

Beyond the Limitations of Environmental Education in Japan

IMAMURA, Mitsuyuki*

Environmental education has not spread as widely in Japan as expected and therefore has not had any significant impact on environmental problems, even though many educators and researchers have devoted themselves to environmental educational practice. Why is environmental education not popular in Japan, and what does this tell us? The purpose of this paper is to examine the limitations of environmental education, extrapolate the reasons for such limitations, and finally, to suggest a methodology that can make environmental education more significant and useful. First, the insignificance of current environmental education in Japan and its inability to affect serious global environmental problems are examined. Next, the limitations of environmental education in Japan are examined from a historical point of view. Finally, the obstructions to environmental educational practice are revealed and a new approach proposed. The importance of academic skills, interpersonal skills and a philosophy of living are highlighted for this new environmental education approach. Despite discussions on the limitations of environmental education and its inherent characteristics, it is concluded that current school educational practices should be enhanced to ensure that environmental education becomes an education focused on a sustainable future. Therefore, it is first necessary to understand the irresolvable internal contradictions in EE and to dismiss any ideas that environmental issues can be solved through EE. It is also necessary to recognize that it is possible to work towards solving environmental issues by continuing traditional school education in a more careful, better focused manner so as to ensure that the existing EE is incorporated into the overall school education framework

Keywords: environmental education (EE); education for nature conservation (ENC); pollution education (PE); existing style of environmental education (EE)

* Gifu University
e-mail: imamura@gifu-u.ac.jp

1. Superficial Environmental Education

The purpose of this paper is to examine the limitations of the current environmental educational practices in Japan, to clarify the reasons why such limitations exist, and finally, to suggest how environmental education could be more significant and fruitful. The question we need to examine is why the ineffectiveness of environmental education has been overlooked, and whether or not it is possible to make it effective.

To elaborate on this argument, this paper begins by describing the reasons why the present environmental education in Japan has become powerless to solve the environmental problems currently being faced. Secondly, this paper considers the limitations of environmental education in Japan from a historical point of view. Thirdly, it considers the obstructions to effective environmental education, and finally proposes a new dimension for environmental education (EE).

People all over the world are facing serious global environmental problems every day. In fact, global environmental problems such as global warming, acid rain, the destruction of the ozone layer, the loss of biodiversity, and environmental pollution caused by nuclear power accidents seriously threaten not only the lives of this generation but also those of future generations. Human beings living in this era are confronted with these critical environmental problems, and it is vital that we solve these problems as soon as possible for the sake of everyone on earth. All over the world many methods have been implemented to solve environmental problems, such as recycling, reducing fossil fuel carbon emissions, reusing goods, and developing new sources of energy. On the surface, these seem to be effective in one way or another, but none have proven totally effective in reducing environmental problems. Countermeasures against the imagined environmental issues have been examined in the natural sciences, social sciences and humanities, as well as through interdisciplinary approaches.

Naturally, education has been one of these countermeasures. Environmental education (EE) has been expected to play a vital role in seeking solutions to environmental problems. Looking back, since the United Nations Conference on the Human Environment held in Stockholm in 1972, many attempts at “environmental educational activities” have been developed in an attempt to solve environmental problems. In general, EE can be defined as a learning process that increases knowledge and awareness of the environment and of the many challenges associated with environmental protection. EE also develops the necessary skills and expertise to address the challenges, and fosters attitudes, motivations, and commitments to make informed decisions and take responsible action with the necessary information (e.g., UNESCO-UNEP, 1978). The importance of EE has been increasingly acknowledged at the global level.

Nevertheless, the effect of EE in Japan seems to be extremely limited, because there is still only a superficial awareness of the issues with little understanding of the complexity of environmental problems or the impetus to solve them. As Inoue and Imamura point out, schools often emphasize what are called “eco-friendly activities,” but these are merely domestic endeavors or mundane chores in daily life, such as recycling, reusing, reducing, and energy and water conservation (Inoue and Imamura, 2012). “Eco-friendly activities” may have some positive effects on environmental problems, but they also divert student (and citizen) interest from the socioeconomic essence of environmental problems. Further, consider the “just keep in mind strategy.” This strategy is in fact even less dependable than

“eco-friendly activities,” because there are no actual actions attached to it. It could be useful to encourage a slight interest in environmental problems, but it cannot be regarded as the essential solution and is far from a complete solution. If EE in Japan remains on a superficial level, it can never become critical of the society which has generated the environmental problems; therefore, we need to reconsider the effectiveness of both “eco-friendly activities” and the “just keep in mind strategy.”

Surprisingly, there have been few studies focused on the effectiveness of EE. Because little attention has been paid, there remains controversy surrounding its effectiveness. Is there any expectation that EE can solve environmental problems completely or even partly? What is the significance of EE? Is it possible for educators, teachers, researchers, and entire school boards engaged in EE at the local, prefectural and national levels to solve these problems? This paper will explore these questions.

2. Historical background of environmental education limitations in Japan

2.1 Modest Framework of Education for Nature Conservation

The roots of EE in Japan can be traced back to two original fields of education from the early 1950s through the late 1960s; education for nature conservation (conservation education) and pollution education (*kogai kyoiku* in Japanese). The limitations of both have had a critical influence on the present EE. This section surveys the shrewdly hidden, but still continuing limitations of the current EE in Japan. After briefly reviewing the origins and history of the theoretical approaches, it examines how this history has negatively influenced the present.

Education for nature conservation (ENC) has made efforts to encourage people to love and preserve nature. According to Ogawa, the most important purpose of early ENC was to nurture sympathy with nature. Later, the focus of ENC shifted from landscape preservation to the conservation of ecosystems. This idea was gradually accepted by EE, and has since been broadened to include outdoor education. In the late 1960s, “nature observation meetings” were held in many places in Japan (Ogawa, 2009). Although the importance of ENC can never be underestimated as the origin of EE, the practical activities in schools (i.e., nature-based experience learning or learning through experiencing nature), which were based only on the observation and study of nature, paid very little attention to the social, political, and ideological aspects of environmental problems. Further, Ogawa also points out that as nature-based experience learning was never adopted into public school education at the elementary and secondary school levels, it gradually came to be only a “self-referential experience” or a transitory event (Ogawa, 2009). In other words, it would be more correct to conclude that as ENC and nature-based experience learning have long been regarded as “consummatory education”, they had no social aims to solve environmental problems or to connect social problems; however, their effectiveness did not matter at that time.

To discuss the history of ENC as a whole is beyond the scope of this brief paper. However, from the 1960’s until 2000 or so, ENC at schools in Japan did not develop a relationship with the global environmental problems and the social problems linked thereto. It had only a modest framework and was never critical of the contemporary society that had generated most of the environmental problems. In short, it was “consummatory education.” How-

ever, this is not the case at present.

2.2 An Unfortunate Start and the Forgotten Importance of Pollution Education

Let us now turn to pollution education, which is regarded as the other root of EE. There is also a view that the origin of EE in Japan was pollution education (PE). Some books and papers on EE hold that it was unfortunate to have PE at the beginning of the history of EE. Numata, who was the first president of the Japanese Society of Environmental Education (JSEE), was the first to express this opinion (Numata, 1982). He did not explain his opinion in detail, but it is sometimes referred to by other researchers.

Although the practice of PE became popularized first at schools, the term “environmental education” gradually and consistently came into use in Japan. Nakayama analyzes the phenomena and guesses that the term “environmental education” was used to divert the students’ attention from the reality of pollution (*kogai*) (Nakayama, 1993). As is well known, PE was not institutionalized education and has been misunderstood as anti-industrial, sometimes strongly criticized therefore as biased. Fukushima insists that PE was nongovernment education and had diverted from the public school education system (Fukushima, 1993).

How is PE taught in schools today? To begin with, pollution education still takes place in public schools. For example, the majority of junior high school students and high school students know of “Minamata disease” and the “four major pollution-related diseases.” However, they understand these pollution incidents as being in the past and only memorize the information to pass exams. Therefore, they do not think deeply about the relationship between pollution and current global environmental problems. Doi’s investigation offers a clue to understanding such a situation: she researched the actual PE practices in Yokkaichi, finding that there were too few descriptions of pollution problems in the textbook adopted in 2007 for elementary schools and junior high schools (Doi, 2008). Takata, et al. report that upon investigation of PE practices at schools, a member of the Board of Education said that teachers were too busy with the practice of education for sustainable development (ESD) to pay attention to PE (Takata et al., 2012). PE in Japan was developed by teachers and citizens around the 1960s and flourished at one point. Even today we could learn a lot from the teaching materials and curriculum. Nevertheless, even teachers in the cities that have suffered from pollution problems have far less interest in PE than in ESD.

Numata adds that the JSEE started because many engaged in PE were unable to find common ground and subsequently broke away. He finds it unfortunate that the JSEE was created without any PE advocates (Numata, 1993). According to the tenth anniversary issue of the magazine for the JSEE, only 3 percent of members showed an interest in PE over a 10-year span from the formation of the society up to 2001 (Imamura et al., 2001). In 2015, the JSEE published a special issue of the Journal, for the sole purpose of reevaluating PE. The articles in the issue were informative, but it is ironic that if the Society had not published such a special edition, its members might not have paid any attention to PE. In the special issue, Ando points out that EE researchers should reflect on what is known as PE and should reorient EE (Ando, 2015). He also suggests that Japanese EE researchers believed the self-evident premise that the age of PE had ended when EE began. He insists, however, that PE be reconsidered and reevaluated. Nomura reviews 107 papers which appeared in past issues of the Journals of the JSEE, and finds that PE was discussed in only a few papers, and that it was never a part of mainstream EE (Nomura, 2015). While both Ando and No-

mura find the same abandonment of PE, Nomura's analysis clearly shows that the importance of PE has been forgotten.

The limitation of PE is that although it has a strong ideology and has been critical of the polluting society, it has not had a central position in school education. What is worse is that it is now being forgotten. If PE had been the basis of EE, EE today would have stronger grass-roots and might be more effective. Further, as PE had the possibility of developing into an original and well-focused EE program in Japan, it is therefore unfortunate that such a possibility has disappeared (Harako, 1997). Sadly, it has often been the case that a majority of environmental educators in Japan have not fully examined nor given voice to the ideological discourses underlying the environmental educational projects they are putting into practice.

The beginning of EE in Japan was rooted in ENC and PE, both of which played an important role. ENC, however, lacked both a social and global point of view because of historical restrictions and PE has been forgotten, as it lacked any connection to the current EE. Therefore, it can be seen from this brief history why EE is not fully understood and/or practiced in the public education system.

3. Inherent Characteristics of Education for the Environment

3.1 Beyond the Double Bind in Environmental Education

Lucas classifies EE into three categories: education in the environment, education about the environment, and education for the environment (Lucas, 1991), with each category representing one of the roots of EE. ENC as referred to above was education in the environment, and PE was in some ways education about the environment. Lastly, we look at education for the environment.

The question is whether education for the environment that aims to change the world into a sustainable society can be realized. First, "the double bind" of EE is examined to assess the key to this difficult problem. Bowers states that little is known about the double bind of EE and that few teachers (and conceivably also few university professors) recognize it (Bowers, 1995b). If the connections between modern values, behavioral patterns and the ecological crisis are recognized, the first step to transcending the double bind can be made.

The word "double bind" originates from Gregory Bateson's theory of neuro-analysis. For example, when a person is told verbally to do something, quite frequently by an intimate person (for example, a parent or another relative) in early childhood, while simultaneously, receiving a contradictory non-verbal message, the person becomes confused and cannot do anything because they are unable to judge which message is genuine. When a person is told by an intimate person "NO! NO! Just stop it!" while smiling, they become confused. For EE, and especially for education for the environment, the double bind can be defined as the inability to act or judge caused by being bound by two contradictory instructions, such as the often heard messages like "don't waste," "protect the planet," "love nature," which are contradicted by the ubiquitous, "buy more," "new is better," "money is happiness."

In the broadest sense, EE should be viewed as a solution that provides the means to acquire the knowledge, skills, values, and behaviors necessary for individuals, communities and nations to generate sustainable futures. However, simultaneously, as Sterling claims, educa-

tion may ironically contribute to “reproducing an unsustainable society” by being part of the problem as well as the solution. Sterling points out that education has often been accused of playing a part in replicating the dominant social, cultural, political and economic norms that exist within society (Sterling, 1996). Such reproductive cycles help perpetuate unsustainable modes of operation through education. No matter how devotedly teachers instruct students to behave in an eco-friendly manner, it is quite probable students will not follow these instructions as they want to become excellent workers and consumers and live affluent and comfortable lives. If they think the purpose of life is to lead an affluent life, they will never change the way they live. The spread of the coined term “the double bind” in EE helps us understand why EE has not been effective, exposing the barriers to success for EE in changing attitudes.

Orr insists that all education is EE (Orr 1992), a thought that has also repeatedly appeared in Bowers’ papers (Bowers, 1993, 1995a, 1995b). This thought can be interpreted in two different ways. On the one hand, all education is “in some way” EE; on the other, public education promotes capitalistic, materialistic, and hedonistic attitudes and values, and therefore, education in schools could be considered to be “anti-EE.” We should be promoting an ecologically sustainable culture and a social system that exhibits congruous values, attitudes, and most importantly, sustainable behaviors. Only then would it be possible to say that all education is EE and that the EE double bind problem is solved.

3.2 Pitfalls of the Environmental Education Project

As argued above, school education today promotes the values and lifestyles of an ecologically unsustainable society. Any attempt to implement EE against such a backdrop can only lead students into the double bind situation. How can we tackle this situation? First, EE teachers and researchers need to acknowledge that school education is anti-EE. Second, to promote EE as a first step to effectively solving environmental issues, educators need to realize that school education needs to be reformulated at the fundamental level to eliminate the current reproduction of an unsustainable society. Having said that, the current education system is a huge social reproductive device that encourages the development of values focused on modern industrial society, scientific positivism, progressiveness and hedonism. Realistically speaking, therefore, it would be very difficult for EE to resolve such issues as it is only a minor field in educational practice and does not have the same influence over character development as the overall educational practices at schools.

From a pedagogical perspective, EE must be characterized and defined as education for the environment, as the intention is to use education to resolve environmental problems. EE is an educational practice that focuses on the planned transformation (or continuation) of society, rather than promoting activities that exacerbate environmental problems. Therefore, it is necessary that EE encompass ideas that promote a sustainable society for all people. However, I believe it is unrealistic for an EE project to have such lofty and somewhat unattainable educational objectives in the first place, leading to the relatively modest position of ENC and the condemnation of PE’s call for radical social transformation.

There is another inherent characteristic unique to EE which is closely related to the EE double bind dilemma. Specifically, as environmental issues have been caused by modern society’s economic-focused social objectives, the mechanistic view of nature and means-end rationality, attempting to develop an EE project based on these same views would be fruitless.

An EE project in this context would present the causes of environmental problems using a positivist approach and adopt measures based on a mechanistic view of nature to allow the implemented effects to be assessed and measured. The EE project, in fact, came from an idea which prioritized economic activities. Needless to say, it would be more meaningful to design a project that seeks to solve environmental problems. Still, no matter how much we try to empirically clarify the cause-effect relationship, many matters remain uncertain. Further, even if an ideal plan were developed, it might not generate the expected effects. In other words, no matter how effectively an EE project is implemented, it may only have a minimal effect as nature is far beyond the concepts inherent in planning studies. Therefore, if EE solutions were sought based on this mechanistic view of nature or in accordance with an environmental reform plan, they would not be successful.

From a pedagogical perspective, it is not “natural” to use plans to groom students’ commitment to solving environmental problems. How children who have received EE shape the future of society may significantly differ from the expectations of EE educators. Therefore, manipulating nature and controlling children’s growth are not “natural” processes. Further, the question of how to measure efficiency when measuring EE environmental improvement is a difficult and subjective task, as such effects are highly ambiguous.

It must be remembered that the objectives behind EE were not solely aimed at solving environmental issues, but were strongly linked to solving modern industrial social problems. The environment surrounds human society, but does not simply physically exist there as it is inseparable from the philosophy and the fundamentals of the way we have chosen to live and the ontological mechanisms of society. The environment that human society has intentionally and actively created is based on value systems and the commensurate actions related to those values, which have generally led to environmental destruction for the purposes of labor or consumption. Therefore, in our current parlance, the environment can be understood as encompassing several social problems, such as; (i) an artificial form of “nature” that is convenient for a modern civilized society developed in deference to scientific technology; (ii) the regional and global environmental problems resulting from the development of modern civilization; (iii) development problems, poverty, food insecurity, war, human rights offenses and gender issues; (iv) the values and ideologies that assume happiness and quality of life to be paramount and that regard economic development as an absolute necessity; and above all, (v) the idea that economic development and ecological sustainability can go hand in hand. Therefore, as environmental problems are inextricably linked to social problems in the modern consumerist society, it is impossible to limit the scope of EE to merely solving environmental issues, unless solving these social problems are also part of the solution.

First, it is erroneous to believe that students will eventually be able to solve environmental issues when instilled with an environmental consciousness through the EE project. Second, given the limitations of the current procedures for tackling environmental issues and the difficulties in solving the many problems that have led to these issues, we should not be too eager to develop a new and improved EE project. It is necessary now to recognize the limitations of EE and find a path leading to a more effective EE despite such limitations.

4. A Seemingly Contradictory Conclusion Beyond the Limits of Environmental Education

This section presents several EE theories and then comes to a seemingly contradictory conclusion that suggests it is possible to overcome the double bind EE situation through enhancements in current school education systems, after which it discusses an alternative view of the significance of EE.

There have been several basic EE theories. The first theory to be examined is known as environmental scientific EE. While this theory does take a positivist approach and implies that educators need only teach facts, some researchers have argued that it is necessary to teach value-neutral EE (Imamura, et. al, 2003). Logically, however, scientific technology is not value-neutral and the development and use of individual technologies need to be carefully considered, such as in bioethics, environmental ethics and nuclear power. It is, of course, important for educators to teach about the mechanisms of nature and the environment, the facts behind today's environmental problems and the lessons learned from the past PE, but it is not possible to solve environmental problems using only EE, as scientific data is also needed.

The second theory is socially critical EE (Stevenson, 1987 and, Fien, 1993). For example, Bowers, an advocate of the double bind theory, commented that current school education systems and cultures (e.g., values and lifestyles) were responsible for the development of an unsustainable industrial society (Bowers 1993). Although there is much to learn from socially critical EE, this theory has remained theoretical as no methodologies have been developed to strategically examine modern society and its effects on the environment. For instance, there have been no approaches to the building of a sustainable society that critically examine current society either at the grass-roots, down-to-earth democratic citizen level to capitalize on the achievements of PE, or at a political level under the initiative of a government or as part of UNESCO's international initiatives. Further, this theory has failed to clearly define what a sustainable society should look like.

Normative EE, the third theory, seeks to instill in children the notion of a hypothetical "culture and way of life that is sustainable" in both ecological and sociocultural terms. However, the main problem with this theory is the decision as to which ethical and moral orders should be included in a sustainable culture. Further, even if such norms could be established, the problem of relating education to the methodology still arises: for example, how children and adults can be motivated to change their behavior to abide by the norm and to ensure the norm takes root.

As these three theories all have disadvantages, here a fourth theory called communicative EE is presented. Gerhard de Haan, a German academic in the field of EE, has explored the possibilities of communication-based EE that aims to foster citizenship primarily through workshop dialogues (Haan, 1994, 1996). Haan developed a theory of EE in the 1980s that encompassed a "reflective direction" with respect to contemporary culture, and later began pursuing the possibilities of an EE program centered on communication. As Haan pointed out, this approach was limited by the information that could be shared, because participants in these experience-based EE or workshops arrived with biased knowledge regarding the connections between science and society, so may also have been falsely informed regarding environmental issues (Morooka and Imamura, 2010). Therefore, this approach could lead to measures that would not fundamentally solve any environmental issues. However, this ap-

proach is attractive as it is the citizens who form a consensus through communication and pursue methods to solve environmental issues by taking a political approach.

Looking back, it can be seen that some education systems have implicitly and without discussion, criticism or social consensus incorporated specific educational values that have hampered the development of knowledge regarding sustainable societies. Therefore, the best solution is to discard the traditional educational values that promote an unsustainable society and replace them with values that promote the building of a sustainable future: a solution which must be the essence of EE in the future. To ensure reasonable EE, social consensus needs to be achieved with respect to the solutions to environmental problems. As EE has been recognized world-wide as a solution, there needs to be a process that clearly defines its educational purpose and approaches. The essential role of EE is to become involved in a communicative process that seeks to define its educational purpose as a tool for the development of a sustainable future. Here, this is called “process-oriented EE” as EE is itself a process that seeks to define its educational purpose.

Based on the above discussion, what procedures would be necessary to put process-oriented EE into practice? First, society needs to learn to recognize the true causes of environmental issues from scientific and social points of view and the interpretation of factual data. Society must also understand the social, political and scientific approaches for resolving environmental issues, and also the potential of such approaches. Second, students must develop deep insights and the power to think critically, as well as the ability and willingness to communicate with others. Further, if a consensus is reached with respect to solutions to environmental issues, these must be ethical, social, cooperative, and moral to ensure implementation. Thirdly, it is necessary to nurture citizens ready to participate in politics and society. Lastly, people need to be able to determine how to be themselves and live humanely in a sustainable society that is vastly different from the society they currently know. Put simply, it is important to educate people in: (i) academic skills, (ii) interpersonal skills, and (iii) a philosophy regarding their way of life.

Having considered the above, a very simple conclusion would be to enhance current school educational practices. Despite the discussions on the limitations of EE and its inherent characteristics, it all comes back to the structure of the current school education in Japan; however, this does not mean additional suggestions cannot be made.

5. Re-discovering Environmental Education

The traditional EE is “EE that is already there” or “the existing EE”, in contrast to “the ideal EE” in which an idea comes first and what is ‘to-be’ is based on that idea. By 1972, the ideal EE had been envisaged and planned; before and after, there had and have always been “teaching and learning” passed down. However, the existing EE remains buried in people’s education and thoughts. Therefore, re-recognizing and re-sharing this wisdom could dramatically expand the field of EE.

One example of such wisdom was observed in the behavior after the tsunami following the Sumatran Indonesian earthquake (December 2004). When the water receded after the earthquake hit the region, some watched the ocean in shock, some went happily to the shallow water to catch fish without understanding that a tsunami would come, and others ran up

to the mountain when they saw the water receding. Consequently, most of those who went fishing lost their lives whereas those who headed to the mountain avoided the tsunami and survived. The latter knew from oral traditions that they needed to go to the mountain if the water receded rapidly and had adhered to that tradition, so the cycle of life was protected. Wisdom, such as teachings from parents to children and from children to grandchildren and implicit knowledge within communities, is not written in textbooks nor taught at school. Nevertheless, there are people who have survived through gaining such wisdom. There is an inherent “teaching=learning” within societies that protects life, even though the protection may be limited to only a few, with the sole purpose of preventing extinction. EE, therefore, does not have to be based on, or start from, the idea that it should solve all environmental problems. People have been passing down knowledge on how to relate to nature since the beginning of humankind. Therefore, it is necessary to re-evaluate the significance of this practice, even if the number of lives that can be protected is minimal. “Teaching=learning” like “head to the mountain when the water recedes” needs to continue. This sense of mission can appeal to both heads and hearts of those involved in school education who wish to realize a sustainable future.

As well as the exchange of implicit knowledge, the wisdom of the existing style of EE is also reflected in, for example, environmental picture books and Wald-kindergartens. To re-discover the “EE that is already there” which probably existed in pre-modern cultures and to re-recognize the vanishing “teaching=learning” process is a challenge for EE. “Look! EE is already here,” and a process of re-discovery could enrich EE practice and lead to a re-realization of its significance.

The significance of the existing EE could also be highlighted as part of the character formation of people throughout life. As Erich Fromm points out, shaping a social character that is not dominated by a “having mode of existence” but by a “being mode of existence” in the school education system could mesh well with the existing EE (Fromm, 1976). EE’s role is to develop self-knowledge based on a being mode of existence (i.e., I am = What I am), instead of a having mode of existence (i.e., I am = What I have and consume). In other words, EE can nurture people to understand happiness as being with others and nature (i.e., ontological richness) rather than developing people who only believe in utilitarianism or the pursuit of pleasure.

What should be noted here is that it is impossible to design an EE project that intends and plans to build a social character dominated by a being mode of existence. Even if it were possible, and the number of people with a social character dominated by a being mode of existence were to increase, this would not lead to an immediately environmentally conscious society. Although Fromm’s theory is attractive as a theory of social transformation, it would be useless to develop a project that puts this theory into practice. Instead, there is more significance in using the existing education system to teach this way of living.

It is not enough just to solve environmental problems and build a sustainable society. We must survive in this new society “without falling into a state of worthless existence” (Donella et al., 1972). In summary, EE needs to become education for a way of living in a sustainable future. We need to first recognize the irresolvable internal contradictions in EE and dismiss any ideas that environmental issues can be solved through EE. It is necessary to recognize that it is possible to work towards solving environmental issues by continuing traditional school education in a more careful, better focused manner, so as to ensure that the

existing EE is incorporated into the overall school education framework.

References

- Andou, Toshihiko. (2015). Kougaiyouiku wo toukoto no imi, *Kankyokyouiku*, 25(1), 4-13, [published in Japanese].
- Bowers, C.A. (1993). *Critical Essays on Education, Modernity, and the Recovery of the Ecological Imperative*, Teachers College Press, New York.
- Bowers, C.A. (1995a). Toward an ecological perspective, in *Critical Conversations in Philosophy of Education*, Wendy Kohli (eds.), Routledge, New York, 310-323.
- Bowers, C.A. (1995b). *Educating for an Ecologically Sustainable Culture Rethinking Moral Education, Creativity, Intelligence, and Other Modern Orthodoxies* (Sunny Series I). State University of New York Press, New York.
- Doi, T. (2008). Yokkaichino kougai, kannkyokyouiku, Endo et al. (eds.), *Kankyousei no machizukuri; yokkaichikara kangaeru seisakuteigen*, Minerva Shobou, 68-73, Kyoto [published in Japanese].
- Fien, John. (1993). *Education for the Environment: Critical Curriculum Theorizing and Environmental Education*, Geelong Victoria: Deakin University Press.
- Fukushima, Tatsuo. (1993). Kankyokyouiku no seiritoto hatten. *Kokudoshu*, 16, Kokudoshu, Tokyo [published in Japanese].
- Haan, Gerhard de. (1994). Umweltbildung im kulturellen Kontext, Paper 94-101, Forschungsgruppe Umweltbildung, FU Berlin.
- Haan, Gerhard de. (1996). Sustainable Development im Kontext pädagogischer Umbrüche und Werturteile – Eine Skizze, Paper 96-134, Forschungsgruppe Umweltbildung FU Berlin.
- Lucas, A.M. (1991). Environmental Education: What is It, For Whom, For What Purpose, and How?, Shoshana Keiny and Uri Zoller (eds.), *Conceptual Issues in Environmental Education*, Petr Lang, 27-28.
- Meadows, Donella, Dennis Meadows, Jørgen Randers, and William Behrens III. (1972), *The Limits to Growth*, Universe Books, New York, 196.
- Harako, Eiichiro. (1997). Kogai Kyoiku: A Socially-Critical Environmental Education in Japan, *Weaving Connections: Cultures and Environments*, NAAEE, 178-181.
- Imamura, Mitsuyuki, Satoshi Ichikawa, and Naoko Murai, (2001). Kankyokyouiku oyobi gakkai ni taisuru annketo, in *Nihon kankyokyouiku gakkai 10shuunen kinensi, Kankyokyouiku no zahyoujiku wo motomete*, 45-50.
- Imamura, Mitsuyuki et al. (2003). Bob Jickling no jizokukanousei ni muketeno kyouiku hihan, *Kankyokyouiku*, 13(1), 22-30.
- Imamura, Mitsuyuki et al. (2010). Bowers no kankyokyouikuron, *Kankyokyouiku*, 19(3), 3-14.
- Inoue, Yuichi., and Mitsuyuki Imamura (2012). Kankyokyouiku no fukami ni arumono. In Inoue, Y., and Imamura, M (eds.), *Kankyokyouikugaku*, Houritubunkasha, 187-190, Kyoto.
- Morooka, Hiroko and Mitsuyuki Imamura (2010). de Haan no kannkyokyouikuron no shatei, *Kankyokyouiku*, 19(3), 46-53.
- Nakayama, Kazuhiko. (1993). Sekaino kankyokyouiku to sono nagare, in Numata (ed). *Sekaino Kankyokyouiku*, Kokudoshu, 8, Tokyo [published in Japanese].
- Nomura, K. (2015). Nihon ni okeru kankyokyouikukenkkyu no tokuchou to kadai, *Kankyokyouiku*, 25 (1), 82.
- Numata, Makoto. (1982). *Kankyokyouikuron: ningen to shizentono kakawari*, Toukaidai gaku shuppankai, 2-24 [published in Japanese].
- Numata, Makoto. (1993). Nihon kankyokyouiku gakkai no hossoku ni atatte, *kankyokyouiku* 1.1, 2-3.
- Ogawa, Kiyoshi. (2009). Shizenhogo no tennkai kara haseisuru kannkyokyouiku no shiten *Kankyokyouiku*, 19.1, 68-76.
- Orr, David (1992). *Ecological literacy: Education and the Transition to a Postmodern World*, State University of New York Press, New York.

- Sterling, Stephen. (1996). Education in change. In J. Huckle and S. Sterling (eds.), *Education for Sustainability*, Earthscan Publications Ltd, 18-39, London.
- Stevenson, Robert. B. (1987). Schooling and environmental education: Contradictions in purpose and practice. In I. Robottom (eds.), *Environmental Education: Practice and Possibility*, Geelong, Victoria: Deakin University Press. (Reprinted in *Environmental Education Research*, 13(2): 139-153.)
- Takata, Ken.et al. (2012). Kougaikyoku, In Inoue, Y, and Imamura, M (eds.), *Kankyokyokuigaku*, Houritubunkasha, 33-54, Kyoto [published in Japanese].
- UNESCO-UNEP. (1978). Intergovernmental Conference on Environmental Education, Tbilisi (USSR) Final Report.