Environmental Education in Formal Education in Japan

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Abstract

Since the 2000s, schools in Japan have developed diverse approaches to environmental education, reflecting the characteristics of each region. In general, environmental education has been conducted according to the guiding principles of the Teacher's Guide for Environmental Education and is reported to have been implemented mainly in the classes of Life-Environmental Studies and during Period for Integrated Studies.

During the 2010s, the notion of "environmental education incorporating the viewpoints of ESD (Education for Sustainable Development)" has gained ground. This is education which focuses on comprehensive issues (environment, industry, culture, history, welfare, and so on) and links them with diverse sectors (government, NPO, company, research institution, and so on) in order to consider the sustainability of different regions. The National Curriculum Standards which will be enacted from 2020 incorporate the viewpoints of ESD, and as a result conventional environmental education is expected to expand its scope and contents.

Based on these national policies, although some schools are carrying out advanced educational activities, many schools are not making sufficient progress in regards to environmental education, and are in the situation where they are seeking to somehow implement activities based on current issues such as natural disasters or radioactive contamination.

Key word: Environmental education in schools, Education for sustainable development, Teacher’s guide for environmental education

I. Purpose

This study focuses on environmental education within the context of formal education in schools. Japanese schools are a part of the centralized education system, which is presided by the Board of Education within the Ministry of Education, Culture, Sports, Science and Technology and each local government. The curriculum of each school is designed on the national curriculum guidelines, which are revised once every ten years, to bring up the qualities and abilities that all citizens should have. However, in recent years, it has gradually shifted from a uniform education based on government policy to a diverse education that matches the needs of each community. As such, formal environmental education has propagated throughout the country as a function of the regionalization and diversification of the school educational system.

In this study, I will present the summary and characteristics of environmental education in Japanese school education and attempt to examine how environmental education will develop with the progress of ESD (Education for Sustainable Development) in the future on the basis of an example of a municipality.

II. Understanding of environmental education in schools

Environmental education in schools is officially defined in “Kankyōkyōiku shidōshiryō” (Teacher’s guide for environmental education: hereinafter referred to as “Teacher’s Guide”). This guide was published in 1991 by the Ministry of Education (then) for elementary (1st edition), junior high, and high schools and by the National Institute for Educational Policy Research only for elementary schools in 2007 (2nd edition) and 2014 (3rd edition).

In the 1st edition, environmental education was defined as “education that engages in solving global environmental issues;” this became significantly noticeable during the 1990s (Ministry of Education 1992, pp.7-8). In the 2nd and 3rd editions, it was defined as “environmental education for a sustainable society” with the aim of achieving a
balanced development of environment, economy, society, and culture (Center for Curriculum, National Institute for Educational Policy Research 2007, pp.3-7, National Institute for Educational Policy Research 2014, pp.3-5). This can be considered a result of the United Nations’ agenda “United Nations Decade of Education for Sustainable Development” (2005–2014). This change follows the same path as the international trend in which environmental education is regarded to be the same as education on sustainability; this trend stemmed from the discussions held at the United Nations Conference on Environment and Development in 1992, Thessaloniki IPHS Conference in 1997, and Johannesburg Earth Summit in 2002. It is also greatly influenced by the policies on education in the nation, such as the enactment of the Fundamental Law of Education (2006), which stipulated a respect for life and environmental conservation; establishment of the Basic Plan for the Promotion of Education (2008), which incorporated the promotion of ESD; and enactment of the National Curriculum Standards (2008), which embodied the aforementioned basic plan.

The latest edition (3rd edition) of Teacher’s Guide has three features. The first feature is the redefinition of environmental education. Based on the idea of “a new environmental education incorporating the ESD perspective,” the new edition aims at combining school and social education to facilitate life-long learning. In this new edition, environmental education has shifted from being an education for the purpose of solving problems to one that aims at building a society (Center for Curriculum, National Institute for Educational Policy Research 2014, p.5).

The second feature is to have a clear policy that defines the preschool period as the foundation for environmental education (National Institute for Educational Policy Research 2014, p.17). The objective of this policy is to strengthen the link between preschools and lower grades of elementary schools in order to promote environmental education that is carefully crafted in alignment with the developmental stages of children. There is a growing interest in environmental education among people involved in preschool education, and the contents of the 3rd edition support this trend.

The third feature is the clarification of the competencies expected to be acquired through environmental education and the required competencies to be included in the study plan. These competencies are as follows: “ability to sense the environment,” “ability to solve environmental issues,” “ability to process data,” “ability to utilize information,” “ability to think critically,” “manner to form an agreement,” “manner to determine justly,” and “manner to participate in environmental protection and conservation” (National Institute for Educational Policy Research 2014, p.34).

Teacher’s Guide presents the environmental education concepts outlined above, and it has become a valuable reference for schools to promote environmental education.

III. Contents of environmental education in school education

In Japanese school education, there is no subject called “environmental education.” It is assumed that classes are conducted with an environmental viewpoint in the entire curriculum of each school and that this viewpoint is incorporated into each subject, the period for integrated study (PIS), special activities, and moral education. For example, the textbooks on science, social studies, and home economics already include the concepts of the ecosystem, energy, and consumption behavior, from which students learn about the environment without the need for a separate subject. The textbooks on Japanese language and moral education also include literary works on environmental conservation and protection of nature, which contribute to raising students’ environmental consciousness.

PIS, which is conducted from the 1st grade to 9th grade (for 1st- and 2nd-grade students, it is conducted during the “living environment studies” classes), is particularly important to promote environmental education. Living environment studies was established in 1992 and has practically played the same role as environmental education by focusing on increasing the awareness of children toward their surroundings and on learning through specific experiences and activities. PIS, established in 2002, is the period wherein each school cooperatively and independently tries to solve cross-curricular problems based on the actual local condition. Each school sets themes such as environment, international understanding, information technology, welfare/health and can design original curricula. According to Ichikawa (2016, p.4), 50% of elementary schools and 19% of junior high schools selected “environment” in 2014. This finding shows that environmental education is widely practiced in PIS. The teaching methods of home economics and PIS also include features of experiential learning and problem-solving that emphasize
the independence of students. These features share many common points with environmental education methods.

Then what kind of environmental education is actually practiced? In the same study, Ichikawa (2016, pp.3-5) examined the contents of environmental education in 1999, 2005, 2008, and 2014. It was reported that the top three themes in both elementary and junior high schools were “volunteer for experiences such as environment beautification/cleaning and separate waste collection,” “experience animal husbandry and plant production,” and “learn about waste and recycling within the nation and the local community;” this top-three list has seen little change in 20 years. It was also reported that other themes following the top three in the list that many schools were practicing included “activities to gain familiarity with animals and plants or nature in school grounds, parks, forests, mountains” and “activities to gain familiarity with animals and plants or nature in rivers, ponds, and sea.” It is inferred that the top three themes are implemented by linking them to learnings in social studies and science and that the latter two themes target local nature around the school in its implementation. Therefore, it can be said that environmental education in schools in general has set “beautification and cleaning,” “breeding and production,” and “waste and recycling” as the core subject matters.

In the following chapter, I examine the characteristics of environmental education in schools, which cannot be identified from research findings alone.

IV. Characteristics of environmental education in schools

1) Characteristics observed in the Shiga Prefecture case

Based on the educational trends discussed in the previous chapter, the Shiga Prefecture schools are an example of advanced and superior implementation of environmental education. Shiga Prefecture has Japan’s biggest lake (Lake Biwa) and is the first local government in the county that established the regulation regarding the promotion of environmental education in 2004. Based on these regulations, the local government formulated an environmental education promotion plan for the period of 2004–2015 and set the fundamental objective as “developing people who are independent actors to create a sustainable society” (Shiga prefecture 2016, p.2). This plan demands participation from all prefectural residents in the prefecture (e.g., administration, companies, NPOs, and inhabitants), with schools positioned as an important institution in the plan.

Elementary schools in the prefecture have promoted three experiential programs on nature: Lake Biwa Floating School (the Children of the Lake project), forest-based experiential learning (the Children of the Mountains project), and a project promoting schooling that takes place in rice paddies (the Children of the Rice Paddies project) (Nakagawa 2013, pp.117-118). The Children of the Lake project targets fifth graders and is an overnight experiential learning program spanning two days that takes place on an educational vessel. The contents of the project aim to raise awareness in children about regional values and challenges through hands-on learning focusing on the water, biology, and culture of Lake Biwa while onboard. The Children of the Mountains project targets fourth graders and utilizes arboreal educational facilities and the forests around the school to conduct experiential learning. The project includes a wide range of programs, ranging from light activities such as a stroll in the forest and tree observation to activities involving manual labor, such as maintenance of a bamboo forest as well as thinning and pruning in forests. It further involves classroom learning, such as stories told by a person who engages in work in the mountains. The Children of the Rice Paddies project focuses on engendering interest in agriculture among children and experiential learning about the importance of life and food. It is conducted in 85% of elementary schools in the prefecture. These yearlong activities conducted in collaboration with local farmers engage students in various experiences including growing, harvesting, and consuming rice.

These projects are promoted with the concept of “links” as the keyword, specifically with “linking civic life and environmental issues,” “connecting diverse environmental challenges,” “linking different generations,” “linking the learning through experiences,” and “connecting to local challenges,” and aims at evolving personal learning into learning for a changing society (Shiga prefecture 2016, pp.9-10).

There is a historical background as to why Shiga Prefecture as a whole promotes environmental education; Lake Biwa has a history of environmental destruction and conservation. During the 1960s, domestic wastewater and
agricultural runoff containing chemical substances, including pesticides that had been flowing into Lake Biwa over a long period of time, led to water-quality deterioration, a decrease in endemic species, and failure of the fishing industry. During the early 1970s, citizen movements to prohibit the use of synthetic detergents containing phosphorus gained momentum, thereby leading to the establishment of eutrophication prevention ordinances, which in turn improved water quality. This movement had a ripple effect that was felt nationwide, and Shiga Prefecture became the pioneer of a citizen-powered movement that overcame domestic environmental pollution. Shiga Prefecture turned this historical outcome into a lesson that was reflected in the regulation on the promotion of environmental education.

The abovementioned example of environmental education has six noteworthy features: 1) a solid environmental education policy in the local government, 2) effective utilization of environment-related facilities and equipment, 3) diverse experiential programs and availability of human resources capable of executing the programs, 4) cooperation of local communities, 5) background history of an environmental-conservation movement that battled environmental destruction, and 6) environmental education aimed at creating a sustainable society. The implementation of such comprehensive strategies is the reason why I commend Shiga Prefecture so highly.

2) Characteristics of nationwide environmental education in schools

The commonality shared between the Shiga Prefecture example and nationwide environmental education in schools is characterized by feature 4) mentioned above. After World War II, there was a custom for elementary and junior high schools in the nation to conduct education activities while having a close relationship with local communities. For approximately 70 years, both public and private sectors repeatedly advocated for “schools that take root in the local communities,” “schools that make use of the educational capacity of the local communities,” and “schools that are open to the local communities.” “Local community” is a complex concept representing a geographical range within a radius of several kilometers around the school, the inhabitants living therein, and its underlying resources (human, nature, industry, and culture). The concept of local inhabitants supporting a school remains especially alive in regional schools, with many examples demonstrating feature 4). Furthermore, since both private land owned by inhabitants (farmland and forests) and public land (rivers and parks) around the school is readily available, it is easy to promote environmental education through an alliance between the locality and the school. Moreover, another reason for the facile execution of a program is that many schools have an onsite field for growing vegetables and stables for breeding animals. In contemporary Japan, the relationship between schools and local communities is gradually deteriorating owing to extensive urbanization; consequently, the Ministry of Education, Culture, Sports, Science and Technology is promoting a policy to strengthen such relationships by promoting various projects, e.g., a community schools(1). I believe that the strength of Japanese environmental education in schools lies in the fact that schools in other areas of the country use approaches similar to those used by schools in rural areas.

Another characteristic is that environmental education following the ESD approach is being promoted. Since 2005, ESD in Japan has been strategically implemented in a wide range of sectors such as local governments, NPOs, and corporations. ESD in schools is being proactively advanced nationwide from a base of 929 (as of December 2016) UNESCO Associated Schools. Such a large number of schools implementing environmental education with an ESD perspective is also apparent from a survey reporting that approximately 77% of the UNESCO Associated Schools promote environmental education via PIS(2). There are four characteristics notable in this area: 1) not only schools and local communities but also a wide variety of institutions, including NPOs, administrations, and companies, are coming together to jointly provide classes; 2) prevalence of curriculum-formulation methods that emphasize strongly linking PIS, moral education, and special activities with the core subjects; 3) increasing number of schools that are improving the quality of classes by incorporating the competency theory formulated by the National Institute for Educational Policy Research (Kodama 2015, p.134); and 4) the growing trend of schools that include not only the singular subject of “environment” but a comprehensive study of “sustainable communities.” This is supported by the fact that 71% of elementary schools and 50% of junior high schools made “community” a subject in the PIS in 2014 (Ichikawa 2016, p.4).
V. Challenges facing environmental education in schools

What kind of future challenges would environmental education face when developed in a society with an increasing prevalence of ESD? The thoughts on this matter relate to the context of the characteristics discussed in Section 4.

First, it is difficult to provide high-quality environmental education in schools for a long period of time without political support from national and local governments. Although textbooks may include environmental content, it might not be very helpful unless each school teaches it with intent and in a systematically integrated manner. Moreover, environmental education itself cannot be provided if a theme associated with “environment” is not selected in the PIS; i.e., if the importance of environmental education in the school educational system is low. Therefore, future environmental education in schools must be implemented within the framework of an ESD-related policy, and a convenient framework is available in the 2014 Basic Plan for Promoting Education, which stipulates the promotion of ESD and complete revision of the National Curriculum Standards in 2020; this will likely strengthen ESD perspectives(3).

Second, the current National Curriculum Standards recommends schools to seek cooperation from not only local communities but also from social educational facilities such as community centers, libraries, or museums and organizations related to social education (Ministry of Education, Culture, Sports, Science and Technology 2008, p.47). This has resulted in collaborative practices between schools, social educational facilities, and organizations across the nation. If these educational resources are utilized, environmental education could be conducted more effectively in schools. However, there are several challenges that need to be overcome in order to achieve an effective collaboration, such as fulfillment of the educational aims of both parties, mutual understanding between teachers and organizations, securing budgets and time, and the presence of a coordinating body (Inamori and Ogiwara 2009). Collaborative practices are expected to be enhanced not only in quantity but also in quantity to enrich environmental education that incorporates an ESD perspective.

Although the abovementioned two points are specific challenges facing the promotion of environmental education in schools, it should be realized that another big challenge faces Japanese environmental education when considering the larger picture. The Great East Japan Earthquake and the Fukushima Daiichi Nuclear Disaster on March 11, 2011 has caused a serious impact on the entire Japanese society that surrounds schools. Therefore, in addition to the abovementioned two points, there is a third situation facing Japanese environmental education in schools that includes the grave challenges posed by natural disasters (tsunami, earthquake, heavy rain, etc.) as well as radioactive contamination after a nuclear disaster. The situation is critical, and the damage caused probably exceeds the environmental destruction that occurred in the 20th century. Nowadays, diverse educational activities are practiced mainly in the disaster-stricken areas by the name of “radiation education,” “disaster education,” and “disaster prevention education,” but many schools are still in the trial-and-error stage. Furthermore, in East Asia, nuclear power plants are still under construction or in operation, and natural disasters are increasing or worsening owing to climate change. When we envisage the future of the students who represent the next generation, the appropriate approaches to environmental education that deal with these challenges will likely be the focus of pointed debates in every nation.

Notes

(1) “Community school” is the project that the Ministry of Education, Culture, Sports, Science and Technology launched in the 2000s. It is a system wherein a school, local inhabitants, and parents jointly handle the administration of the school. As of April 2016, there are 2,806 such designated schools. In addition, schools in the country have introduced a system called “the regional headquarters for supporting schools”. http://www.mext.go.jp/a_menu/shotou/community/school/detail/__icsFiles/afieldfile/2016/08/04/1311425_02.pdf (confirmed on December 21, 2016).

(2) It was reported in The Japan Educational Newspaper (Japan Educational Press), page 3, dated January 13, 2014, that the subjects taught in the UNESCO Associated Schools in the PIS were environmental education (76.9%), international comprehension education (51.7%), and world heritage and regional cultures (42.8%).

(3) It was described in “Ziki gakushū shidōyōryō tō ni Muketa Koremadeno Shingi no Matome (hōkoku)” (Summary
(report) of the past discussions on future national curriculum standards), published by the Ministry of Education, Culture, Sports, Science and Technology in August 2016, that “ESD is the idea that becomes the basis for the entire process of revising the next national curriculum standards” and that “(EDS) develops qualities and abilities that are necessary for a leading figure of the sustainable society,” especially in the PIS (p.330). http://www.mext.go.jp/b_menu/shingi/chukyo/chukyo3/004/gaiyou/1377051.htm (confirmed on December 21, 2016).

**Profile of the Author**

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