

The Environmental Education Strategy for the Practical Arts Subject in S. Korea



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Abstract

The purpose of this study was to find the strategies to execute the environmental education through the Practical Arts subject in elementary school. This study was conducted by the review of literature, the content analysis, and the discussions with panels of judges composed of experts in the environmental education related fields.

The major conclusions of this study was as follows:

1. The Practical Arts subject is appropriate to conduct environmental education.
2. The Practical Arts subject set the basis to start environmental education in Korea.
3. The 'Life Resource and Environment Management' area in the Practical Arts subject is very suitable to widely conduct environmental education.

The followings were recommended based on the findings and the conclusions of the study. First, it is recommended for the Practical Arts subject teachers to conduct environmental education in various ways such as introducing environment-related jobs, daily work related to preventing environmental pollution, and so on, when teachers are teaching the 'Understanding Family and Work' area in the Practical Arts subject. Second, the environment contents should be included in all sub chapters in the 'Living Skill' area in the Practical Arts subject. Third, 'Hands-on' education or 'experience-based teaching skill' should be executed in teaching the Practical Arts subject. Forth, elementary school teachers should find a way to conduct environmental education in a way of content integration between subjects so that teachers can save some time to perform experience-based teaching which takes more time than other teaching skills.

The scientific technology and the economic advancement not only have brought material prosperity to human but also have endangered the life of human beings by destroying the environment. In Korea, since 1970, the accelerated industrial development has brought an enormous amount of environmental damage such as air, water, and soil pollution, and so on. This environmental destruction made people try to protect and to recover the environment.

There are several approaches in many areas to protect the environment such as developing the environmental purifying technology in science areas, establishing the environmental laws, provisions, and regulations by the legal system, and establishing the least damaging economic development policy in administration areas, and so forth. These approaches for environment protection are, however, symptomatic and short-term solutions for the environmental problems. On the other hand, there is a new and common opinion that the educational approach is the fundamental solution for environmental problems (Seo, 1998; Shin, 1991). There are several reasons that show the educational approach is the one.

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The basic idea of the educational approach is that people need to change their conceptions toward the environment so that they cultivate their practicing ability on environmental problems. It is also necessary for people to be awakened to the environment and to take part to achieve the goal of continuous environmental development. Furthermore, ignorance of human beings toward the environment is the fundamental cause of environmental destruction from the start. Therefore, the educational approach is not only fundamental but also effective for solutions to prevent and to overcome the environmental problems (Ghang, 1995).

There are two major reasons to attach more importance to school environmental education. One is that the environmental education in the Korean school system is required so that it is more likely to be effective with students. The second reason is that the elementary school years are the time for students forming environmental concepts. That is, by educating students on the appropriate environmental concepts, they are able to contribute to solve the problem of the present environmental destruction and to prevent future environmental problems.

To educate the younger students environmental education can bring better results because environmental education does not give students knowledge or a simple skill related to environment but does give students the right values and attitudes toward the environment. Therefore, it is more important to educate elementary school students on the environmental subjects.

In Korea, there were environmental contents in the Practical Arts subject during the first national curriculum term (1965-1962) and that was even before the environmental education was dealt with as an important subject. Furthermore, environmental education becomes one of three major areas in the Practical Arts subject in the 7th national curriculum. That is, the Practical Arts subject has played an important role in the elementary education in Korea.

However, there is not much research on how the Practical Arts subject has dealt with the environmental content, and what kind of environmental content should be put into the Practical Arts subject based on the characteristics of the Practical Arts subject. Therefore, it is needed to conduct the research on analyzing the environmental contents in the Practical Arts subject in the 7th national curriculum and on suggesting better way of organizing and teaching the environmental contents.

Purpose of the Study

The purpose of this study was to find the strategies to execute the environmental education through the Practical Arts subject in elementary school. The specific objectives for this study were as follows:

1. Investigate the background of environmental education in the elementary school.
2. Analyze the contents of the environmental education in the Practical Arts subject in the 7th national curriculum.
3. Suggest strategies for developing the contents related to the environmental education in the Practical Arts subject.

Methodology

The research project was a qualitative study. This study was conducted by the review of literature, the content analysis, and the discussions with panels of judges composed of experts in the environmental education related fields.

Review of literature

The literature related to environmental education was reviewed to investigate the basis of discussion on the elementary environmental education and to find the categories to analyze the contents of elementary environmental education.

Content analysis

A content analysis was utilized to analyze the amount of the environment contents in the Practical Arts subject. The subjects of the content analysis were all part of the Practical Arts subject from the 1st national curriculum to the 7th national curriculum.

To analyze the environment contents in the Practical Arts subject, the content analysis framework was developed (Table 1). A total of 9 analysis categories in the environmental education contents was selected based on previous research (Shin, 1977; Shin, 1987; Nam, 1995; Lee & others, 1997). The selected 9 analysis categories were 'Natural Environment (NE)', 'Artificial Environment (AE)', 'Population (P)', 'Industrialization and Capitalization (IC)', 'Resource (R)', 'Environmental Pollution (EP)', 'Environment Conservation (EC)', 'Environment Sanitation (ES)', and 'Environmental Ethics (EE)'.

In the national curriculum, there are characteristics, objectives, contents, teaching methodologies, and evaluation methods for the Practical Arts subject. Furthermore, all the elementary school teachers must use and follow the national curriculum guide. Analyzing the national curriculum is the most proper method to analyze the contents related to environmental education in the Practical Arts subject. Therefore the environmental education contents in the Practical Arts subject were analyzed by the 9 analysis categories.

Panel of judges

A panel of judges was utilized to verify the quality and the propriety of the content analysis framework. Also, the panel of judges verified the appropriateness of the environmental education strategies in the Practical Arts subject.

History of the Environmental Education in the Elementary Education in Korea

History of the environmental education in the elementary education

It was the 4th national curriculum (1981-1988) when environmental education was considered in earnest even though there was little content of environmental education before the 4th national curriculum. In the 4th national curriculum, the objective of environmental education was provided as 'nature conservation, environment pollution, and population problems must be taught properly and efficiently'. The contents of environmental education, also, were suggested to be taught in various subjects in elementary schools.

The environment conservation model school system, which was coordinated by the Ministry of Education and the Ministry of Environment together in 1985, pulled the trigger to make environmental education alive. There were 4 environment conservation model elementary schools that received enormous amounts of financial aid from the Ministry of Education and the Ministry of Environment and conducted the model environmental education for two years. The environment conservation model schools were selected every two years and the number of the environment conservation model schools were getting higher and higher. From

1993, the environment conservation model school system is being operated for preschool, elementary school, middle school, and high school (Ministry of Environment, 1998).

In the 5th national curriculum (1989-1995), the objective of environmental education was prescribed as ‘environmental education must be conducted in most educational activities, and environmental education activities must be enforced especially in environment related subjects such as Ethics, Social Science, Science, and Practical Arts subjects’. During the 5th national curriculum term, the Ministry of Education performed the environmental education related tasks with the assistance of the Korean Education Development Institution, which developed a great deal of the environmental education materials. With the support of the Ministry of Education, the Korean Environmental Education Association was founded. That is, the major interested people in environmental education changed from individuals such as government officers, schoolteachers, etc. to the environmental experts such as professors, professional researchers, and administrators. All of the interested parties came to work together (Ministry of Environment, 1996). However, the contents of environmental education didn’t meet the satisfactory level in the 5th national curriculum even though the environmental education contents were much better than those in the 4th national curriculum (Choi, 1991).

There was a big progression in environmental education in the 6th national curriculum. In the 6th national curriculum (1996-2001), the Ministry of Education made the ‘Environment’ subject separate as a selective course for the secondary education system, which means environmental education was conducted in many courses and the ‘Environment’ subject was added as an elective course. For elementary education, there was no elective course for environmental education. Instead of a separate course, the Ministry of Education developed a ‘School Discretion Course’ for 3rd-6th grades, 34 hours in a year, and elementary school teachers would be able to select the environmental education subjects to teach students. However, the environmental educational subjects were not required for the ‘School Discretion Course’.

In the ‘Guidance for Organizing and Conducting Curriculum’ developed by the Ministry of Education, there were several directions for environmental education in the 7th national curriculum. First, the environmental education must be mainly conducted in the ‘School Discretion Course’ and environmental education related courses. Second, the environmental education must be integrated with the ‘School Discretion Course’, environmental education related courses, extra-curricula activities, and school activities. Third, the environmental education must be conducted in relation with community and home. This was the first time for the national curriculum to give very specific directions for integrating environmental education with all kinds of school activities (Ministry of Education, 1998).

The Practical Arts subject and environmental education

In Practical Arts education, the environmental education contents were dealt with in the 1st national curriculum while environmental education was considered in earnest in the 4th national curriculum for all of the educational system. Especially in the 7th national curriculum, one of the three major areas (‘Understanding Family and Work’, ‘Practical Arts’, and ‘Managing Life Resources and Environment’) is all environment related.

Three chapters of the Practical Arts subject are offered for the ‘Managing Life Resources and Environment’ area. The ‘Living Environment Arrangement’ chapter is provided for the 5th grade with two sub-chapters of ‘Arranging Desk and Closet’ and ‘Cleaning and Wastes Management’. There are two chapters

related to 'Managing Life Resources and Environment' area. One is the 'Utilizing Resources' chapter, that consists of 'Utilizing Life Resources and Saving', 'Recycling House Supplies', and 'Investigating the Environmental Problems and Practicing the Solutions'. The other one is the 'Fixing the Home Interior', that consists of 'Decorating Indoor Environment', and 'Planting, Growing, and Pruning Trees'.

Furthermore, there are more environmental education related contents in the Practical Arts subject. That is, Practical Arts education has played a very important role for environmental education in elementary education.

Practical Arts education is appropriate to conduct environmental education due to several reasons of the teaching methodology and the way of approaching subject contents. Basically, the contents of environmental education should be related to the daily life environment and should be approached in an integrated way. Also, environmental education should be conducted in 'learning by doing' based on actual experience and should not be in instructing knowledge related to the environment. These reasons have very similar points to the 3 major characteristics of the Practical Arts subject, including 'life subject', 'experience subject', and 'integrated subject'.

The following specify what the commonness between the characteristics of the Practical Arts subject and the environmental education should be.

First, Practical Arts education and environmental education both set importance on 'life experience'. In elementary education, environmental education should be related to children's experience of perceiving social and natural phenomena, which means the environmental education should be connected directly to children's daily life experience. That is why environmental education in elementary education should be focused on children's lives, not on transferring the environmental knowledge (Kim & Nam, 1993). Remember that the secondary education system already takes a part in transferring the environmental knowledge.

The Practical Arts subject puts importance on the problem-solving attitude that children should be able to find the environmental problems and to try to solve the problems in real life. Therefore, the results of environmental education by the Practical Arts subject do not remain in the classroom situation, but remain in children's life habits. Therefore, planning and executing the 'wild flower exhibition' or culturing the 'indoor garden in the classroom' or 'outdoor garden at school' would be a good way for students to get an environmental education.

Second, both of Practical Arts education and the environmental education attach much greater importance on practice than knowledge or attitude. The environmental education not only lets students perceive the seriousness of environmental problems, but finally makes students solve those problems in real life, so that students get into habit of improving the environmental situation. Thus, it would be more effective for environmental education to adapt the teaching-learning methods which are utilized in the Practical Arts education including 'learning by doing method', 'hands-on practice', and so on. This would be another reason that the Practical Arts subject is the proper subject in which to conduct environmental education.

Third, the Practical Arts education and environmental education are in common in that they both are developed and practiced based on integrated and multi-originated subjects. Ideally, both forms of education must implement their subject in a certain scholastic area, which is integrated in many and different scholastic areas, so that students should be able to apply what they learn in their lives.

Based on above theories, the Practical Arts subject fulfills and sets basic standards for executing

environmental education. Therefore, it is needed for us to provide schemes in the Practical Arts subject so that environmental education is performed properly in the Practical Arts subject.

The Environmental Contents in the Practical Arts Subject

The environmental contents in the Practical Arts subject by the national curriculum term

As a result of the content analysis by each national curriculum term, 'Resource', 'Environment Conservation', and 'Environmental Sanitation' were major topics related to environmental education in the Practical Arts subject in last 50 years of elementary education in Korea (Table 1).

In the 1st national curriculum, the Practical Arts subject consisted of 10 major areas. Among the 10 areas, environmental education was dealt with in 'Decoration', and 'Sanitation and Nurturing' areas. The 'Cultivation' and 'Sewing and Knitting' areas also were related to environmental education. The major contents of the environmental education in the 1st national curriculum were 'Environment Conservation (EC)' and 'Environmental Sanitation (ES)'.

There were 7 major areas in the Practical Arts subject in the 2nd national curriculum. 'Resource (R)' and 'EC' areas were dealt with in 'Cultivation', 'Utensil Manufacturing', 'Upgrading Living', and 'Living Management Education' areas. There were 9 areas in the Practical Arts subject in the 3rd national curriculum including 'Cultivation', 'House and Environment Sanitation', and 'Cooking' which were related to the environmental education such as 'ES' and 'EC'.

'Living Plan and Management', 'Living Skills', 'Consumption and Saving', and 'Understanding Work and Job' were 4 major areas for the Practical Arts subject in the 4th and 5th national curriculums. The environmental education contents in the Practical Arts subject were 'R', 'EC', and 'ES' which were dealt with in 'Living Plan and Management', 'Living Skills', and the 'Consumption and Saving' area.

In the 6th national curriculum, the Practical Arts subject was composed of the 'Handling', 'Making', 'Raising and Cultivating', and 'Arranging' areas. The environmental education contents such as 'R' and 'EC' were dealt with in 'Raising and Cultivating', and 'Arranging' areas.

There are 3 areas of 'Understanding Family and Work', 'Living Skills', and 'Life Resource and Environment Management' in the Practical Arts subject in the 7th national curriculum. This is the first time for the Practical Arts subject to have the environmental area separately, which means the environmental education was strengthened in the Practical Arts subject. The environmental education contents are conducted under the title of 'Arranging Living Environment', 'Utilizing Resources', and 'Fixing the Home Interior', which are dealing with 'R' and 'EC' in the Practical Arts subject. In the 7th national curriculum, the Practical Arts subject is partially dealing with 'ES', too.

Table 1. Environmental Contents in Practical Arts Subject in National Curriculum

NC*	G**	Contents	NE	AE	P	IC	R	EP	EC	ES	EE
1 st	4	Cleaning and Arrangement in the Classroom Gardening Planting Neat Dressing Exterminating Parasite Infectious Disease Mouth Sanitation Washing & Bathing							o o o	o o o o o	
	5	Managing and Cleaning the School Building Wall Papering Planting and Forest Management Decorating Inside of School Environment First Aid Treatment Sterilization							o o o o	o o	
	6	Decorating Outside of School Environment Nursing Caring Children							o	o o	
2 nd	4	Recycling Planning and Managing Daily Life					o o				
	5	Soil Conservation and Pruning Repairing and Managing Living Goods					o		o		
	6	Decorating Living Goods Recycling					o		o		
3 rd	4	Making a Flower Garden Purposes of House Cleaning and Management Cleaning Skills Handling the Cleaning Tools Managing School Supplies					o		o o	o o o o	
	5	Planing and Pruning Hygienic Washing Dishes Environmental Hygiene and Decorating Managing Furniture Managing Family Life							o	o o o o	
	6	Decorating the Environment Environmental Hygienic Life							o	o	
4 th	4	Arranging Living Environment Fixing the Home Interior Rational Food Management Non-wasted Clothing Habits					o o		o	o	
	5	Clean and Safe Living Managing and Arranging Furniture Collecting and Safekeeping					o o			o	
	6	Environment Conservation Trimming and Utilizing Trees Recycling Old Clothes					o			o o	

*: National Curriculum, **: Grade

Table 1. Continued

NC*	G**	Contents	NE	AE	P	IC	R	EP	EC	ES	EE
5 th	4	Arranging Living Environment Fixing the Home Interior Rational Food Management Rational Clothing Habits					o o		o o		
	5	Clean and Safe Living Arranging and Managing Furniture Collecting and Safekeeping						o o		o	
	6	Environment Conservation Tree Pruning Recycling Old Clothes					o		o o		
6 th	3	Managing Clothes Arrangement with Utilizing Boxes Segregating Trash and Cleaning					o o		o o	o o	
	4	Flower Gardening with Flower Garden (Box) Selecting and Managing School Supplies					o		o		
	5	Managing Computer System					o				
	6	Decorating In- & Out-door Environment Safekeeping Food Washing and Arranging Dishes					o		o	o o	
7 th	5	Arranging Living Environment: - Arranging Desk and Closet - Disposing Trash and Cleaning					o		o	o	
	6	Utilizing Resources - Using and Saving Living Resources - Recycling Living Goods - Investigating the Environmental Problems and Practicing the Solutions Fixing the Home Interior - Decorating Indoor Environment - Planting, Growing, and Pruning Trees					o		o		
Total							22		27	26	

*: National Curriculum, **: Grade

The environmental contents in Elementary Education in the 7th national curriculum term

The results of the content analysis of environmental education contents in elementary education in the 7th national curriculum term were shown in Table 2. For the 1st grade students, 'EC', 'Natural Environment (NE)', 'Artificial Environment (AE)', 'R', and 'ES' were given much importance, while 'Population (P)', 'Industrialization and Capitalization (IC)', 'Environment Pollution (EP)', and 'Environmental Ethics (EE)' were partially conducted in the 7th national curriculum.

The environmental content of 'NE' was reflected in various subjects such as 'Social Studies', 'Science', 'Disciplined Life', and 'Intellectual Life', while 'AE' was reflected in the 'Social Studies' subject. 'P', 'EP', and 'IC' were included only in the 'Social Studies' subject, while 'R' was reflected in several subjects including 'Moral Education', 'Social Studies', 'Practical Arts', and 'Disciplined Life'.

Table 2. Environmental Contents in Elementary Ed. in the 7th National Curriculum

S*	G**	Contents	NE	AE	P	IC	R	EP	EC	ES	EE
Moral Ed.	3	Cleanness, Sanitation, Arrangement Sparing and Caring Objects Protecting Environment					o		o	o	
	4	Etiquette and Order in the Public Place									o
	5	Pursuing Common Profits									o
	6	Caring Life Preserving and Loving the Nature							o		o
Social Studies	3	Way of Living in the Community Terminal Station and Transportation Changes in the Traffic and Communication Institutes and Organization in the Community Efforts of People in the Community		O o o	o	o			o	o	
	4	Shape of our community Resource & Production Activity in Community Self-government of and Life in Community Problems and Solutions of Community Future of the Community	o	O o			o		o	o	
	5	Nature Environment and Life in Korea Efforts for Preserving Environment Life in the City Area Life in the Rural Area	o	O o		o				o	
	6	World Problems and Korea			o		o	o	o		
Science	4	Observing Animal Life			o		o	o	o		
	5	Life and Environment	o								
	6	Pleasant Environment							o		
Practical Arts	5	Arranging Living Environment					o		o	o	
	6	Utilizing Resource Decorating Indoor Environment				o		o			
Physical Ed.	3	Hygiene								o	
	4	Hygiene								o	
	5	Hygiene								o	
	6	Hygiene								o	
Disciplined Life	1	Cleaning Body Caring the Public Goods					o				
	2	Saving and Arranging Objects Cleaning Environment					o		o		
Intelligent Life	1	Looking for Animals and Plants Arranging Objects	o o						O		
	2	Observing Surroundings Observing the Animal (Plants) Growing	o o	O					O		
1st G***	1	Cleaning Body Cleaning the Room							O		o
Total			8	8	2	2	7	4	14	7	4

*: Subject, **: Grade, ***: We are the 1st Graders

The environment content of 'EC' was provided in most of all subjects. 'ES' was dealt mainly in 'Physical Education', and partially in the 'Practical Arts' subject. 'EE' was reflected in 2 subjects, 'Moral Education' and 'We are the 1st Graders'.

Conclusions, Discussions, and Recommendations

Conclusions and discussions

Based on the results of this study, the following conclusions were made:

1. The Practical Arts subject is appropriate to conduct environmental education. Environmental education in elementary education should have contents related to daily life environment, should take hands-on teaching methodology, and should be conducted in integration with other subjects. These three points for environmental education in elementary education are directly related to three major characteristics of the Practical Arts subject including the 'life subject', the 'experience subject', and the 'integrated subject'.
2. The Practical Arts subject set the basis to start environmental education in Korea. Environmental education has been conducted and focused on the Practical Arts education before other subjects started to teach environmental education (1982-). From the 1st national curriculum term (1954-1962), the environmental contents of 'Resource', 'Environment Conservation', and 'Environment Sanitation' were taught in the Practical Arts subject.
3. The 'Life Resource and Environment Management' area in the Practical Arts subject is composed of contents, which are related to environmental education except one sub chapter. Therefore, the 'Life Resource and Environment Management' area is very suitable to widely conduct environmental education.

Recommendation

1. There is no environmental content in the 'Understanding Family and Work' area in the Practical Arts subject. However, there should be environmental content included. Therefore, it is recommended for the Practical Arts subject teachers to conduct environmental education in various ways such as introducing environment-related jobs, daily work related to preventing environmental pollution, and so on, when teachers are teaching the 'Understanding Family and Work' area.
2. The environment contents should be included in all sub chapters in the 'Living Skill' area in the Practical Arts subject. Or when setting the objectives for the lesson plan for the 'Living Skill' area, teachers should include the environment-related objectives in each lesson plan.
3. 'Hands-on' education or 'experience-based teaching skill' should be executed in teaching the Practical Arts subject.
4. Some of the environmental contents in elementary education such as 'Population', 'Industrialization and Capitalization', 'Environmental Pollution', and 'Environment Ethics' are less focused while others are given much more importance in the national curriculum. That is, some of the environmental contents are overlapped in several subjects. Therefore, teachers should conduct more specified content analysis to separate each environmental content. Then, they should find a way to conduct environmental education in a way of content integration between subjects so that teachers can save some time to perform experience-based teaching which takes more time than other teaching skills.

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