

# Hunter Education as a Function of Education for Sustainable Development

David Allen\* (Texas A&M International University),

Kantaro Tabiraki (Tokyo University of Agriculture and Technology)

Key words: Resource sustainability, conservation, education

The UNESCO (2017) priority action area 5 is the acceleration of sustainable solutions at the local level. Using a lens of hunter education, this initial look into education for sustainable development (ESD) for wildlife focuses on four areas of management: wild game, endangered animals, agricultural losses, and hunters in Japan and the United States. Recent changes in these four interrelated areas highlight the need to focus first on area 5.

The white stork (*Ciconia boyciana*) became extinct in Japan in 1971 and reintroduction efforts began in 2005 (Japan Times, 2017a). The shooting of a protected white stork by a hunter in Shimane Prefecture (Japan Times, 2017b) brings into focus the need for increased hunter education in Japan as the hunter misidentified the stork thinking it was a heron and killed the protected bird.

The number of Japanese residents holding hunting licenses decreased from about 447,000 to about 105,000 hunters between 1964 and 2015, with approximately 67% of the hunters being at least 60 years old (Igota & Suzuki, 2008, Lim, M. 2016; Noda, Y., 2015). Correspondingly, according to Lim (2016), over the past 20 years, the deer population in Japan increased from fewer than 400,000 to over 3 million individuals, the boar population went from 500,000 to 1 million individuals, and similar increases were seen in monkey and bird populations resulting in nearly \$200 million (USD) annual impact to Japanese agriculture since 2008. These damage estimates and population levels will help wildlife management efforts align with the interests of the stakeholders (farmers, hunters, etc.) and, with proper hunter education program, encourage recreational hunting in areas that have seen the practice decline, such as rural and suburban locations (Igota & Suzuki, 2008). With a similar perspective, the Ministry of the Environment in Japan lists two goals on the Attractiveness of Hunting Forum on their website. The second of these goals involves developing wildlife conservation relationship between the wildlife and the citizens in order to ensure balance in the ecosystem (Japan Ministry of the Environment, 2017).

The North American model of wildlife conservation has seven principles: 1) wildlife is held in the public trust, 2) prohibition on commerce of dead wildlife, 3) democratic rule of law, 4) hunting opportunity for all, 5) non-frivolous use, 6) international resources, and 7) scientific management (Rocky Mountain Elk Foundation, 2017). The U.S. Fish & Wildlife Service (2011) data show that participation in hunting is up 3% since 2006, about 80% of all hunters reside in a metropolitan area, and 89% were male. Peterson and Nelson (2017) agree with these data except their findings show that most hunters live in a rural area. They also concluded that the current era of wildlife management and conservations is more about the hunters and less about game species management. Peterson (2014) evaluated how education materials from state and non-governmental organizations (NGO) address hunting ethics and wildlife management, finding twelve themes. Three themes had significant differences between the government and NGO materials. The state agencies had a significantly higher focus on respect to landowners ( $p=.026$ ) while the NGOs had a significantly higher focus on being motivated by nature ( $p=.002$ ) and being skilled at hunting ( $p=.010$ ). The other nine themes, such as obeying the law, protecting wildlife habitat, and using the harvested meat, were not significantly different in framing by the agencies or organizations.

ESD through hunter education involves managing endangered wildlife through education and identification. This area of ESD also involves managing game animals and agricultural production through, in part, effective hunting practices as informed by hunter education programs. Challenges for hunter education informed ESD include gentrification and a decreasing number of hunters in Japan, while programs in the USA, especially government-based programs, are more focused on hunting techniques and property rights than on animal conservation and management. These challenges lead into the next UNESCO priority area for discussion, area 1 – advancing policy.

**References:** Please contact the lead author for the reference list.

# Developing the inner value of corporate social responsibility for environmental education facilities and venues

<sup>1</sup> Lin, Su-Hwa (Associate Professor)

<sup>\*2</sup> Lee, Hsin-Lin (Graduate Student)

*Department of Science Education and Application, Master Program of Environmental Education and Management, National Taichung University of Education, Taiwan*

Key words: Environmental Education Facilities and Venues · Corporate Social Responsibility · inner value

Corporate Social Responsibility (CSR) aims to provide the public with an education site on more intimate contacts and understandings toward the environment. However, it will not operate well if it is unable to become a self-sufficient industry, and the involvement of the related industries will infuse the environmental education with much more different perspectives for management and distinguishable business models. Therefore, in this research, we adopt CSR incorporating the concept of bringing environmental education into the industry, developing a framework that is suitable in Environmental Education Facilities and Venues (EEFV) and will facilitate the inner value of CSR. In this way, we offer an establishment of a model for the related types of facilities to follow.

In this research, we construct the framework through Focus Group (FG) and a wide collection of references, and we invited the experts pertaining to the related fields of environmental education and CSR to amend and investigate the inner value of EEFV. The entire investigation delves into four aspects, namely, *Environment*, *Professional Manpower*, *Curricular Plan*, and *Business Management*. *Environment* involves the incorporation of the peripheral resources on the facilities that are related to environment education and are eco-friendly to the environment. Besides, we also adhere to the regulation pertaining to the related law. *Professional Manpower* aims to the maneuver the human resources with efficiency and equity. We ensure the basic human rights of the employees, providing both the training on the professional skills for environmental education and the mutual supports from the professional companions. *Curricular Plan* aims to combine the status quo of the local environmental resources, dedicating to developing of multi-course plan on environmental education and reusable course materials and to promoting the awareness of Green Supply Chain. *Business Management* takes a specific operation and management as a target, focusing on the sustainability of environmental resources and the environmental carrying capacity. The implementation of it is based on the safety of public environment and the provision of early warnings, and it greatly enhances job opportunities, draws attentions on the right of the consumers, and comes into assistance for the underprivileged. Moreover, it keeps the amity among the companions and every walk of life in the society.

The results of this research are capable of incorporating the featured indications of environmental education and CSR, and it improves the qualities of the related domestic industries and EEFV.

# **Photography for encouraging pro-environmental behavior: A study based on interview to university students**

**ZHONG ANGGU (Ritsumeikan University)**

Key words: class activity, extrinsic and intrinsic motivation, qualitative and quantitative study, participatory research

Numerous studies demonstrated that people have adequate knowledge of environmental issues yet seldom change their behaviors for the good of the environment. This study aimed to understand whether taking photos could be an effective way to encourage people's pro-environmental behaviors. We encounter numerous photos on a daily basis. To some extent, they could even affect us more profoundly, emotionally or intellectually than words. In this study, key factors that encourage people's pro-environmental behaviors were tested. Based on literature review, two research questions were developed: (1) What factors affect people's pro-environmental behaviors? (2) Can photography become an effective tool to change people's behavior? In order to answer these questions, a face-to-face interview was conducted to 18 students who participated in one class offered at Ritsumeikan University in the spring semester of 2017. In this course, students were asked to start new pro-environmental behaviors for two weeks as a class activity. Additionally, students were asked to take a photo of their new behaviors as a proof and to present it in front of other students after two weeks. The results of the interview was analyzed based on the self-determination theory and cognitive evaluation theory. The results revealed that extrinsic motivation was the main factor that affected students' behavioral change (fifteen students) meaning majority of them started the behavior because it was assigned as the class activity they had to engage in. Meanwhile, thirteen students answered that intrinsic motivation affected their behavioral change meaning they engaged because the activity was interesting. Lastly, eleven students answered that taking photos prompted their behavioral changes. While there is limitation in generalizing findings of our results because of lack of samples, this study revealed potential of three factors in encouraging people's pro-environmental behaviors: extrinsic and intrinsic motivation, and photos of their new behaviors.

## Possibilities on International Collaborative Research Initiative for E.E. in Asia (2): Designing Survey and Questionnaire

TO Kimiharu (Aomori University), CHANG T.C. (Taiwan Normal University), KIM Chankook, (Korea National University of Education), LEE Sun-kyung, (Cheongju National University of Education), SAKURAI Ryo (Ritsumeikan University), NINOMIYA-LIM Sachi (Tokai University), HATA Noriko (Tsuru University), KATAYAMA Junko (Istanbul Kultur University), FURIHATA Shinichi (Tokyo University of Agriculture and Technology)

Keywords: Cross-national survey design; online survey; environmental education research

This collaborative study is organized in response to recent joint-momentum that has been built among the three academic societies of environmental education (EE) in Japan, Korea and Taiwan. One of the most recent steps is demonstrated in the special issue of *Japanese Journal of Environmental Education* in the spring 2017, which shared the situations of formal and non-formal EE and trends of EE research in three Asian countries and gained insight from outside of the region. At almost the same time, our research group made a presentation in Japanese titled *Possibilities on International Collaborative Research Initiative for Environmental Education in Asia* at the 11<sup>th</sup> Kanto Branch Conference of the Japanese Society for Environmental Education last March 2017. The presentation covered the background, scope, significance, and possible direction of collaborative research among Japan, Korea and Taiwan.

The collaborative survey proposed aims at illuminating how environmental education professionals are engaging in his/her research activities across the three different nations. In so doing, we plan to utilize a common questionnaire as a means of obtaining certain background data for identifying similarities, difference and trends in the EE research among the three societies. Such results will become an asset for not only providing opportunities for increasing the capacity of EE research but also generating further in-depth studies both inside and outside the three nations.

In this discussion meeting, our group first reviews the presentation we made last March. Then, our discussion centers around tactical and logistical issues of designing a survey and framing questions. To design and conduct a cross-national, on-line survey (i.e. SurveyMonkey) with multiple languages, participating researchers needs to be aware the two following areas: (1) communication and cooperation among researchers, and: (2) validity and trustworthiness. For example, to collect data in an organized and consistent way, participating researchers have to agree upon the selection of answer choices, equivalent terms and phrases for finalizing the questionnaires of different languages. Thus, it is better to conduct a pilot survey to test logistics as well as to minimize question redundancies. Also, researchers' expertise and professional network in his/her country are highly important to obtain desirable response rates.

# **Environmental Education Using the Oriental White Stork in Japan and the Republic of Korea**

**Kantaro TABIRAKI\* (United Graduate School of Agricultural Science, Tokyo University of Agriculture and Technology, Japan),  
Young Sook NAM (Eco-Institute for Oriental Stork, Korea National University of Education, the Republic of Korea)**

Key words: reintroduction of the oriental white stork

This project created a proposal for environmental education using the reintroduction of the oriental white stork as a theme in comparison with the successful development of other educational programs in Japan and the republic of Korea. There have been many educational programs related to the reintroduction of the oriental white stork in Japan and the republic of Korea, but little study has been done to construct a systematic approach to education in the general framework of a sustainable coexistence between people and nature. Our project would be helpful to use in coordination with components of environmental education and education for sustainable development using the oriental white stork as a theme; it could prompt a rethinking of a symbiotic society with an aspect on education for all, formally and non-formally. Therefore, it is important to determine how such educational programs can develop human resources for the effective conservation of an oriental white stork in Japan and the republic of Korea.

For our research methodology, at first, we collected data on research trends in educational programs about the oriental white stork in the case of Japan and the republic of Korea, as both formal and non-formal education. Secondly, we reviewed the outline of national curricula and examined what was going forward in an educational institute, comparing the components of environmental education and education for sustainable development. One research question was to learn what the challenges are that environmental education using an oriental white stork in formal and non-formal education currently faces Japan and the republic of Korea. Another one was to determine how the past, present, and future environmental education using the oriental white stork has been related to local environmental and social, economic, political, and/ other contexts in formal and non-formal education in Japan and the republic of Korea. Finally, we discussed the idea of environmental education using the oriental white stork, including its interdisciplinary concept, with a focus on education for sustainable development and to indicate its possibility as alternative education.

In future study, we would like to examine how non-formal education, including farmers and hunters, could promote efficient agriculture and support efficiently reintroducing the oriental white stork in Asia, including Taiwan and China.

# Comparative Study of EE/ESD in Higher Education in Asia: A Proposal

Sachi Ninomiya-Lim (Tokai University)

Keywords: Higher education, university, ESD, Asia, comparative study

The international community has regarded higher education institutes (HEIs) as major actors in developing a sustainable world since when the United Nations Conference on the Human Environment pointed out their importance in 1972. As people's interest in environmental and sustainability issues gradually increased in the 1980s, expectations regarding the roles to be played by HEIs also grew, accompanied by discussion of how HEIs can and should contribute to sustainable development. Since the 1990s, a number of international declarations, partnerships, and networks of HEIs for sustainability have been launched, such as the Association of University Leaders for a Sustainable Future (ULSF), the Global Higher Education for Sustainability Partnership (GHESP), the Global Universities Partnership on Environment for Sustainability (GUPES), the Promotion of Sustainability in Postgraduate Education and Research (ProSPER.NET), and the Higher Education Sustainability Initiative (HESI). According to a study by Wals and Blewitt (2010) of papers published in the *International Journal of Sustainability in Higher Education* between 2001 and 2010, while earlier papers focused more on environmental management by HEIs, including energy saving and waste reduction, the focus on education and teaching subsequently increased. As the HESI shows in the diagram (Figure), HEIs are now expected to contribute to sustainability not only in their education and campus management but also in research, community development and international networking.

Thus, HEIs continue to have a major responsibility to work toward sustainability, and international networking and collaboration are critical for them to fulfill their roles. However, international mutual understanding of the actual practices, issues, and possibilities of HEIs in sustainability is still limited, especially among Asian countries, partly due to the language barrier. Comparative studies on Asian HEIs in relation to sustainability are necessary for successful collaboration toward this goal, and as a step forward, the author hereby proposes the launch of a comparative research project focusing on "education" for sustainability, often called environmental education (EE) and education for sustainable development (ESD), at HEIs in Japan and other Asian countries, possibly including Korea, Taiwan, and Malaysia.

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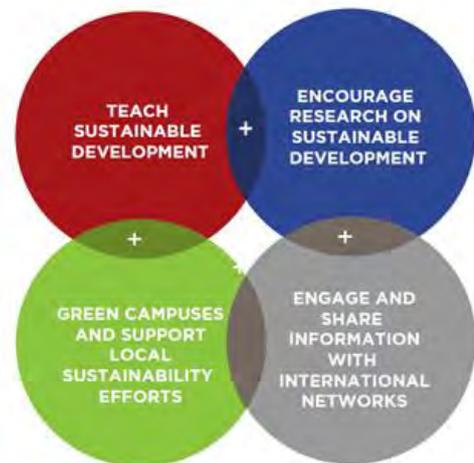


Figure: Roles of HEIs for Sustainability  
(Source: Higher Education Sustainability Initiative,  
<https://sustainabledevelopment.un.org/sdinaction/hesi>, accessed on July 13, 2017)

# Comparative Study on the Environmental Education Promotion Act in East Asia

**Masahiro Saito (Kochi University, Japan)**

**Hideki Sato (Japan Environmental Education Forum(JEEF), Japan)**

**CHANG.T.C. (National Taiwan Normal University, Taiwan)**

Key words : Environmental Education Act, Policy Context of Environmental Education,  
Transformation of Environmental Administration

The purpose of this research is to reveal characteristics of the management of the environmental administration of the two countries under the environmental education act in comparison between Japan and Taiwan. In Japan, Environmental Education Promotion Act was enacted in 2003 and revised in 2011. In Taiwan, Environmental Education Act was promulgated in 2010 and effective in 2011.

When we watch trend of the precedent study in Japan, we understand there is constant accumulation of the study that have been analyzed the enactment process and reform's contexts of the act. We think that it would be possible to carry out the international comparison by analyzing the precedent study carefully. However, it has been apt to research from such a point of view, so they cannot reveal the policy factor on the environmental education of each country. In order to clarify it, it is necessary to focus on the management of the environmental administration and the Environmental Education Promotion Act.

Taking the above matter into consideration, this research has the following two viewpoints. Firstly, it is to marshal the lawmaking effects and policy contexts on Environmental Education Promotion Act. Comparing the legislations on environmental education in Taiwan and Japan, it differs substantially in the binding law. That is, it is almost non-binding of "Try to strive" in Japan, while it is more common in stipulating the obligations of "To do" in Taiwan. It is inferred that it would be dependent on the differences as to how to consider environmental education in the politics and policy in each country. In order to clarify the policy factors of each country in the environmental education, we aim at deciphering the lawmaking, legal revision's effects and policy contexts by collecting and analyzing the precedent studies in Japan and Taiwan, and the government documents which are being posted on the website of Ministry of Environment in Japan and the Environmental Protection Administration (EPA) in Taiwan.

Secondly, it is to clarify the shifts of the environmental administration arose by the legislations and legal amendments on the environmental education, through the interview to Ministry of Environment in Japan and to the Regional Environmental Office divided the nation into seven blocks. We will conduct it from the following two viewpoints; ① how to work the structure to promote environmental education, ② how to be related to various stakeholders among companies, NGOs, schools and citizens, etc. Through the study, we will clarify how the role allotments and relations between the government and relevant players have been built, and how policies and projects on environmental education have been conducted, taking this opportunity on enacting and amending the Environmental Education Promotion Act. With that, we want to reveal the shifts before and after enacting and amending it by the stakeholders, through how the citizen's environmental learning activities have been organized and how the existing environmental education efforts have been developed, etc. This approach will be adopted to explore the shift of environmental education implementation in Taiwan since the Environmental Education Act took effect in 2011.

We will release an interim report as the outcomes of the survey in the research conference of Kanto Branch of JSFEE, at the same time to present it in JJEE-EEA2018.

# Comparative Study of National Park as one of Environmental Education Institutions

Yuki ISHIAYAMA (Gakushuin University) · Yi-Hsuan Tim Hsu (Aletheia University)

Keyword : National park、 Comparative study、 The gap between managers and residents

A national park is valued as a high-quality natural and cultural environment. And also it is a place for managers and local residents to collaboratively engage in environmental education by conducting ecotourism.

In rural areas where the regional economy has declined, it is important that those natural environments shall be protected and designated as national parks by the government, because this designation triggers an increasing value in tourism and a promotion on the public management of the natural environment. Therefore, the designation of national parks can be considered an important approach for preserving landscape and maintaining high-quality environmental education.

However, public management through designation of national parks confronts various problems. There have been instances in which the improvement of public management restricts the ordinary lifestyle of local residents with respect to utilizing the natural environment; usually the residents are not well-informed their obligations and rights because of the top-down approach used by the authority. Further, there are many residents who do not understand the value of nature. Therefore, tours conducted by these residents for visitors could potentially lack of scientific knowledge and environmental educational practices, because these residents put their emphasis on the aspects of tourist services and local economy.

In short, the quality of environmental practice differs depending on whether the coordinator is a resident or a manager of the park. In order to fill in this gap, it is necessary to eliminate the difference in the focus of the manager, who emphasizes the aspects of nature conservation and environmental education, and the focus of the local residents, who place values on the tourism aspect. One of the methods for resolving this is to jointly create an environmental education program with staff and local residents.

In this study, it is focused on a comparison of environmental education program and its construction process between Taijiang National Park located in Taiwan and an equivalent national park in Japan, especially regarding to the perspectives of local residents.

Taijiang National Park has the variety of sites for cultural resources and rich wetland ecosystems. In addition, this park is a place where black-faced spoonbill is wintering each year. So, a local industry “milkfish breeding” is considered to be significant to both the local economy and the environment. Park managers make efforts to protect wetland, that is, to improve economic efficiency. Besides, Taijiang National Park is consistently implementing “Wetland School for EE programs” and “Ecotourism”, they are trying to reduce the gap between local residents and administration.

# Comparison of Forest Education in the Compulsory Schools of Asia from a Global Perspective

**Kazuyo Nagahama, The University of Tokyo, Japan**

**Akira Hiyaue, Iwate University, Japan**

**Kiyotatsu Yamamoto, Iwate University, Japan**

**Hem Gairola, Garhwal Environment and Education Society, India**

**Laxman Satya, Lock Haven University of Pennsylvania, USA**

**Key words:** Forest education, Compulsory schooling, Environmental education, Literary research, Qualitative and quantitative surveys

The present global forest area is approximately 3,999 million ha, which is about 31% of the entire land area (FAO 2015). However, the forest coverage is rapidly decreasing. Some 129 million ha (about 3%) of forest land has disappeared comparing since 1990. This has happened especially in East Asia, South America and Africa. It is noticed that forests and forestry are under pressure from several drivers such as globalization, climate change, green economy and so on. Therefore holistic and integrative approaches are needed, to account for ecosystem services and corporate social responsibility.

These changes have had a considerable impact on the education sector as well as several many other service sectors. Within forest education there is an increasing demand for content knowledge of social effects, generic skills, and environmental education approaches. As a structural change measure, more traditional forestry programs have been merged with other disciplines, or even terminated from some institutions.

The objective of this research project is to produce a scientific policy report on global forest education related to Asia, targeting mainly the compulsory schooling level. The specific objectives are as follows:

1. To analyze the effects of forest curricula on learning outcomes. A specific research question is whether or not learning outcomes from forest science centered curricula are different from curricula focusing on multiple ecosystems.
2. To make a comprehensive analysis on a global scale using up-to-date scientific methods and latest techniques of research.
3. To analyze the possibilities of new developing novel methods and approaches towards enhancing environmental education.

The research is going to comparatively examine selective countries learning and education methods in forest and forestry. It will be based on an understanding of the social background of each country such as religious outlook, perception of nature, environmental awareness, threat, etc. Furthermore, it would contribute to not only environmental education but also global environmental issues such deforestation and degradation of forest lands in developing countries.

# Reconsidering Paulo Freire's Pedagogic Theory on Environmental Education in Japan

Yusuke SAKAI (Kagoshima University)

Key words: Paulo Freire, historicity, subject of the history, Brazil, environmental education

Paulo Freire's pedagogical theory has had a profound influence on education, community development, social movement and many other fields in Asia (Balduino 2012). In Japan, before his work *Pedagogy of the Oppressed* [*Pedagogia do oprimido*] (published in Portuguese in 1970) being translated into Japanese, it had already been read among Kohei Hanasaki, group of Hyogo Kaiho Kyoiku(emancipatory education) Kenkyukai, and Kamagasaki Chiiki Mondai Kenkyukai (Kusuhara 1979). After the publication in Japanese in 1979, Freire's work became well known, and his key concepts "Conscientization", "Dialogue", "Banking Education", "Problem-posing Education" etc., began to expand on adult and community education (Shakai Kyoiku), philosophy of education and so on. The publication of new translation of *Pedagogy of the Oppressed* in 2011, has stimulated further research and re-interpretation of Freire's thought. In case of Japanese environmental education, Toshimasa Suzuki (2009) shows the importance of "Conscientization" by Freire and "Learning Network" proposed by Ivan Illich on environmental education.

In Brazil, Marcos Reigota(2009), a Brazilian environmentalist and educator reveals Brazilian environmental education emerged with social movements in 1970s and was influenced by the political struggle against the military dictatorship (1964-1984) and the Freire's philosophy of education. Furthermore, Marcos Reigota (2003) emphasizes the importance of Freire's key concept "subject of the history" [sujeito da história] on Brazilian environmental education.

This study attempts to describe and compare the characteristics of discussion about Freire's thought on environmental education between Japan and Brazil, focusing on one Japanese young teacher's trajectory from Recife, Brazil to Kagoshima, Japan, based on Freire's key concept "subject of the history".

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