Abstract

The purpose of this study was to clarify the significance and roles of environmental education by reintroducing the oriental white stork, hereinafter referred to as stork education. First, the study focused on how stork education corresponds with the curriculum in school education and needs of learning in the area where the reintroduction of storks is addressed. Second, the focus was on significance and content of stork education in a local government basic educational promotion plan. Furthermore, attempts were made to identify the future in which stork education is taught in Japan and the Republic of Korea. The results revealed the true state of stork education, the role of teacher training courses that employ storks and textbooks, and the development of educational programs in Japan and Korea that have stork education as their theme. The analysis of the application of this educational program and its effects thereof were beyond the range of this study. In conclusion, the results of this study may also be beneficial to Education for Sustainable Development (ESD) programs. Consequently, the researchers recommend conducting a further study on ESD programs to assess how they are contributing toward the achievement of Sustainable Development Goals (SDGs) in not only elementary schools but also middle and high schools.

Key words: environmental education, oriental white stork, Japan, Korea

I. Introduction

This study aims to clarify the significance and roles of environmental education (EE) with regard to the reintroduction of the Oriental white stork (OWS), hereafter referred to as stork education. Today, transborder efforts to protect OWS breeding in Toyooka-city, Japan and in South Korea are unfurling because of the concerted efforts of the citizens of these countries. As a result, an international conference was held in Japan and Korea in which experiences of research and other activities related to OWS were shared, and a memorandum of understanding (MoU) was signed for the protection of the OWS. The reintroduction of OWS is now regarded as a global issue. From the perspective of the Convention on Biological Diversity (UNESCO 1992), it is clear that EE has the potential to be an important conservation measure for endangered species and biodiversity. Although there are differences in legislations and other institutionalized efforts promoting EE in Japan and Korea (Kim 1996; Takahashi and Imura 2005), various EE practices have been developing in cooperation with each other in both countries. Therefore, ways in which these conditions can be improved through EE research should be urgently discussed, and this paper, to the best of the authors’ knowledge, is probably the first of its kind that reports on EE based on specific case studies from Japan and Korea.

The study considers how stork education corresponds with existing school curricula and learning needs in the affected areas. In addition, it examines the significance and content of stork education in a local government’s basic education promotion plan and future possibilities of stork education in Japan and the Republic of Korea.

In Japan, we investigate the inclusion of stork education in the Furusato Study, initiated in Toyooka-city in 2017, which seeks to encourage children to love and take pride in their hometown. We also consider how the subjects of “environment” in junior high school and “environmental science” in high school have been developed in Korea. In this context, we explore the elementary school teacher-training course at the Korean National University of Education’s Eco-Institute for the Oriental Stork, as well as educational programs that focus on biodiversity conservation using storks. Our goal is to establish a foundation for stork education as a valuable area of EE that can support broader efforts toward education for sustainable development (ESD), including wetlands and biodiversity conservation.
II. Background

1. The Reintroduction of the OWS in Japan and Korea

The OWS is one of the world’s largest birds, with a total length of 110–115 cm. The storks migrate from Russia to China, Korea, and Japan for overwintering. In every resting place, they need a site for nest building and foraging. It is carnivorous and preys on fish, amphibians, shellfish, etc. However, since 1970s, the stork’s living sphere has been threatened by industrialization and the denaturalization in these East Asian countries. In Japan, the OWS once occupied the entire Toyooka Basin, and its foraging sites included paddy fields, ditches, and rivers in rural areas (Naito and Ikeda 2007).

OWS was once extinct because of the reduction and deterioration of their habitat due to human activities such as industrialized agriculture and the use of herbicides and insecticides and the resultant environmental pollution, so efforts to protect the OWS in both Japan and Korea had a difficult task ahead. In Japan, the last OWS was found in the wild in 1971 according to the Japanese newspaper article of Asahi Shimbun (1971, April 16), and lived in captivity until 1986 (Ikeda 2000). In Korea, the last pair of storks was found in Eumseong-gun, Chungcheongbuk-do, but the male was shot dead three days later, and thereafter the female lived alone in the Seoul Zoo from 1983 to 1994 (Park et al. 2017).

Artificial breeding of the OWS took place for the first time in Japan in 1989 (Naito and Ikeda 2007) and in Korea in 2002, and the total number of storks bred now exceeds 100. As Park et al. (2011) point out, the released stork population from Korea may also interbreed with the stork population in Japan, facilitating further variation in the genetic diversity of storks. Thanks to these efforts, in 2018, it has been very pleasant to see Japanese and Korean OWS mingling in Unnan city, Shimane prefecture, Japan, and caring for their four newborn chicks.

On the other hand, there have also been some sad events, including the shooting of a female OWS which was mistakenly killed by a hunter in Unnan city, Shimane Prefecture according to the article of Japan Times (2017, May 20). Despite these incidents, the international exchange between Japan and Korea regarding OWS reintroduction has generally proceeded smoothly, as evidenced by a MoU between the two countries regarding OWS reintroduction research as well as citizen-level interactions. Specifically, the following three steps are significant:

1) At the research institution level, collaboration between the Korea Institute of Environmental Ecology and Hyogo Park of the Oriental white stork began in 2003. The MOU between the two institutions has included not only research in ecology and behavioral science, with the goal of reintroducing the OWS to the wild, but also information exchanges for the purpose of improving social cognition. Furthermore, reintroducing storks to the wild has become one of the collaborative research projects of the Japanese Society for EE. Various research activities focused on the OWS have promising practical applications. Cooperative international research is crucial to address the differences in OWS conservation policies between Russia, China, Korea, and Japan (Ohsako 2011). It is important for all of those involved in the reintroduction of such a magnificent bird to establish effective international networks for information exchange and research studies.

2) At the municipal level, Japan’s efforts were reported at the Tenth Meeting of the Conference of the Contracting Parties to the Ramsar Convention on Wetlands (COP10) in Changwon, Korea in 2008, where discussions also took place regarding environmental and facility improvements needed for successful OWS reintroduction. In Yesan-gun, Korea, local government officials from both Japan and Korea visited the facilities and collaborated on OWS release plans. At the Fifth International Conference on the Future of OWS in 2014, the Korea Institute of Environmental Ecology and Gyeongsangnam-do Ramsar Environmental Foundation of Korea reported on the status of OWS reintroduction and wetland conservation. Furthermore, Japanese officials (from the Hyogo prefectural stork village park, Hyogo prefectural university graduate school, and Toyooka-city) were invited to ceremonies in Korea, and the First International Forum for Oriental Stork Conservation was held on the day before a release of OWS. The forum also received reports on efforts to reintroduce the OWS in Japan.

3) At the citizen level, in July 2010, exchanges among farmers from Japan, Korea, China, and elsewhere took place at the International Conference for Enhancing Biodiversity in Agriculture (ICEBA) in Toyooka-city. Proposals for biodiversity conservation pursuant to COP10 were developed by a consensus of the participating farmers...
because they required each country to be promoting an eco-friendly agriculture for restoring biodiversity which was destroyed by agricultural chemicals etc., and improving the self-sufficiency of food. In addition, in June 2018, the fifth Exchange Meeting for Development of Habitats for the OWS occurred, sponsored by a Japanese citizen group concerned for strengthening citizen-led movements on behalf of the OWS. In this way, information on efforts to ensure stable habitats for the OWS has been widely shared throughout the country and around the world.

As endeavors to reintroduce the OWS have blossomed nationally and worldwide, it is crucial to conduct discussions and exchange opinions at all levels and to act together toward the goal of preserving this endangered species.

2. Stork Education as an Example of EE

The world is confronted with problems that are complex and not easily solvable including global environment problems such as biodiversity conservation, global warming and destruction of the ozone layer, and energy issues. Contemporary environmental problems stem from industrial pollution at a global scale, and they follow the wild extinction and the reintroduction of OWS. Therefore, we need to think about difficult subjects such as “harmonized contacts between people and nature.” As Krasny (2013) points out, the international recognition, expansion, and beginnings of the professionalization of EE as a field of practice and research coincided with the recognition of the “wicked problems” in the social, environmental, and policy sciences. Lee and Kang highlight the importance of sustainable development to assuage this sense of crisis and the role of education in fundamentally changing human thought and behavior in the long run (2009).

In this study, EE for the restoration project of OWS is regarded as exploration-oriented EE. Exploration-oriented EE is an important method that enables citizens to see the world from an environmental perspective through “exploration” (scientific exploration and insight) (Lee 2006). EE is conducted by citizens to explore, discover, and realize environmental problems. Through the above EE, citizens can appreciate the need to coexist with OWS. The restoration project for OWS should be conducted not only from a problem-solving perspective of EE but also for ESD to improve awareness in areas such as civic awareness. UNECE (2008) states that ESD extends to a complex convergence of environmental, social and economic issues, and defines sustainable development education as a goal for people to find solutions and deal with problems that threaten the sustainability of the planet. Therefore, stork education should be conducted together with EE, peace education, human rights education, consumer education, development education, health education, biodiversity education, gender equality education, multicultural education, and civic education.

We will consider related learning needs in Japan and Korea, by analyzing some specific educational activities, below.

III. Curriculum and Practice of “The Furusato Study” in Japan

As a Japanese case, we will look at some educational practices based on supplementary materials that were used in the Furusato (Homeland) Study in Toyooka-city, Hyogo Prefecture.

The Furusato Study has been positioned as a central part of Toyooka-city’s basic plan for promoting education, and it encompasses setting priorities for the local board responsible for overseeing compulsory education. As a concrete example of stork education, EE guidance material [middle school version] (National Institute for Educational Policy Research 2017) on providing a homeland for the OWS has been introduced as part of moral education for third-graders in middle school. The educational program provides insight on nature conservation from the perspective of a humble farmer who has been involved with reintroduction activities.

Stork education is clearly evident in the Third Education Plan (2015–2019) of Toyooka-city, which has abundant regional resources, ranging from the Kinosaki Hot Spring to Toyooka kaban (bags produced by local industry). The Lower Maruyama River and its surrounding rice paddies have received global recognition as part of the San’in Kaigan UNESCO Global Geopark. On the basis of the natural environment and industries in Toyooka-city, the curriculum on the “Toyooka Stork Plan” in elementary and junior high school has been organized to systematically and consistently discuss the status and situation of OWS in relation to their natural resources in homeland. Specifically, as a part of the integrated studies period, every child in Toyooka-city has the opportunity to learn about the OWS and its reintroduction.
To promote the Furusato Study, a 144-page *Toyooka Furusato Gakushu Guide Book* was developed in 2017. It contains sections on the OWS, geoparks, and industry and culture. Information was drawn from numerous sources, including Hyogo Park of the OWS, the University of Hyogo, farmers, and nonprofit organizations. Municipal officials received input from experts on all three topics, after which the board of education and relevant municipal departments worked together to create the final version (Honda 2017). The guidebook is distributed to all elementary and junior-high children attending schools in Toyooka-city.

Certainly, individual schools and teachers can take their own steps to promote EE. For example, Hidaka Elementary School in Toyooka-city (where the author conducted interviews in 2015) set an EE target of “developing children who work to create a better global environment, thinking about the relationships between nature and humans. (according to the interviews in 2015)” Specific learning contents are arranged for each subject, moral education, special activities, and periods of integrated study based on three general important goals of EE: (1) to develop an interest in and deeper understanding of the environment through awareness and discovery in nature and life; (2) to nurture attitudes of respect for nature and how it benefits our lives through interacting with the natural world; and (3) to foster practical skills to work toward the realization of an environmentally friendly society through scientific considerations (Overall plan of EE in Hidaka Elementary School in 2015). At Hidaka Elementary School, students learn about not only the OWS but also ways to cherish nature more generally through supplementary material on the “village of the oriental stork flying” as a part of moral education in fifth grade.

In addition, as a form of experiential education, the basic educational plan in Hyogo Prefecture requires nature experience activities for all third-graders at elementary school. At this level, students usually learn about OWS-related activities. The guidebook suggests the following as experiential learning activities that can be conducted in natural environments: (1) going to see the OWS, (2) conducting surveys of living creatures in wetlands, rice paddies, and other locations, and (3) investigating efforts to protect wetlands. The guidebook also contains interviews with experts that enable students to learn by interacting with private organizations and farmers, about not only the OWS specifically but also their views on how to express love for and pride in their home area. Moreover, an inventory on the OWS is attached as reference material, and the results of scientific research are presented to help students see the value of such research.

Stork education in Japan has effectively advanced community development by facilitating cooperation between schools, nonprofits, administrative organizations, and other entities. There have been several reports on EE practices that are open to the broader community (Satake 2014, Ueda 2014, Yoshida 2014), among which the project commissioned by Toyooka-city to develop habitats for the OWS and promote local acceptance of the replication of small-scale wetlands within fallow fields is particularly noteworthy. This government-led program has been effective in not only environmental conservation and education but also inviting active participation by local residents (Tabiraki 2017). By promoting a view of paddy fields as biotopes, *i.e.*, wetlands that facilitate the conservation of animal habitats, it communicates three main points: (1) wetlands provide valuable habitat for the OWS; (2) the value of managing certain portions of agricultural land as places for the improvement and conservation of biodiversity; and (3) the usefulness of these locations for experiential learning activities in natural environments. With regard to the third point, the view of paddy fields as biotopes has been promoted by elementary schools in Toyooka-city. As of September 2015, 15 elementary schools had identified and were managing as biotopes a total of 1,288 paddy fields. The guidebook also provides useful information on how people can protect wetlands.

When Toyooka-city third-graders visit a paddy field preserved as a biotope as part of their experiential learning activities in natural environments, city officials and representatives of nonprofit organizations offer support by delivering lectures on natural life in the paddy fields and assisting students with surveys of the living creatures present there. These activities play a major role in not only addressing the problem of abandoned farmland but also improving the quality of EE, thinking about the relationship between nature and human beings, and encouraging the creation of comfortable natural environment. The issue is approached as an opportunity for education, with messages like “Let’s make these places full of living creatures, even if we cannot grow rice there” or “Let’s make this a place where children can learn about the environment.” Paddy fields as biotopes can play a significant role in promoting sustainable community development.
Stork education aims to contribute to community development, and learners would be required to recognize the reintroduction of OWS as a pertinent problem in biodiversity conservation. Their efforts toward sustainable development will focus on the relationships between nature and humans as well as human-to-human relationships in terms of collaboration with stakeholders. Similarly, educational goals will include learning to position conservation efforts for OWS into peoples’ lives as well as a general awareness of the issues of biodiversity and linking them to environmental-friendly rice-paddy management and will result in OWS protection.

IV. Stork Education Curriculum in Middle and Higher Education in Korea

To ensure the safe restoration of stork habitats, the Korean Cultural Heritage Administration designated an area of 135,669 m² around Yesan-gun as an OWS village in 2015, setting up a cultural center, an open space, an ecological wetland, and a breeding ground. The OWS ecology researcher involved in this project has moved 70 storks to the Yesan Oriental Stork Park; the first release of storks into the wild occurred in 2016, and 38 storks are living in nature as of 2018.

Compared to Toyooka-city, Yesan-gun has made far less progress in implementing stork education in schools. Its current programs are focused on biodiversity. In addition, the OWS cultural center offers educational programs for local residents in connection with the local stork festival, including the International Forum for Oriental Stork Conservation. However, to protect the habitat of storks, relevant education must be provided to the community through lifelong education. Such education would aim to restore the essence of social education, improve quality of life, and develop the community by ensuring that the members of society have a fair chance of learning throughout their lifetime, sharing the tasks in their daily lives with various members of the community, and building the power of their own practice to solve problems. Learning in a local community involves not just gaining knowledge but also realizing and acting on problems in life. Lifelong learning with linkages to other regions is meaningful in supporting practical learning and nurturing individual learners as practical skills for regional development to enhance citizen’s reputation with reflection and practical skills based on the nature of such social education (Lee and Lee 2013). The habitat of storks can be seen only when this field of lifelong learning is established. From this point of view, Educational programs in Yesan-gun are insufficient from the perspective of lifelong education.

Japan has facilitated stronger connections between local and school education, as well as lifelong learning, by providing local residents with an opportunity to learn about OWS and biodiversity in nearby paddy field biotopes, as described above.

For example, the activities of Toyooka-city are based on the determination that residents will “continue to live in this area.” Although residents of Toyooka-city suffered unprecedented damage from the 23rd typhoon in October 2004, the area was reorganized as a mudflat for the wild honey ears. The spirit of Toyooka residents is overcoming disasters through the creation of a better area than a disaster, and at the same time, the natural and symbiotic nature symbolizing the return of storks to the wild has found the area’s wealth and pride in the region. (1) It is believed that the enhancement of the elements of stabilization based on the “heart to love living” and “heart to love the home” has been made possible in the background of the improvement of the activity for returning to the wild. This has led to the rediscovery of the identity that people involved in the chain of empathy have a sense of satisfaction with life, a sense of well-being, and a unique life just like the Toyooka-city. (2) The characteristics of activities in Toyooka-city, which link “science” to “administration” and “local society,” were established through founding a modern university military organization that closely connected with the area for the return of storks to the wild, promoting activities based on science and improving the system for analyzing data obtained through research studies, and developing and connecting the system of local communities for development (Lyu and Nam 2017). But in South Korea, these activities do not occur well. Therefore, it is necessary to follow the example of Japan’s stork education in accordance with the current situation in Korea. We believe that Korea should implement a similar program to activate concern for the environment and sustainable development education. The following paragraphs describe existing stork education in middle and high schools in Korea.

The middle school environment curriculum contained within Korea’s 2009 revised education curriculum aimed to enable students to recognize environmental issues such as pollution and climate change on the basis of an integrated
understanding of the environment and to increase their problem-solving abilities and environment-friendly attitudes and values so as to promote sustainable development and green growth. An analysis of the content system shows that some subjects could have been related to the OWS, such as the chapter on “The Environment and Environmental Conservation,” as well as the section titled “The Meaning of Ecosystems and Their Constituent Parts” within the “Valuable Environment” chapter. However, there was no explicit reference to endangered species and biodiversity.

In the 2015 revised middle school curriculum, environment is described as a subject that equips learners with the will and capacities required to live a harmonious life within the earth ecosystem together with other people, thereby contributing to a sustainable society and solving such problems as climate change and loss of biodiversity. In the 2015 content, the chapter titled “The Environmental System” could permit a discussion of the OWS, an endangered species, in the context of interactions between biological species and environmental problems, as well as in discussions of the social, cultural, and economic aspects of environmental problems and attempts to solve them.

The 2009 high school environment course aimed to help students understand the correlation between the environment, economy, and society, to build decision-making and problem-solving skills, and to develop desirable values and attitudes toward the environment, thereby maintaining a high quality of life by cultivating environment-friendly lifestyles and global citizens who can contribute to achieving a sustainable, low-carbon, green society. In particular, based on knowledge and experience about the interactions between the ecosystem and human society, students were expected to understand environmental problems and issues surrounding the energy crisis.

The areas of study for the 2015 high school environment curriculum were “The Environment and Humans,” “The Environmental System,” “Environmental Research,” and “Sustainable Society.” Because the ecosystem and social systems constantly interact with and influence each other, an integrated viewpoint was introduced. In addition, to further promote sustainable development, the contents of natural science, social science, and the arts were expanded to encompass environmental problems. Environmental issues such as water, air, soil, and plant and animal life are used as instruments to address various aspects of how ecosystems interact and emerge. In short, ecosystem and biodiversity issues are thoroughly embedded in the 2015 curriculum.

An education plan relating to the OWS has also been fashioned at the Korea National University of Education, which has a general teacher-training college and is the center of OWS restoration efforts. The university’s biology department listed a course titled “Stork Ecological Exploration” at the Korea Institute of Environmental Ecology that covered the reintroduction of OWS. However, the course has not been offered because the professor in charge of that subject retired.

Other courses in the university’s Department of EE, such as “Introduction to Biology” and “Ecology,” generally address preliminary teacher education on conservation of biodiversity, but it can be presumed that OWS are not addressed in depth there.

This is because even if we compare the whole country, there is no concrete investigation into the recognition of storks. Korea is constantly delivering on the OWS and the relevant restoration campaigns through news, broadcasts, and campaigns; however, it will take some more time to have recognition rate as high as Japan (Lyu and Nam 2017). In the “Sustainable Development Theory” course, sustainable biodiversity is linked to OWS, and the “Environmental Law and Policy Theory” course covers restoration policy for that endangered species. There seems to have been a shortage of education programs on OWS for prospective teachers although the institution has been involved in stork reintroduction. Therefore, it may be desirable to create a class called “Storks and Sustainable Development,” perhaps as a compulsory course (Nam 2018).

The Korea National University of Education needs to develop an ecological education program on the OWS. A mandatory undergraduate course should be designated so that the entire undergraduate community can communicate the basic contents of stork restoration in connection with ESD (Cha 2017). It is important to link the existing stork education programs and camp activities in the Yesan area, which are currently conducted only as forms of social environment education, to school education. Furthermore, measures should be taken to activate systematic education methods in connection with local education support agencies. In particular, contents that are easy for teachers to use should be developed and distributed, to facilitate education on the environment in Yesan—Korea’s primary OWS habitat. Educational and promotional programs targeting citizens as well as schools are important. Two-day camping
programs could provide an engaging venue in which to deliver ecological education, including information on stork reintroduction.

V. Discussion

We will now attempt to conceptualize stork education, drawing from the case studies about community practices in Japan and curriculum analysis, including teacher-training course discussed above.

First, from the viewpoint of community building as a perspective of lifelong learning, stork education can be made suitable for all ages, from young children to the elderly. Because the OWS lives in paddy fields, and the use of pesticides is always an issue when tackling biodiversity conservation, for example, it is important to consider how to manage rice paddies with environmental-friendly agricultural methods and other practices, so as to create a sustainable society in which humans and OWS can harmoniously coexist. The topic is also relevant to educational practice on resolving environmental crises in rural areas. Furthermore, educational practices and activities related to the OWS could lead to sustainable community development, as well as to the promotion of environmental-friendly agriculture in an aging, low-birthrate society. Stork education is inextricably linked to the creation of wetland areas that could become OWS habitats. Learning about the OWS, with a point of view of “harmonized contacts between people and nature,” can occur on visits to paddy fields (viewed as biotopes), previously discussed in this paper as a practice benefiting the community.

Second, school curriculum and textbooks related to stork education can play a central role. Education on the reintroduction of the OWS also reinforces attitudes toward environmental conservation, in general. The OWS restoration project can incorporate numerous components of sustainable development, including EE, peace education, human rights education, consumer education, development education, health education, biodiversity education, gender equality education, multicultural education, and citizenship education. Systematic curriculum management should be carried out with the aim of reintroducing the OWS to the wild, a supplementary tool (like the Toyooka Furusato Gakushu Guide Book) helping teachers to cover central questions with their students could be useful. Further, the stork education curriculum in Korea can help students understand the correlation between the environment, economy, and society. Such materials could assist teachers in introducing students to the moral values involved in practical cases and the impact on local residents, so that they can view the OWS situation as a case study in stork education curriculum in middle and higher education in Korea. The important point is to develop an overall implementation plan that aims to link the aspects of the OWS situation with each subject, and to verify these practices using the plan-do-check act cycle. Furthermore, it is more important for teachers to work together on ways to welcome students’ diverse opinions while also shaping their understanding of the significance of environmental conservation.

Finally, with respect to country collaborations for the cause of stork education for Asian EE, another possibility would be developing a Japan–Korea joint program on the theme of the OWS, and even beyond that possible partnership, stork education has potential global reach. Sustainable reintroduction of the OWS requires education to raise awareness of the importance of restoration. Stork education should be offered for all ages and not simply to specific groups. Therefore, we need a program that can be tailored for various groups, such as infants, students, adults, and experts. Educational activities could begin with efforts to reintroduce OWS and then expand their focus to include the importance of ecosystems, biodiversity, and environmental conservation. Many existing educational endeavors already discuss the OWS (Lyu and Nam 2018), including programs on endangered species and biodiversity education, on stork habitat and environmental exploration, and on the relationship between storks and communities; a program viewing storks from a historical and cultural standpoint; a program on approaches to environmental ethics and environmental philosophy; a program on relationships between humans and storks; and a program on how to promote the need for stork restoration. In this respect, in defining stork education, the key concepts and educational goals should be aligned with the learning needs of a particular local area. Furthermore, stork education requires collaboration with a municipality’s community development policy, which governs how the OWS may be considered in urban development. Analysis of stork education in Japanese and Korean curriculum should be studied further.
VI. Conclusion

This study has discussed the current state of stork education, the role of teacher-training courses that refer to storks in their textbooks, and the development of educational programs in Japan and Korea in which stork education is a prominent theme. Analyzing the implementation and actual effects of these educational programs is beyond the scope of this study.

The study results may be useful to education programs aimed at supporting the achievement of the United Nations Sustainable Development Goals (SDGs). Stork education that incorporates various learning plans can undergird local efforts to sustain the OWS while also reinforcing the broader transformation of practices envisioned by the SDGs. Consequently, we recommend a further study of ESD programs at elementary schools in Japan and Korea to assess how they are contributing toward the achievement of the SDGs in not only elementary schools but also middle and high schools.

Reference

National Institute for Educational Policy Research. 2017. EE guidance material [middle school version]. Toyokan


