

Environmetal Education through Outdoor Education

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I. Introduction

Environmental problems are mounting at an unprecedented rate in our society. The news media reported recently that fish died by hundreds of thousands in a river due to waterborne toxic wastes which were illegally discharged into a river. The large Shi-hwa lake, a reclaimed lake in tidal area on the west coast near the city of Ansan, where one of the largest industrial estates in the capital region is located, had to release its water back into the ocean because the water was so polluted by waterborne industrial wastes and municipal wastes that it could not be irrigated onto farm land. These are only some of examples to indicate how our environmental problems are increasingly serious, not only by a few industrial plant managers' illegal actions and by our negligent administrative practices in applying strict environmental laws against illegal and harmful environmental damages, but also by the irresponsible behavior of the public in general.

Often we do not realize, that it is we who are responsible for the deteriorating environment. The role of environmental education is increasingly emphasized in this sense. However, the methods and effects of envitonmental education have not been investigated: how education will help the effort to reduce environmental problems; what would be an appropriate approach; or where the emphasis should be placed.

The purpose of this paper is to advocate outdoor education as an effective approach in environmental education in Korea. There are limited alternatives to introduce effective methods for environmental education in this society, particularly in large

urban areas where there are large numbers of students in each classroom. This study emphasizes that education is the ultimate solution to the present environmental crisis. This study relates to the roles of in-school and outdoor education as options for environmental education.

Environmental Education will be effective if teachers let students understand nature by simply exposing them to the outdoors. Such an understanding will eventually lead to an attitude that is friendly towards the environment. Outdoor education needs to be expanded in school curriculums in both urban and rural areas, although there are considerable limits to application in densely populated urban areas of the country.

II. Environmental Problems and School Education

We primarily blame today's environmental problems on industrialization and urbanization. It is true that we had neglected to consider their impact on air and water pollution problems, trash, wasting of resources, and ill effects to human health. Even now, much of the priorities are given to economic developments rather than to environmental concerns. Despite recent trends of increasing awareness of problems and efforts to cope with those problems, our environment is deteriorating faster than ever. This proves that our efforts are insufficient to counteract the steady degradation. Short range measures such as social campaigns, governmental regulations, laws, fines, or other institutional regulations are not sufficient. It is important that we prepare long-range measures.

Few people understand that the environmental problems which we face today are cumulative. Although they have no immediate consequence, each individual's activities in daily life simply aggregate the problems of the environment. Our environmental problems are the result of the cumulative impact of adverse activities by a large number of people during a long period of time. Once, environmental problems were considered a problem of the industrial sector, but now it has become the problem of the entire region, nation, and even the world. An isolated effort of an individual can not solve the problems, but through cooperation among all people, regions, and even

nations, we may be able to reverse the trend. The scale of the problems are so broad in nature that the damage can not be reversed by punishing or fining a few individuals or companies. An understanding of the scale of environmental problems and the responsibilities for the solutions can be achieved only through education—this is the most important function of environmental education.

The role of environmental education is to promote awareness in five areas.¹⁾

First, we are a part of our environment. The fact that all life is interdependent with one another and with the environment is the message of environmental education. The interrelationships between man and nature is not something new; it has been the same for tens of thousand of years. In the past, however, our ancestors lived in harmony with their environment, without disturbing the delicate balance. This balance must also be emphasized.

Second, the earth has finite resources and our environment has a limited carrying capacity. Through education, it should be emphasized that abuse and unnecessary destruction of our finite resources on the earth must be avoided. Our environment also has a limited carrying capacities. It was only a few decades ago that we realized that our environment could not dilute unlimited amount of air and water pollutants produced by ever increasing number of people, urbanization, and industrialization.

Third, there is a widespread absence of personal ethical direction. Environmental education has to deal with values and value systems of our society. There is an obvious lack of individual moral direction in our society. This lack of individual morals can easily explain how people dump polluted water borne wastes or sewage into a stream. Air and water are so abundant around us that people easily abuse them. However, we already have known that fresh air and clean water are no longer free goods in our society. It is everybody's responsibility to keep our environment functional. We all must understand the consequences of human impact on the environment. We know that today's environmental problems are a matter of social and economic factors, not a lack of scientific technologies. The key issue lies in individual's values, attitudes and behavior in respect to their environment.

Environmental education is important to the long term solution by assisting people to understand the environmental problems, and by educating people to secure against adverse impact. The education must aim at assisting people to recognize the values and concepts of interdependence between man and environment and to enhance attitudes to appreciate the interrelations between man and culture, and his environment. Environmental education teaches people to have a proper attitude toward the environment and to be able to share the responsibilities of keeping the environment.

Based on the above concepts, a commonly accepted definition of the environmental education is that it is a process to develop a demographic citizen who is able to understand the interrelationships between natural and human environment; who is aware of environmental problems and management alternatives in solving those problems; and who acts responsibly in developing diverse environments that are optimal for living a quality life.²⁾

III. Environmental Behavior and Knowledge

In a survey of research on environmental education from 1971-1981, Iozzi found that 57.7% of all the studies were on the affective domain in learning, while 41.1% were on cognitive domain, and that studies in other disciplinary heavily focused on the cognitive domain rather than on affective domain.³⁾ This survey also indicates that early awareness of the environment is crucial. It is widely accepted that environmental education which aims at affective domain is an effective method in teaching positive environmental attitudes and values. However, it is clear that cognitive knowledge of the environment does not necessarily ensure one's good attitude toward the environment, although it is important knowing how to improve environmental quality.

Iozzi's study also suggests to infuse environmental education with a focus on the affective domain into existing curricula at all education levels from kindergarten, or before, if possible, through senior in highschool.⁴⁾ A balance between cognitive and affective development is required when we teach students. His

research demonstrates, however, that environmental education has to emphasize affective aspects when students are young, that is, from elementary school to junior high school. This is because it is generally accepted that important attitudes are learned and formed early. In senior high school, on the other hand, increased effort has to be placed on cognitive domain. At the same time those positive attitudes and values which were developed during the lower grades have to be regularly reinforced. A study reports that a significant portion of the development of attitudes toward environmental conservation and pollution occurs at the elementary school level, and that the environmental attitudes of eighth graders are not significantly different from those of adults.⁵⁾

IV. Historical Development of Environmental Education

In America, the earliest form of environmental concern appeared as the nature education or nature study during the 19th century. These concerns grew over inadequacies in science education in the classroom. It was emphasized that nature study, when properly handled, interprets nature, and the acquired information was retained by the students.⁶⁾ The nature study movement was popular in rural schools because of their location, but schools in urban areas remained in the classroom. Prior to 1900, conservation of natural resources was the major concern of the environment, although only a small number of people were involved. Forest management became a major subject in conservation efforts because of the widespread and often dramatic destruction of forest lands. Elementary and secondary teachers became interested in conservation education as a result of national problems in resource management. During the 1930s, however, concerns in resource conservation grew again because of resource depletion and the national economic depression. Such states as Tennessee(1921), Mississippi(1926), Wisconsin(1935), and Florida(1936) required teaching of conservation at school. Some schools distinguished good and bad conservation practices with small-scale on campus models. Other schools took students to residential camps for outdoor study. Soon, many schools found that the outdoor camp

was too expensive in both money and time to continue. As the outdoor education movement ended and as the society became more urban, fewer students had experiences in the outdoors.⁷⁾

The term environmental education appeared in formal education during the late 1960s.⁸⁾ The new term is the successor to nature study, conservation education and outdoor education. Emphases of these three earlier terms were, respectively, the natural environment, the pastoral environment, and the environment as the preferred venue for learning. What does this mean? Environmental education is considered as a successor to the earlier three terms, but it is also different from the concepts of the three. Environmental education deals largely with the interactions of science and technology with society and with emphasis on associated environmental consequences. Environmental education includes the human environment with a stress on the urban environment, while the earlier three terms are largely limited to natural and pastoral environments.

V. Outdoor Education

Historically, there has been varying views on outdoor education. Conservationists perceived outdoor education as the wise use of natural resources, recreation leaders viewed it as a means for outdoor recreational pursuits, while environmentalists saw outdoor education as a means of assisting each student to develop an attitude of personal commitment for our finite and fragile environment.⁹⁾ Simon Priest listed six points as major characteristics of outdoor education.¹⁰⁾ First, outdoor education is a method for learning. It is the best way for learning outside the classroom. Second, the process of that learning is experiential. The experiential process deals directly with native materials and life situations outside the classroom. Third, the learning in outdoor education takes place primarily in outdoor setting, although some aspect may occur indoors for learning basic concepts in preparation of materials before the trip. Fourth, experiential learning involves full use of the six senses of human body (sight, sound, taste, touch, smell, and intuition) and involves the three domains (cognitive, affective, and motoric) of learning. Students use their eyes, ears, nose and muscles in

the outdoors and learn through the process. Fifth, the learning in outdoor education is based upon interdisciplinary curriculum matter. Sixth, and the most important, students learn ecosystemic relationships as well as other relationships.

Based on the six concepts in the above, Simon Priest redefined outdoor education as an experiential process of learning by doing, which takes place primarily through exposure to the outdoors. In outdoor education, the emphasis for the subject of learning is placed on relationships, relationships concerning people and natural resources.' Students in the outdoors can study what natural processes keep us and other organisms alive, and how the natural processes are interacting themselves and with their non-living environment. Outdoor education for environmental issues has traditionally involved ecological studies, and it has been successful in understanding and respecting of life through an ecological exploration of the interdependence of all living things.

Outdoor education can effectively improve students' environmental attitudes and values. Many studies support that outdoor camping experiences result in more positive environmental attitudes. Dresner and Gill's study shows that students develop more environmentally responsible behaviors when they learn how ecosystems function and how environmental action strategies contribute to their maintenance.¹¹⁾ Summer camps are an extension of outdoor schools where students are challenged by living in the wilderness. They learn about natural processes and gain greater familiarity with nature. Evaluations of these programs indicate that students can learn environmental values and greater awareness and achieve greater knowledge of ecological systems. They develop understanding of the concepts of interdependence and learn outdoor skills with which to enjoy nature in low-impact ways.

VI. Positive Approaches in Environmental Education

Research indicates that environmental education is effective in teaching positive environmental attitudes and values. Such activity as an exploration of a woodland can be a good method to

instill positive changes in environmental attitudes and values.¹²⁾ Positive attitudinal change can be induced when students engaged in activities exploring concepts and providing knowledge about woodlands and its environmental problems. Since attitudes can be considered essentially as 'learned' responses, environmental activities and experiences have to be designed to impact specifically on the affective domain. In study of outdoor camp activity for 9-14 year-old children, the program length does appear to have an effect on developing positive environmental attitudes. Residents camp programs of five days in length seem to have had more positive effect on environmental attitude development.¹³⁾

One of the advantages of outdoor education is to provide students opportunities to appreciate nature without emphasizing such environmental problems as pollution or acid rain, or harmful wastes. The field experience can provide students positive environmental attitudes and values. When considering that environmental problems are largely caused by our adverse attitudes about the environment, environmental appreciation can be a very effective way to solve today's environmental problems. Students, particularly in lower grades, not only learn through outdoor education but interests are created by the outdoor activities. It is not necessary to tell students stories about the environment, nor about environmental problems. It is just enough to feel, sense, and smell nature. Examination of their surroundings is enough to provide students with opportunities to observe, feel, and discuss their surroundings. An outdoor education does not necessarily have to be performed in rural areas or in wilderness. Students in rural areas can take trips to a city. They can feel and compare characteristics of different environments.

It is very common that environmental education has been often promoted by focusing on what is wrong and the needed corrective measures versus the appreciation of nature approach. Such negative approaches are widely practiced even in the kindergarten in this country. Air and water pollution problems are one of the most common subjects for the education. In a recent survey of over 1,000 kindergarten teachers in Seoul, only one quarter of respondents use field activities for the environmental education.¹⁴⁾ The survey lists the garbage problem as the most frequent

teaching subject for the environmental education, followed by the water pollution, air pollution, acid rain, scarcity of energy resources, and soil pollution. It seems doubtful that children in the kindergarten really feel and understand air and water pollution problems. It is more likely that children simply know of pollution problems because they have learned those problems to be bad from their teachers, parents, or from TV.

Felt-significance is the goal of nature appreciation.¹⁵⁾ An important advantage of outdoor education is to provide students opportunities to appreciate nature. One of the reasons nature appreciation is important to environmental education is that students tend to respect the things that they appreciate. A person who appreciates nature deliberately combines knowledge and sensory techniques in order to obtain the richest experiences possible from the natural objects in the surroundings.

VII. Interdisciplinary Nature of Environmental Education

Outdoor education can be an appropriate strategy to integrate the multi-disciplinary nature of environmental education when considering the developmental problem of curriculum for environmental education. In fact, the development of environmental education is still incomplete.

Two approaches are practiced at present. One is a multi-disciplinary approach by which environmental problems are incorporated into individual disciplines. Individual teachers, programs, and schools include environmental education content, concepts in their curricula, particularly the science and social studies, but these efforts are not enough to enhance the environment education and to promote the desirable attitudes toward environmental quality.

The other approach is an interdisciplinary approach which incorporates the environmental dimension in special disciplines. Interdisciplinary approach requires a holistic view based on understanding of the relevant subject matter such as biological, geographical, and cultural elements. The understanding of interdependencies between different subject matter fields is important. Therefore, the environmental studies need a process

of integration. Outdoor education can be effectively applied for such purpose.

Under our traditional school system, there had been difficulties for the process of integrated environmental education because environmental problems were treated in schools only in individual subject field, as belonging to a kind of 'no man's land'. It was argued that, under this system, environmental studies could be accomplished only for a limited time, and that the students were not able to get a relevant understandings to grasp the complexity of man-environment relationships, or wise resource management.

The current school curricula are not organized to deal with such a complicated and multiple subject as the environmental problem. In other words, traditional curricula were not be able to deal with more than one disciplines at a time. Thus, at various times, it was included in population education, energy education, and resource management education, and so on. In a practical sense, it is difficult to deal with science and society in an unified manner in the present school system. Therefore, environment education has not established for itself an important position in school curricula in spite of its importance in nature.

A short coming in the interdisciplinary approach is that it is beyond the teacher's ability. Considering this problem, the new curriculum for the secondary school, which became effective from 1995 academic year, support the concept of environmental education as an interdisciplinary approach. The government published two separate textbooks of environmental education: one for middle school, and the other for high school. Under the new curriculum, environmental education is taught as a separate subject in both middle and high school. However, there are no immediate programs for teacher training in response to the increasingly urgent demand of many qualified teachers from the secondary schools.

VIII. Teacher Education

The success of environmental education depends on the teachers. Without well-trained and motivated teachers outdoor

curricula programs can not lead to a successful environment education. Teachers need to be aware of environmental problems in the context of man-nature relationship, and of educational opportunities in the natural settings. Teachers need to acquire solid knowledge and skills necessary to handle outdoor education, and to teach sound environmental values.

Surveys suggest that teachers commonly believe that providing nature experiences is important and relevant to school curriculum.¹⁶⁾ However, concerns are that teachers often lack the necessary skills and knowledge to teach a particular type of environmental education. Teachers also have various constraints of time, funding and safety. The type of natural settings such as a zoo, nature center, or forest reserves which teachers use is directly related to these concerns and constraints.

There is need to develop teacher's guide book for environmental education through a well organized study in outdoor activities. The book should contain interdisciplinary content, and preferably an environmental unit within an established course curriculum. The guide book also needs to include various methods to measure effectiveness of teaching methodologies with regard to outdoor education ranging from teacher-led discussion to student's independent activities. Most of all, the book has to introduce basic skills necessary to effectively handle valuing strategies for those teachers with various backgrounds and environmental attitudes.

IX. Conclusion

Environmental education is the ultimate solution in the long run of our environmental problems, since the problems are a matter of individuals' attitudes, values and behavior toward the environment. However, school curriculums are not well prepared to handle with the interdisciplinary nature of environmental education, which requires the coordination of multiple subjects. Environmental education is, in general, incorporated in individual school subjects by limited views. An alternative way is to develop a new curriculum to deal with multiple topics of environment into one newly developed single subject, for

instance, 'Environment.' However, this new approach requires a holistic view to deal with knowledge, values, skills, experiences, and all other necessary determinants to solve present and future environmental problems. It is doubtful if any single school can prepare teachers who are equipped with that kind of comprehensive training. Outdoor education is an alternative to the problem of interdisciplinary approach in the environmental education. Outdoor education has been practiced for long time, but it is now redefined to incorporate today's broad environmental education. Activities in the field have value through the experience gained and fall within the holistic learning environment of nature. Outdoor education programs can also provide a meaningful connection between the experiences, skills, and positive attitudes gained in the outdoors and the related classroom study. In this respect, outdoor education acts as a unique bridge between academic and direct-experience settings.

Footnotes

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