middle school textbooks on "Environment." The city and provincial offices of education approve the high school textbooks for "Ecology and Environment." Starting in 2001 school year, among four kinds of textbooks submitted for middle school textbook on environment, three textbooks that received the authorization of the Ministry of Education and HRD are being used (Choi, 2001).

In addition to the independent subject of environment, environment-related topics are being taught in other subjects including natural science, social science, ethics, and technology and home economics. In the natural science curriculum, the focus is put on the causes and countermeasures on environmental pollution, and in social science, the emphasis is given on the investigation of causes and solutions for environmental problem as a social problem. Also in subjects such as music and art, numerous educational activities are using environment as a topic. In addition, concerning extracurricular programs, various experiential activities related to the environment are carried out, in environment investigation clubs, bird watching clubs, native flowers cultivating clubs, and field trip clubs.

Education for Sustainable Development in Schools

As seen in the above, there are opportunities for getting environmental education in Korean elementary and secondary schools. However, environmental education in these schools remains at the level of ecological sensitivity or understanding of environment, rather than being expanded to sustainable development or sustainability. This fact has been reported in the recent study made by Lee *et al.* (2005a). In the process of developing national strategy for education for sustainable development for Korea, they conducted research on the education for sustainable development practices in Korean schools, and the teachers' awareness of sustainable development and education

for sustainable development. As a result, they found that teachers are not well aware of sustainable development and/or education for sustainable development in school educational system. For example, education for sustainable development in schools can be carried out through subject-based activities, extracurricular activities, discretionary activities, etc.; and topics related to sustainable development such as human rights, peace, unification and environment are being suggested and taught as pan-curricular areas. However, teachings in these areas only focused on understanding and broader recognition of each issue and its background knowledge, and there is no emphasis on its linkage to the sustainable development of society and community, or the characteristics of education for sustainable development such as group efforts, holistic approach, critical thinking and problem solving.

Such a phenomenon is closely related to the awareness on sustainable development or education for sustainable development of teachers who conduct the education. In their research on teachers' awareness, Lee *et al.* (2005b) found that 68.2% (426) among 625 teachers surveyed had not heard the term 'sustainable development', and 21.1% defined it as "sustained economic development and increase of income," identifying sustainable development with economic development. Also, 40% of the teachers responded that they had experienced teaching topics related to sustainable development or sustainability including natural resources, gender equity, health, human rights, and climate changes, without proper knowledge of sustainable development or education for sustainable development. 64.2% of them answered that they dealt with them during regular classes. As the biggest obstacle to education for sustainable development, teachers pointed to lack of profession (50.5%), and suggested necessity of teacher training (30.2%), inclusion of sustainable development and education for sustainable development topics in the curriculum (29.2%), and the necessity of development and distribution of educational materials (25.5%).

Apart from the regular curriculum, education for sustainable development can be conducted by the efforts of the school as a whole, through a whole-school project, decision making in school or environmental management. For example, the environmental conservation model school initiatives being carried out since 1985 under the support of the Ministry of Environment, the school forest movement, UNESCO Associated Schools Project schools, and alternative schools present significant possibility for ESD because they aim at sustainable development of the schools, through the active participation of those who belong to the schools, quality learning and teaching, holistic approach, partnership with local community, etc. Therefore, it is necessary to discover quality cases among these examples and promote and spread them widely.

Quality Cases: ESD through EE

The following provides a few quality examples of how environmental education is being implemented in Korea as well as how they help in linking with ESD and contribute to the enhancement of sustainability or sustainable development of the school itself or the local community.

Dreaming a Sustainable School

Ms Lee, a teacher teaching "Ecology and Environment" in Kwonseon High School in Suwon, started a team project to examine the problems of the school and how to improve them in 2004. The goal of that project was to enhance students' decision-making ability related to environment. The project was conducted by first examining what environmental problems the school has, establishing goals for making the school eco-friendly, making a list of what can be done, and dreaming of what it will be like after the goals are realized and sharing with one another. Students' dreaming included constructing an ecological pond where a number of different creatures live, efficient usage of space, recycling program, a wider and more comfortable school store, school bag sharing project, and rest room project, and they enjoyed the process of carrying out the project and sharing of results. In this project, what the students' dreamed were not realized, but they actually came to be more

interested in school environment and its quality, which could enhance their skills for issue investigation and competency for decision making.

Investigating the Local Mountain Area

Students at Kwanyang High School in Anyang were instructed to investigate Mt. Gwanak nearby in the class of their teacher Ms. Seo. Five to six students made up one team, and each team selected one theme for investigation and examination of it using various methods. Themes and activities included investigation of trees in detail, survey of people's purposes of coming to the mountain, research on the quality of water from the mineral water spring in Mt. Gwanak, survey of participant reaction after conducting environmental education program on the mountain climbers, and investigation of wild flowers. During investigation activities, students were given assignments including development of investigation plans, taking photographs of activity results and presentation of them, and preparation of reports, and they had time of presenting them in front of others. As a result of the investigation, the students' issue investigation and problem solving skills were enhanced, and after those activities, they have visited and took walks around Mt. Gwanak area more often than they had done before.

Eco-Craft Program in Suwon Agricultural High School in Suwon

The Agricultural Life Science High School in Suwon is a technical school focusing on the cultivation of farm products and agriculture, in comparison to general high schools in which the goal is university entrance. Ms. Hwang, a teacher in this school, conducts eco-craft program with the students. First, they grow various herbs that become ingredients of cosmetics or bath products. Then they use them to make cosmetics or bath products such as skin lotion, lotion, soap, shampoo, and spa ball. Or they use the plants they cultivated as natural dyes for clothes and handkerchiefs. Through these interesting experiences, students gained deep understanding of the plant growing process and usage, while also enhancing their awareness of the environmental problems and their potential roles for solving these problems. In addition, these experiences help them in getting jobs or putting up their own businesses after graduation.

Whole-School Approaches through the School forest Movement: Learning Community in Incheon Kuwolseo Elementary School

Schoolforest movement in Korea started in 1991 with support for 10 model schools by Forest for Life, and now there are as many as 300 schoolforest model schools nationwide, with the Ministry of Education and Human Resources Development and local municipalities including Seoul City and Gyeonggi Province maintaining similar programs. The Guwolseo Elementary School in Incheon provides a quality example of students, teachers, local residents, environmental organizations, and research institutes cooperating to grow forest at the school and improve curriculum to become eco-friendly.

In this school, Mr. Oh, a teacher, formed a learning community immediately after deciding to grow a schoolforest, taking the principal, head teacher and other teachers to arboretums and to see good examples and learn about trees and forests. After that, students, teachers and local residents have been actively participating to enrich regular classes and discretionary activities with topics related to improved environmental resources. In the newly formed forest, there are 109 different species of plants as of 2005, and birds are frequently seen.

Also, various activities including vegetable cultivation and black-faced spoonbill watching are carried out under partnerships with companies such as Pulmuwon and environmental organization including the Korean Federation for Environmental Movement. There are numerous activities going on under the themes of forest, grass, swamp, and vegetable field which include watching of pond creatures, sharing of fruits and vegetables, growing and harvesting of grains such as rice and indian melle. Through these activities being conducted closely linked to school curriculum, school children

living in a big city are discovering how much fun and exciting it is to live along with nature.

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References

- Choi, Don-Hyung. (2000). Subject Based Environmental Education in Schools of Korea. Proceedings of the Korean-Australian Seminar on Subject Based Environmental Education. Aug. 25. Seoul, Korea. 113-134.
- Nam, Sang-Joon (1995). Environmental Education. Dae-hak sa. Seoul.
- Lee, Sun-Kyung, Jae-Young Lee, Yoo-Jin Lee, Sun-Cheol Lee, Kyoung-Seok Min, Suk-Kyung Shim (2005) The National Strategy Development for UN Decade of Education for Sustainable Development. Presidential Commission on Sustainable Development.
- Lee, Sun-Kyung, Kim, Nam-Soo & Lee, Jae-Young (2005b) The Awareness of Korean Teachers and Students towards Sustainable Development and Education for Sustainable Development. Presented at the 3rd World Environmental Education Congress. 2-6 October, Torino.
- Lee, Sun-Kyung. (2000). Learning·Teaching and Evaluation of Environmental Education in Schools of Korea. Presented in the Korean-Australian Seminar on Subject Based Environmental Education. Aug. 25. Seoul, Korea. 163-189.
- The Ministry of Environment. 2005. Promoting Education, Public awareness and Training. in National Action Plan for Agenda 21. The Ministry of Environment. On line <http://www.moenv.go.kr/english/newindex.html>
- Ministry of Environment (2005). Official government report. Ministry of Environment.
- UNESCO (2005) United Nations Decade of Education for Sustainable Development 2005-1014: Draft International Implementation Scheme, UNESCO, Paris.