

# Incorporating ESD into EFL Classes

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## **Abstract**

“Sustainable Development” is a keyword in the 21st century, and UNESCO emphasizes that education is crucial to realize “Sustainable Development” in every country. In this paper, how to incorporate “Education for Sustainable Development” (ESD) into English as a Foreign Language (EFL) classes from the elementary school level to the university level is described. According to UNESCO, there have already been excellent practices at various levels in many countries, and they need to be collected and documented in an organized way for others to share.

ESD has three dimensions: society, environment, and economy. The author will place an emphasis on environmental education because it is most closely related to the health issue of humans, which matters to lives of all the animals and the plants on the earth. The earth is the mother of all living things, and unless our planet is healthy, our good health cannot be achieved. If we are to conserve a good environment for future generations, we must think what a truly happy and healthy life is and dare to change the present value systems. This paper intends to ask this question of every educator.

## **I. Introduction**

The author majored in English literature when she was a graduate student and became interested in Henry David Thoreau’s *Walden*, a reflection upon simple living in natural surroundings. Soon after that, the author happened to work as a TV reporter and made a program on nature conservation of the Redwood forest in California. Then, this work led her to visit Native American reservations all over the United States. The ecological idea of Native Americans that the earth should be maintained in a good condition forever for future generations impressed the author deeply.

At the same time, the author visited Germany several times in the 1980s, and she came to admire the German people as they were keenly conscious of the environment while Japanese were not so aware of environmental problems in those days. She had to pay 5 pfennig if she was to get a plastic bag after shopping. Her host mother carefully divided burnable trash and unburnable garbage and made compost from food waste for her flower garden. The author saw a modernized facility for recycling in the local community. At this time, Germany was much more advanced

than Japan.

Then, she read *Silent Spring* by Rachel Carson and a biography of Tanaka Shozo by Hayashi Takeji. Both of them were pioneers of the anti-pollution movement, respectively, in the U.S.A. and in Japan.

Now, in the 21st century, environmental issues are one of the most urgent agendas for global citizens. Our planet earth is jeopardized, but political efforts to tackle this problem do not seem effective enough. In many cases, giving priority to the economy leads to ignoring the ecology. However, if we think of our ultimate happiness for the whole creatures on this planet, which should be prioritized? The balance between the economy and environment is the most critical point.

“Sustainable Development” is the keyword for the solution, and it has three dimensions: society, environment, and economy. The need to address the issue of sustainable development was highlighted in the Brundtland Report of 1987 and at the Stockholm Conference in 1972. In 1992, for the first time, the United Nations Conference on Environment and Development (UNCED) gave an analytical approach to the concept of sustainable development while the World Summit on Sustainable Development (WSSD), in 2002, further provided its analytical tool.<sup>(1)</sup>

As for Education for Sustainable Development, the author quotes from UNESCO:

Education for Sustainable Development allows every human being to acquire the knowledge, skills, attitudes and values necessary to shape a sustainable future. Education for Sustainable Development means including key sustainable development issues into teaching and learning; for example, climate change, disaster risk reduction, biodiversity, poverty reduction, and sustainable consumption. It also requires participatory teaching and learning methods that motivate and empower learners to change their behaviour and take action for sustainable development. Education for Sustainable Development consequently promotes competencies like critical thinking, imagining future scenarios and making decisions in a collaborative way. Education for Sustainable Development requires far-reaching changes in the way education is often practised today. UNESCO is the lead agency for the UN Decade of Education for Sustainable Development (2005-2014).<sup>(2)</sup>

In this globalized modern society, the stronger economic powers are rapidly increasing their political and economic strength leaving the weaker ones behind. For example, pharmaceutical companies have been neglecting development of medicines for Ebola hemorrhagic fever, which started in Africa in 1976, because it would not be so profitable to develop a new medicine for under-developed countries. More than 7,000 people died of this disease in Africa as a result. It is a matter of human rights.

Unless people can think correctly, the earth will go wrong. In order to enable people to think about the environment, education is the most meaningful and significant measure. Everyone must be taught to take good care of the earth. "Education for Sustainable Development" should be incorporated in every subject, including EFL classes. In order to achieve world peace and conservation of a good global environment, we need to use English as a lingua franca. We cannot achieve this domestically only within a nation. English teachers should lead their students to think about Sustainable Development in their EFL classes and empower their students to send the right message to save the earth in English and communicate with people from around the world as global citizens.

The year 2014 is the last year of the United Nations Decade of ESD. It is admitted that not much has been achieved during the decade. More efforts should be made to make everyone aware of the importance of ESD.

UNESCO also mentions as follows:

Education is essential to Sustainable Development. Citizens of the world need to learn their way to sustainability. Our current knowledge base does not contain the solutions to contemporary global environmental, societal and economic problems. Today's education is crucial to the ability of present and future leaders and citizen to create solutions and find new paths to a better future.<sup>(3)</sup>

Regarding education of foreign languages, UNESCO issued an appeal in 1965 as follows:

The objective of education of foreign languages is not merely teaching the languages themselves but developing learners' intelligence and humanity by the cultural and human sides of foreign language education so that it can contribute to establishment of better international understanding and peaceful and friendly relationships among citizens.<sup>(4)</sup>

UNESCO also made another appeal on education for international understanding in 1974.<sup>(5)</sup> It advocated that we should regard an international dimension and global perspective in education at all levels and in all its forms. It means that even in EFL classes international education should be implemented. International education is the basis of ESD. In the 21st century, the term "global education" is considered to be more relevant than international education.<sup>(6)</sup>

As mentioned above, "Sustainable Development" has three dimensions: society, environment, and economy. In this paper, the focus is to be put on environmental education, and how to implement ESD in EFL classes from elementary school to university is to be illustrated.

## **II. In Elementary Schools**

### **II-1 Global Warming**

The author gave an English lesson to sixth graders at an elementary school in Nagareyama, Chiba with a native-speaking teacher in 2007. The theme was global warming. We started the lesson with pictures and cartoons of polar bears in a predicament. They need frozen ice to stand on before catching fish, but because of global warming, the ice is getting smaller in the Arctic Ocean. Next, the native-speaking teacher showed the mechanism of the North Polar ice melting due to global warming using a hair dryer and ice cubes. She had some students join this experiment. It was hands-on education. Students learned vocabulary regarding global warming and produced a final end-product. They described what they had learned by drawing cartoons. The native-speaking teacher collected the students' cartoons and made up a story about a polar bear which faced global warming.

### **II-2 Greenglish**

In 2011, the author collaborated with a Turkish teacher of English who was dedicated to environmental education in her EFL classes. The project was named "Greenglish" because they taught green ideas in English classes, and they received the EU Language Award for this project. Students learned about marine dumping, sewage and wastewater, underground storage leakages, atmospheric deposition, global warming, oil pollution, radioactive waste, industrial waste, and so on.

At her school, fifth graders held an English Environment Festival. They set up stalls displaying all the craft items and inventions that they made at school and decorated the entire area with environmental slogans and posters. The students entertained the visitors with their songs, dance shows, sketches, and presentations of their inventions. Throughout the festival, the visitors and students learned how to save the environment, and recycling and energy saving ideas. The festival, which was very informative and enjoyable, became a great learning experience for the students. In 2012 and 2013, the author visited the Turkish teacher's school and observed the English Environment Festival and was very impressed with this great idea and the students' performances.

### **II-3 Promoting International Exchange between Turkey and Fukushima**

In 2014, the author and another teacher of English at Toyo Gakuen University launched a new project of international exchange between this Turkish school and an elementary school in Fukushima. The students at both schools were 6th graders. In the textbooks of science and social

studies for 6th graders of Fukushima, environmental issues are dealt with as the keystone for preparation for their learning in junior high schools. She decided to make CLIL (Content and Language Integrated Learning) lesson plans regarding environment. The reason why she used CLIL is that it is the most appropriate method for global education. (Ikeda, 2013)

She involved her students at Toyo Gakuen University in this project and took some of them to the elementary school in Fukushima for teaching practicum. One student was from Okinawa, and the author made a CLIL lesson plan on environment using endangered animals in Okinawa. It was as follows:

<b>Content</b> (内容)	<ul style="list-style-type: none"> <li>* To learn about biodiversity</li> <li>* To learn that several species of Okinawan animals are endangered</li> <li>* To think about what each student can do to solve this problem and create posters with slogans of saving the environment with group members</li> <li>* To learn about what Turkish students do in their “Greenglish” project</li> <li>* To learn about the international NGOs to protect nature</li> <li>* To create posters with slogans to save the environment in English and share them with Turkish students</li> </ul>
<b>Communication</b> (言語)	<p>[Language of Learning]</p> <p>coral /coral reefs / dugong / Iriomote Wildcat / island / ocean /how many / live / stop /global warming /survive / endangered / save / environment / energy / car accidents /biodiversity / international / NGO</p> <p>[Language for Learning]</p> <p>Look at this map! How many islands are there in Okinawa? About 160 Look at this photo! What’s this? → It’s a coral. Why are corals endangered? (Students’ answers can be Japanese, but the teacher replies in English.) What’s this? → It’s a dugong. Why are dugongs endangered? (Students’ answers can be Japanese, but the teacher replies in English.) What’s this? → It’s an Iriomote Wildcat. How many Iriomote Wildcats are there? (Students’ answers can be Japanese, but the teacher replies in English.) Why are they endangered? (Students’ answers can be Japanese, but the teacher replies in English.) What can we do to stop global warming? (Students’ answers can be Japanese, but the teacher replies in English.) What can we do to save the Iriomote Wildcat? (Students’ answers can be Japanese, but the teacher replies in English.) Why is biodiversity important? (Students’ answers can be Japanese, but the teacher replies in English.) What do Turkish students learn in “Greenglish” classes? (Students’ answers can be Japanese, but the teacher replies in English.) What does WWF do to save endangered animals? (Students’ answers can be Japanese, but the teacher replies in English.) Let’s take care of the earth. / Let’s save the environment. / Let’s go green.</p> <p>[Language through learning]</p>

<b>Cognition</b> (思考活動)	<ul style="list-style-type: none"> <li>* To have students think why these animals are endangered</li> <li>* To have students think what they can do to save them</li> <li>* To have students think about the importance of biodiversity</li> </ul>
<b>Community</b> (協学) / <b>Culture</b> (文化・国際理解)	<ul style="list-style-type: none"> <li>* After thinking alone, students make groups of four and discuss the problem and create posters to express their slogans to save the environment with group members.</li> <li>* To have students learn about the international NGOs and realize the importance of international cooperation</li> <li>* To learn about the environment with Turkish students</li> </ul>

Table 1: 4Cs of CLIL lesson plan on endangered animals in Okinawa

The author simplified English sentences from an English textbook on Okinawa. First, the teacher, who was a Toyo Gakuen student from Okinawa, showed a photograph of a strange-looking coral and asked what that was. It was probable that the 6th graders could not answer, and she showed the second photograph of coral reefs with a lot of fish. Then, the 6th graders could know the answer. These photographs were taken by the author near Miyako Island in Okinawa. She explained that the number of the kinds of corals in Okinawa is the biggest in the world. However, she added the fact that the coral in Okinawa is dying and asked students why that was happening.

Next, the teacher showed a photograph of a dugong and asked what it was. It is a rare sea creature whose habitat is around Okinawa. She asked why dugongs are endangered. Students learned that if the Futenma Air Base is to be relocated to Henoko, the ocean environment near Henoko would be damaged and dugongs are to be further endangered. The 6th graders noticed that the natural environment is damaged by humans' actions.

The third photograph was of an Iriomote wildcat. The teacher asked students how many wildcats they thought lived on Iriomote Island. The answer was only about 100. They are found only on this island. That is because the islands of Okinawa were a part of the Eurasian Continent in ancient times, and then, the sea level rose and the islands were separated from the main continent. Iriomote wildcats were left alone on this island. Fortunately, they had no predators and could survive. However, they are now an endangered species. The teacher asked the reason to students. It is because more wildcats came to get killed in car accidents as the number of tourists has increased.

The 6th graders thought about why biodiversity is important and what they could do to save these animals. They learned about what Turkish students do in their "Greenglish" classes and also learned about international organizations that work to save endangered animals. Students thought of slogans expressed in English and created posters with their drawings. They also wrote letters in English to WWF (World Wildlife Fund), the leading organization in wildlife conservation.

The next CLIL lesson on environment for the 6th graders of the Fukushima elementary school was about energy. The lesson plan was made by Takizawa, the author's partner of this project. The objective of the first class was to think about the students' daily use of electricity. First, they thought of the electric appliances they use every day. They went on to think what they would do if electricity stops. At the end of the class, they reflected on how they use electricity in their daily lives.

The objective of the second class was to learn about various kinds of generation of electricity and the percentage of electricity generated by each method. At the beginning, students mentioned how electricity is generated and classified the ways of generation of electricity with reasoning. Then, they learned about fossil energy and natural energy. They read a graph of electricity ratio generated by each method and thought about which part is occupied by what kind of electricity. They went on to read graphs of the same content from various countries and think about the differences.

The objective of the third class was to think about sustainable society. The teacher showed a video clip of an NHK TV program of science for 6th graders dealing with the generation of electricity. The students were divided into groups and discussed how they wanted to use energy and what kind of energy they wanted to use. They made posters and presented them to the class. The students at this elementary school in Fukushima visit the Minami-soma Solar Agri Park for experiential learning when they are 5th graders. They can get inspiring information from this visit as well.<sup>(7)</sup>

#### **II-4 Garbage**

The author made another CLIL lesson plan on the environment for elementary school students with another teacher. It was published in a textbook entitled *Your World* in 2010. The topic is "garbage." First, students enjoy a shopping game and buy some things with toy money using their own eco bags. The target sentences are "How much is that?" "That's 800 yen." "What did you buy?" "We bought \_\_\_\_\_ and \_\_\_\_\_." The students think of what is left after these things have been used. The target sentences are "What is left over?" "We have \_\_\_\_\_ and \_\_\_\_\_." For example, if they bought a soft drink and a can of tuna, they have an empty plastic bottle and an empty can as waste. Then, they ask themselves: "Is this garbage?" And they notice that they can recycle them and they can decide they are not garbage. In the last stage, students learn the three words: "recycle," "reuse," and "repair" and the sentence "We should reduce garbage." The students can check what their family members have bought and can trace what happens to the items that are bought in their real lives. If the English lesson on garbage is connected to a school subject, the students can deepen their learning. Generally, 4th graders study

about disposal of garbage and recycling in the period of social studies.

An elementary school teacher in Aichi Prefecture implemented this lesson plan. Her students learned about civil servants who support people's daily lives in the period of social studies when they were in the first semester of the 4th grade. The students made field trips to a garbage disposal factory and a sewage system museum. In the period of science, they learned about seasons and living things and became aware of environmental issues. In the second semester of the 4th grade, they researched the relationship between garbage dumping and sea creatures in the period of integrated studies. They made an original play and performed it in front of their parents and the other students. In the third semester, the students made slogans in English to conserve nature, created a video letter, and sent it to British students.

Thanks to this project, her students had meaningful experiences to express their own thoughts in English, which motivated them to study English harder when they became 5th and 6th graders. This project was made possible because the homeroom teacher was able to integrate her students' learning from other subjects and their school events into foreign language activities.<sup>(8)</sup>

#### **II-5 Thinking Skills and Expressive Skills**

According to the Ministry of Education, Culture, Sports, Science and Technology (MEXT), when they revised the course of study in 2008, they emphasized the importance of improving students' thinking skills, judging skills, and expressive skills because the results of the PISA test had shown that Japanese students were weak in those skills.<sup>(9)</sup>

Arimoto (2008a) contended that Japanese students are not good at solving PISA test questions to challenge their thinking and not good at expressing opinions because Japanese people do not do this much in their communication styles. Arimoto (2008b) also maintained that Japanese students should improve their reading skills so that they can express their own ideas based on what is written in reading materials, which is necessary to improve the Japanese people's international communicative competency.

Nowadays, elementary school students read about the environment and natural energy in their Japanese language classes. Their Japanese textbooks have several units on the environment. In science classes, the last units for 6th graders are electricity and environment.

EFL lesson plans can be made referring to what students have learned in those subjects. Content and Language Integrated Learning should be the most appropriate approach. The 4Cs of CLIL are content, communication, cognition, and community/culture. Students learn both the content and the language and think about the theme using collaborative learning. By 2020, MEXT is to start the new educational system whereby 5th graders and 6th graders are to study English three times a week. It is expected that one class should be taught by CLIL. The author recom-

mends that English lessons on the environment should be implemented in many elementary schools.

### III. In Junior and Senior High Schools

#### III-1 Severn Suzuki

The author has checked English textbooks for junior and senior high school students and has found out that they are full of good resources to learn about the environment. Some units deal with sea level rise due to global warming, eco-tourism of Costa Rica, electric cars, solar power and wind power, living with forests in Finland, the 3Rs in Germany, protecting nature in the Kushiro Wetlands, energy and the environment, global warming related to Michio Hoshino's enchanting photographs of polar bears in Alaska, beautiful corals in Australia, an African boy who built a windmill to make electricity for his family at the age of 14, Rachel Carson, Wangari Maathai, Lester R. Brown's Eco-economy and more. One of the most popular topics is Severn Suzuki.

A junior high school teacher named Kakuzaki in Hiroshima delivered an English lesson on Severn Suzuki to 8th graders. The textbook is *Sunshine 2*, and it is Program 7. She began her class showing a photograph of Severn Suzuki and introduced her as follows:

"Do you know her? Her name is Severn Suzuki. Suzuki is a Japanese name. She is a fourth generation Japanese Canadian. She is 34 years old now."

Then, she showed another photo of Severn when she was 12 years old and said, "When she was 12 years old, she gave a legendary speech at the Earth Summit in Rio de Janeiro in 1992. Well, let's watch the speech together." She continued her talk with interaction with her students. After the oral introduction, she showed the video of Severn's speech. The students watched the video and listened to her English attentively and were moved by her power of speech. The first sentence of her message "I am fighting for the future," impressed the students.<sup>(10)</sup>

What she advocated in her speech should be learned by everyone from young learners to adults. At the age of 9, she founded ECO, the Environmental Children's Organization. As a 12-year-old girl, she begged adults to stop destroying the environment if they did not know how to fix it in her speech at the Earth Summit.

Severn's speech is cited in a number of English textbooks for senior high school students as well. At Toyo Gakuen University, Professor Furuya, who teaches environmental studies, and the author teach Severn's message in their classes. He teaches it in Japanese while the author teaches it in English. Their students learn the same content in a spiral manner and remember the teaching well.

### III-2 Energy and the Environment

The following is a reading material entitled “Energy and the Environment” for 9th graders in a textbook *Total English 3*. The content and the message are exactly what Takizawa and the author taught 6th graders at an elementary school in Fukushima. (see pp.6-7)

We use a lot of energy every day. Many things need energy. Things in our homes use energy, for example, TVs, computers, heaters and air conditioners. Also, trains, cars, ships and planes use energy.

In Japan, 46% of the energy comes from oil, 21% comes from coal and 17% comes from natural gas. Oil, coal and natural gas are fossil fuels.

Fossil fuels are necessary for our lives, but they have some serious problems. First, when we burn fossil fuels, they produce greenhouse gases. Greenhouse gases cause global warming. Second, fossil fuels produce pollution like smog and acid rain. Third, we cannot keep using fossil fuels forever. Some day, we will run out of them.

What can we do about these problems? There are three ways to solve them.

First, we need to use different kinds of energy. Two kinds of clean energy are wind power and solar power. They don't produce greenhouse gases.

Wind power is energy from the wind. Today a lot of energy is produced by wind towers. They are used in the U.S., Germany, Spain, China, India and many other countries, including Japan.

Solar power is energy from the sun. Some homes have solar panels. These panels collect the sun's energy.

Second, we need to use less energy. In Japan, about 34% of the energy is used in offices, stores, schools and homes. So, we should start saving energy. How can we do this? We can turn off the lights when we leave a room. We can unplug things when we don't use them. We can turn down air conditioners and heaters.

Finally, we need to reuse things and reduce waste. A lot of energy is needed to produce things and remove waste.

By saving energy we can save our environment and ourselves. <sup>(11)</sup>

When the author gave an English lesson to 6th graders at an elementary school in Fukushima, the theme was Okinawa. The textbook quoted above has a photograph of a solar power and wind power plant in Okinawa, and the author used the photograph and introduced some simplified English sentences from this textbook. The author hopes that when the 6th graders at this elementary school become 9th graders and learn again about energy, they remember something

from the author's lesson.

In an English textbook for senior high school students, Lester R. Brown's advocacy of "eco-economy" is dealt with, and students can deepen their understanding about sustainable development. Lester R. Brown visited Japan and appeared in an NHK TV program in 2011. The program is "Close-up of the Modern Society", and it can be watched on YouTube. He is one of the most famous and great pioneer environmental analysts and founded the Worldwatch Institute and the Earth Policy Institute. He published *Eco-Economy: Building on Economy for the Earth* (2001) and *Outgrowing the Earth: The Food Security Challenge in an Age of Falling Water Tables and Rising Temperatures* (2004) and rang the alarm bell for food crisis. When people in the United States turned to bioethanol too ardently, a shortage of corn occurred, which drove Mexican people to a food crisis. He maintains that the life style of 800 million people whose annual incomes are over 30,000 U.S. dollars can severely affect the lives of 2 billion people whose annual incomes are under 3,000 U.S. dollars. Rapid population growth in developing countries will make it even more difficult for them to solve economic and environmental problems. A 3% growth in population per year, a rate that countries like Kenya and Saudi Arabia still have, leads to a doubling of the population in 24 years. If a country doubles its population every 24 years, it is very difficult to provide everyone with enough food and water, or education and health services.

The world economy continues to grow year by year, but the earth's resources on which our economy depends do not. We need a vision of what an environmentally sustainable economy, an eco-economy, would look like.

### **III-3 ESD at a Senior High School**

A senior high school teacher named Ms. Onogi in Osaka used CLIL and had her students write 500-word essays about ESD and present with Powerpoint in her EFL course.

She used authentic materials and introduced a topic of environmental issues to begin with. Then, the students had discussions in English regarding the topic in the class. They worked in pairs and groups. They wrote essays as homework and presented them for the group members. The representative of each group made a presentation in the class so that all the classmates could share it. The goal of her course was that students could write English essays which were composed of several paragraphs to express their own ideas and opinions.

At first, the students wrote one paragraph as their homework when they finished one unit of the textbook. The students deepened their learning in Japanese in the classes of integrated studies as well. She employed not only the textbook but also used YouTube. The students used the target language when they wrote essays in English. The textbook was *CROWN English Expression I*, and the units she dealt with were about great inventions, saving polar bears, an NGO named MSF

(“Doctors without Borders” in English) and Rachel Carson’s *Silent Spring*.

According to Ms. Onogi, the students were 10th graders and had not studied English writing yet. However, their writing skills made great progress in this class. The videos from YouTube were stimulating and effective to encourage students to discuss. They memorized well what they had to say and enjoyed the final presentations using Powerpoint. The only problem was that she could not spend enough time to have the students practice the target grammar.<sup>(12)</sup>

At Toyo Gakuen University, the author also teaches Rachel Carson’s *Silent Spring*. English teachers at the university level should recycle significant global topics which are covered in English textbooks for junior and senior high school students so that the students can review and deepen their learning.

## **IV. ESD in EFL Classes for University Students**

### **IV-1 Kenya**

The author teaches human rights, environment, and peace in a new program named “International Career Program” at Toyo Gakuen University. Every lesson deals with an important issue of ESD. When she delivered a class on Kenya, it covered multiple aspects of ESD.

As for children’s education in Kenya, primary education from the 1st grade to the 8th grade became compulsory in 2003, but not all children can go to school. Some of them have to work for their families instead of going to school, and others are not allowed to school because they have no cash. Primary education is supposed to be free, but students have to purchase their textbooks, stationery, and school uniforms. Furthermore, teachers often collect money from students to pay for extra teachers or teaching materials. To make matters worse, teachers often go on strike to obtain salary rises, and the schools are closed for several days during their strike.

Bribery is a matter of course at every level. The President leads a luxurious and corrupted life while most people are starving. Their society needs to be changed. Men generally have more advantages than women, and girls have fewer opportunities to be educated.

Owing to the lack of education, people are ignorant of serious diseases such as malaria, HIV/AIDS, or Ebola hemorrhagic fever. Most people use unclean water from rivers, and a number of children die because of diarrhea.

Many farmers do not know how to make farming more profitable. In a developing country like Kenya, job opportunities are very limited. People stay poor and have little money. However, they want to use modern devices such as mobile phones and desperately need cash.

This is the reality in Kenya, but this country produced an excellent environmentalist named Wangari Maathai. She is the first African woman who received the Nobel Peace Prize in 2004. During her visit to Japan, Maathai saw Japanese people try to use limited resources efficiently.

Also, she heard many Japanese say that using things once and then throwing away is “*mottainai*”. The following is quoted from a textbook for high school students:

When I learned the concept of *mottainai*, I immediately knew it would be an important element of my message to the world. I like the spiritual roots of *mottainai*. I also like the fact that it captures in one term the 3Rs---Reduce, Reuse, and Recycle---for which we environmentalists have been campaigning over many years. If we reduce our consumption of resources, reuse everything we can, and recycle what we cannot use again, then we can hope to reduce the serious threats to the ecosystems which we all depend on.

The 3Rs are both practical and visionary. They are not just for governments or industries; they are for everyone, and can apply to all facets of our lives. People often ask, “What can I do?” I believe that one person can make a difference. The 3Rs are essential to ensuring a healthier, cleaner world for ourselves and for the generations to come.

by Wangari Maathai<sup>(13)</sup>

Dr. Wangari Maathai is an outstanding role model who was a dedicated environmentalist and did her best for sustainable development. She combined environmentalism and social activism. In 1977, she organized an NGO named “Green Belt Movement” to follow her dream of a better world. She and her NGO members mobilized poor women to plant more than thirty million trees and provide income for more than eighty thousand households. She tried to make her country more democratic by encouraging people to participate in politics and raising the status of women. Despite being imprisoned and beaten for defending nature and human rights, Maathai courageously continued to plant seeds of peace. In 2011, she died after a long struggle with cancer at the age of 71.

The author met two young women during her visit to Kenya and asked them if they knew Wangari Maathai. Both of them knew her because they had learned about her at school. The following is an essay about Wangari Maathai written by one of them:

Mrs. Wangari Maathai was a Kenyan lady. She was a black lady who lived in Kenya. And very famous lady. She loved conserving environment. Because of her job, she started Green Belt Movement. Purpose was to plant all trees that were lost on the earth. Because of this, she won a Nobel Prize.

She was a great leader and she hated corruption that is why she opened a political party. She was a member of parliament and she was minister on environment. She was professor before all men were professor in her times.

She said when she will die she will not be put in a coffin of wood because she didn't want to spoil trees in the earth just because of her. But I do not know why they burnt her dead body like all other people outside the country.

We will not forget her because she always appears in the television. We loved her and God also loved her.

by Summary Serah (13 years old)<sup>(14)</sup>

The author invited a guest speaker to her lesson on Kenya. The guest graduated from Toyo Gakuen University in 1996 as one of the first graduates of the university. She lived and worked in Kenya for several years and is now engaged in fair trade of Kenyan tea. She talked about the history of the British Empire colonizing India, Sri Lanka, and Kenya, which were made tea-producing countries. However, the British settlers contrived to monopolize the tea industry, and common Kenyan people were barred from planting tea. An intern from the United Kingdom attended the class and was shocked to learn the history of his own country. The guest also explained that the tea which her company deals in is free from chemicals and that the tea workers are paid wages fairly as they organized a cooperative run by themselves.

#### **IV-2 ESD Lessons Using Films**

Another lesson on environment is *An Inconvenient Truth*, a 2006 Academy Award winning documentary film directed by Davis Guggenheim about former United States Vice President Al Gore's campaign to educate citizens about global warming via a comprehensive slide show.

Since the film's release, it has raised international public awareness of climate change and reenergized the environmental movement. Al Gore received the Nobel Peace Prize for the achievement. The film was such a great success that it has also been included in science curricula in schools around the world, which has spurred some controversy. It was highly evaluated regarding the point that he has made an impact on people about global warming after President Bush's denial of the fact, but it was criticized that some data were intentionally controlled to make it more sensational.

In an English reading textbook for senior high school students, there is a passage entitled "An Inconvenient Truth," and the author used the text in the class after showing a part of the film in order to develop the students' reading skills to analyze the organization of an English paragraph. They had to identify the topic sentence and find the connected sentences by cause and effect. They were also encouraged to practice their critical thinking skills. Thus, students could foster reading skills as well as learn about environment.

Another interesting film which refers to the environmental movement is *Erin Brockovich*.

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Erin Brockovich is an American legal clerk and environmental activist. The film which bears her name deals with her real lawsuit she made against an industrial company. The case alleged contamination of drinking water with hexavalent chromium in the southern California town. The case was settled in 1996 for 333 million U.S. dollars, the largest settlement ever paid in a direct-action lawsuit in U.S. history.

The students in the International Career Program at Toyo Gakuen University learn about unsafe drinking water in Gaza, Israel in the textbook they always use in the class, and they know about unclean water from rivers in Kenya. Yet, this problem can happen even in developed countries if people do not watch companies which prioritize profit-making over people's safety and health. Students should learn about anti-pollution movements both in Japan and in other countries. In an English textbook for senior high school students entitled *Cosmos II*, students learn about Rachel Carson and more women fighters for the environment such as Lois Marie Gibbs, who fought for people's health against an industrial company in New York State, or Theo Colborn, who went back to school in her fifties to explore the deteriorating ecosystem and published a book entitled *Our Stolen Future* (1996) to emphasize the danger.

Teachers at all levels from elementary school to university should input meaningful information to students, spur them to conduct research by themselves, have them continue to learn more with curiosity and a strong sense of justice, encourage their critical thinking and motivate them to do whatever they can to make the world a better place.

## V. Conclusion

As Rachel Carson raised the question, we are now at the fork of the road. The following is a quotation from *Silent Spring*:

...We stand now where two roads diverge. But unlike the roads in Robert Frost's familiar poem, they are not equally fair. The road we have long been traveling is deceptively easy, a smooth superhighway on which we progress with great speed, but at its end lies disaster. The other fork of the road — the one less traveled by — offers our last, our only chance to reach a destination that assures the preservation of the earth. (p.277)

The first step in creating an eco-economy is to change our present throw-away economy to a reduce-reuse-recycle economy. Most companies have been running on the principle of mass production and mass consumption. We have been buying more and more items tempted by enticing advertisements. Now, it is high time to reflect on our life style and think what is the most valuable for us and for the generations to come. We have to think about energy and change from

fossil fuels to regenerative power.

We can learn from good practices in other countries like Germany, Sweden, and Denmark. In Kalundborg in Denmark, a network of materials and energy exchanges between factories has been formed. For example, the leftover ash from a power station is used as raw material by a cement manufacturer. The German way of educating children named *Waldkindergarten* (kindergarten in woods) developed from Denmark as well. It teaches children the importance of fostering the five senses and sensitivity to beautiful nature, which will lead to environmental education. The educational activities conducted at “Eco-station” in Freiburg, Germany for children are regarding living things, healthy diets, garbage, making nests for birds and solar energy, which show us a leading model of environmental education. In Sweden as well, there are a number of innovative projects to promote environmental education such as a “Green Flag” system offered by an organization named Keep Sweden Tidy.

On the other hand, Japan can spread and export its efficient technologies for the environment to other countries. New industries related to environmental technologies offer employment opportunities. Thus, Japan can contribute much to the world. At that time, English language is to be used as a lingua franca, and Japanese people who go overseas to work will need good communicative skills.

We Japanese are disadvantageous in learning English because of the linguistic distance between Japanese and English. In addition, our culture has made much of silence or communication without words, which also functions as a disadvantage for language learners. However, the author believes we can overcome our shyness of using English if we can take pride in what we try to convey and what we do for foreign people. The significance of the content students learn in EFL classes should empower them as global citizens.

Environmental problems cannot be solved within one country. World peace, which is essential for sustainable development, cannot be achieved without fraternity and international cooperation. War is the worst thing to damage our environment. The year 2015 is the 70th anniversary of the end of World War II, which is good timing to learn about peace and environment in every class in all countries. EFL teachers are encouraged to deal with meaningful global issues in their classes so that their students can present logical and persuasive statements to the world in English. As Nelson Mandela said,

“Education is the most powerful weapon you can use to change the world.” (Nelson Mandela).<sup>(15)</sup>

### Notes

- (1) <http://www.uncsd2012.org/content/documents/SDRA1%20managing%20land-based%20resources.pdf#search='processes+and+pathways+to+achieve+sustainability%2C+Bruntland+Commission+Report'>
- (2) <http://www.unesco.org/new/en/education/themes/leading-the-international-agenda/education-for-sustainable-development/>
- (3) <http://www.unesco.org/new/en/education/themes/leading-the-international-agenda/education-for-sustainable-development/sustainable-development/>
- (4) <http://unesdoc.unesco.org/images/0014/001478/147810eb.pdf#search='UNESCO+Appeal+1965'>
- (5) [http://portal.unesco.org/en/ev.php-URL\\_ID=13088&URL\\_DO=DO\\_TOPIC&URL\\_SECTION=201.html](http://portal.unesco.org/en/ev.php-URL_ID=13088&URL_DO=DO_TOPIC&URL_SECTION=201.html)
- (6) Cates, K. (2012). *Global Issues in Language Education Newsletter # 83*. p.24.
- (7) Takizawa, M. (2014). “Energy” presented orally at an ESTEEM meeting.
- (8) Fukuoka, N. (2012). “Environmental Learning and Creating Slogans on Ecology in English” presented orally at a JES conference.
- (9) [http://www.mext.go.jp/component/a\\_menu/education/micro\\_detail/\\_icsFiles/afieldfile/2010/10/20/1261-37\\_12.pdf](http://www.mext.go.jp/component/a_menu/education/micro_detail/_icsFiles/afieldfile/2010/10/20/1261-37_12.pdf)
- (10) Kakuzaki, H. (2014). “Legendary Speech” in *The New English Classroom # 542*. pp.30-31.
- (11) Yoshida, K. *et al.* (2014). *Total English 3*. pp.48-49.
- (12) Onogi, Y. (2014). “CLIL Lesson Created Originally” in *The New English Classroom # 542*. pp.15-17.
- (13) Ando, S. *et al.* (2008). *Mainstream English Course II*. pp.7-8.
- (14) When Ms. Maathai was cremated, it was very shocking to Kenyan people because interment is common in Kenya.
- (15) <http://www.unesco.org/new/en/education/themes/leading-the-international-agenda/education-for-sustainable-development/>

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