

**Developing and Implementing an Inquiry Based Global Environmental Education Program of Omoso Elementary School through collaboration with community, specialist organization and American School**

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Good afternoon. I am delighted to have the opportunity to share my activities and perspectives with many specialists from Asian /Pacific countries and Japanese educators today. I would like to thank Miyagi University of Education, Fulbright Memorial Fund, United Nation University and other institutions for the collaboration to hold this conference.

Kesennuma Omoso Elementary School aims to design a global inquiry-based environmental education program. Omoso Elementary School researched and developed an international collaborative environmental education program with Lincoln Elementary School in Madison WI USA, linking with Miyagi University of Education and other institutions to draw on expertise from environmental and educational specialists.

Today, I will focus and discuss the significance of this program and these linkages, the steps in forming our network, and how we developed and carried out our Master Teacher Program project thanks to these linkages.

Introduction:

**Schools need to link with outside organizations such as universities.**

School education in Japan is undergoing huge reforms. In keeping up with a changing society, the government has recognized the need to train children to be rich in heart and able to contribute to society, acquire the basic skills for educating themselves, and cultivate their "zest for living." The New Course of Study, in effect April 2002, addresses these needs by implementing a complete five-day school week and requiring schools to set aside time for integrated studies.

In order for schools to realize and reap the benefits of these reforms, it is essential that teachers go beyond school walls, establish links with community and specialist organizations and institutions, and promote educational activities with the support of a broad partnership framework. In particular, with integrated studies programs such as environmental education and international understanding, schools devise and implement their own original learning programs, creating and realizing distinct, unique educational activities. By involving universities and other specialist organizations in this process, teachers can apply the latest expert knowledge, techniques, data, information, and research findings to their teaching and curriculum in pursuit of more in-depth and comprehensive learning programs.

When all parties form linkages, collaborate to create and implement learning programs, and cultivate these relationships, we realize learning programs tailored to the individual learning styles and educational needs of each child, expanding possibilities and opening doors for our students and education. Building this new education networks meets the needs of the future.

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**Section 1 Developing and Implementing a Global Environmental Education Program Supported by Linkages with Specialist Organizations: Omore's Linkages with Miyagi University of Education, other organization and community through the M.T.P**

**1. Outline of the Omore Elementary and Miyagi University of Education Connection**

In 2002, with the complete implementation of the New Course of Study for schools in Japan, public elementary and junior high schools were required to establish Integrated Studies periods based on their own creative initiative.

Also in 2002, Omore Elementary School participated in the Fulbright Memorial Fund Master Teacher Program (MTP) and carried out environmental education projects.

At Omore Elementary, we centered our Integrated Studies Period on the development and implementation of our international E.E. projects. We expanded the curriculum and the MTP project to incorporate environmental education, previous international understanding and information education curricula. We aim to build a comprehensive Global Inquiry Environmental Education program, that embraces the environmental education project, international understanding activities and information education.

To realize our learning program, we established linkages with environmental and education specialists, beginning with Miyagi University of Education, to support our new program.

Starting this project, Kesenuma City Board of Education and Miyagi University of Education formally promote the development and growth of the linkage between Miyagi University of Education Environmental Education Center (EEC) and Omore Elementary School.

From 2002 to now 2004, Omore Elementary School formed a partnership with Lincoln Elementary School in Madison, WI with the aid of the Fulbright Memorial Fund, Japan-U.S. Educational Commission. Under the Master Teacher Program, Omore and Lincoln engaged in joint environmental projects. We based our collaboration on U.S. (Wisconsin) and Japan (Miyagi) water environments and their effect on human life. Each grade level decided on a theme for their project, created a pair project, interacted via the Internet and engaged in joint learning activities.

In order to launch this project, we had instructors from the Miyagi University of Education Environmental Education Center, Sendai-City Science Museum, Shizugawa Nature Center participate in each project. We also had many volunteers from city office, industrial company, nature school, and volunteer party in community cooperate on our project. They offered advice and support from their respective fields of expertise. They support us in all aspects of our projects, providing us information and technology support and giving us access to a wide range of resources, information, and materials. Their resources in turn help Omore Elementary engage in sophisticated and effective research and learning in our Inquiry Based Global Environmental Education Project.

Furthermore, through our MTP pair projects with Lincoln Elementary School and Miyagi University's International Environmental Education Symposium, we came to develop a linkage with Lincoln Elementary School's supporting institute, the University of Wisconsin

## **2. Promoting the Omore Elementary Connection with Miyagi University of Education and other specialist institutions through the Master Teacher Program**

The collaboration with Miyagi University of Education through MTP project is as follows.

- 1) Experts guided and advised us on the development of our MTP project and environmental learning program.
- 2) Omore sought instructors to teach and facilitate
- 3) University instructors taught as guest teachers in Omore classrooms.
- 4) Experts provided advice and guidance on the use of information technology such as Cyber Maps and Web Pages in environmental education.
- 5) Professors shared research with Omore to serve as a reference and example.
- 6) Omore and Miyagi University of Education presented the MTP project and linkages to the public at some conferences and symposium.

## **3. Lincoln Elementary School and University of Wisconsin-Madison Connection.**

In December 2002, we invited Dr. Paul Williams, Director of the Center of Biology Education for the University of Wisconsin-Stevens and Professor Jennie Lane from the University of Wisconsin-Stevens Point Wisconsin Center for Environmental Education to take part in Miyagi University of Education's "International Environmental Education Symposium", co-sponsored by FMF. Through establishing a linkage between the University of Wisconsin-Madison, Lincoln Elementary School, Miyagi University of Education, and Omore Elementary School, we created an international connection between universities and schools. In doing this, we lay the path to a real "Global Knowledge Creating Web."

## **Section 2 Developing and Implementing our Pair Projects with Support from Outside Institutions: Linkages for**

### **1. Developing Pair Project with Lincoln Elementary School**

Omore is the perfect place to learn about nature and the environment. Omore Elementary's home, Kesennuma City, is situated on a rias or saw-toothed coastline area within the National Park. Rivers flow from the green Mountains through the city to Bay. Forests, rivers and ocean surround us, all interconnected by water.

Our partner, Lincoln Elementary School, located the northern Midwestern U.S., is in a similar location. Although Madison is far from the nearest large body of water, Lake Michigan, the city is surrounded by two lakes. The area is known for its many "potholes" or glacially carved lakes.

Omore is on the ocean and Madison is surrounded by lakes. So we agreed to center our environmental learning on water. Through interactions based on our learning, we compare the similarities and differences between our two environments.

Our pair project is based on the common:

(1) Theme

Water Environments and Human Life: The Interactions and Effect

(2) Goal

Through hands-on, experience-based inquiry learning, students hunger for knowledge and discovery. Through web-based interactions, students develop a mutual understanding about each other's environments. This in turn develops their understanding of the earth's systems and opens up their eyes to the global world.

(3) Outline and support of grade level projects

Our pair project is an all school effort, incorporated at all grade levels. In developing our projects for each level, we carefully consider student developmental stages and circumstances and targeted abilities and perspectives. We select level-appropriate topics for each grade and develop and implement projects with the help of specialist institutions.

## **2. Summary of our Main Project Design**

(1) Environmental Cyber Map, 3rd Grade

Students created cyber maps based on observations of living things around Orose River such as insects, birds, fishes and so on. And they are going to share and compare information via the Internet.

(2) Orose Sanctuary Center Project, 4th Grade

Through gathering, observing, and cultivating Orose River aquatic life, students learned the connections between living things and understood the conditions necessary to preserve an abundant environment. Students created "Miniature aquarium" and "Sanctuary center".

(3) Sea and Lake Museum Project, 5th Grade

Through observing and experiencing shoreline marine life, students learned the connections between living things and the ecosystem. From now on, they compared their observations with Lincoln Elementary School students' observations of a pothole, freshwater life. Also, they considered the connections between human life and the ocean environment and planning to make "Sea and Lake Museum".

(4) Waterfront Future City Project, 6th Grade

Students thought about how Kesennuma's city, forest, river, and ocean can best co-exist with nature and planned a future Kesennuma City. The sixth grade students applied what they learned in previous years and contributed their individual ideas to planning a waterfront city of the future. The students made a diorama of their waterfront future city.

## (5) Integrated Studies Project

## ○ Children Global Environmental Forum

Omoso and Lincoln connected via an online video conference. U.S. and Japan elementary students held an online forum on the global environment.

**3. Forming the Links and program(2002-2004)**

We linked our linkage with Miyagi University of Education, other institutions and community over the course of several years, meetings, and events.

June 21, 2002	<b>Project Meeting for "Designing the Project 2002"</b> We held this meeting at Omoso Elementary School and invited professors from the Environmental Education Center and experts from the Shizugawa Nature Center to offer advice on developing our environmental education projects.
July 4, 2002	<b>"Environmental Education in Wisconsin"</b> Rebecca Rosenberg, teacher at Omoso MTP partner Lincoln Elementary School, gave a talk at Miyagi University of Education. Teachers from the University Environmental Education Center and Omoso Elementary attended.
July 11, 2002	<b>Visit to the President of Miyagi University of Education</b> Representatives from the Environmental Education Center, Kesenuma City Board of Education, Omoso Elementary School and Lincoln Elementary School visited the president to formally request Miyagi University of Education's cooperation with our linkage.
August 20, 2002	<b>Study Group on the MTP Project and Linkage Consultation</b> Omoso Elementary consulted with Miyagi University of Education Environmental Education Center.
August 22, 2002	<b>Computers in the MTP Project</b> Professor Ugawa from Miyagi University of Education Environmental Education Center facilitated this study group at Omoso Elementary School
October 18, 2002	<b>Future City Project Study Group</b> Professor Koganezawa of the Miyagi University Environmental Education Center guest taught Omoso Elementary students.
October 22, 2002	<b>Fish Living in the Omoso River</b> Sendai City Science Museum Curator Takatori guest taught this class for Omoso Elementary Students.
October 29, 2002	<b>Omoso River's Micro biotic World and Food Chain</b> Professor Mikami of the Miyagi University of Education Environmental Education Center guest taught this class for Omoso students.
December 4, 2002	<b>International Environmental Education Symposium, Miyagi University of Education</b> We presented Omoso Elementary School's project and linkage at this international symposium.
January 24, 2003	<b>Education Reform Forum, Miyagi Prefecture and Sendai City Boards of Education</b> We presented Omoso Elementary School's project and linkage to local education administration, schools and organizations.
February 7, 2003	<b>Public Presentation on International Education of Environment 2003</b> Omoso and Lincoln shared the results of their pair projects.

March 22, 2003	<b>FMF Japan-U.S. Teacher Conference (Washington DC)</b> Paper Presentation :Yukihiko Oikawa (Omose Elementary School)Panel-discussion panelist :Kazuyuki Mikami (Miyagi University of E.)Becky Rosenberg (Lincoln Elementary School)
March 23-31,2003	<b>Omose Elementary School &amp; Miyagi University of Education Group's Joint Study Trip to Madison Wisconsin</b> Omose: Yukihiko Oikawa, Keiko Chiba, Rie Sugawara University: Kazuyuki Mikami, Takaaki Koganezawa
April 23, 2003	<b>Visit to the President of Miyagi University of Education and round-table Meeting with Environmental Education Center for the cooperation of Omose's Project</b> University: Yokosuka Kaoru (President), Kazuyuki Mikami(Drector) Takaaki Kanazawa(Professor), Jinichi Matsumoto(Chief) Omose: Toshiro Kikuchi (principal), Yukihiko Oikawa
June 24, 2003	<b>Project Meeting for "Designing the Project 2003"</b> We held this meeting at Omose Elementary School and invited professors from the Environmental Education Center and experts from the Sendai Science Museum and other institutions to offer advice on developing our environmental education projects.
July 4, 2003	<b>Symposium of EEC in Miyagi University of Education</b> "International collaboration and environmental-education practice - in elementary schools" - Example of Kesenuma Omose Elementary School and Lincoln Elementary School in United States -
July 7, 2003	<b>Ocean Project in Shizugawa Nature Center(5th grade)</b> Students researched living things on the seashore and made seaweed craft. They also learned food chain in the ocean receiving lecture of Dr.Yokohama who is director of Nature Center.
August 1, 2003	<b>Special Lecture at Omose Elementary School</b> "How we organize the lessons that foster children's awareness for nature. Lecturer : Dr. Kenichi Tabata (Miyagi University of Education)
September 1,2003& December 1,2003	<b>BUGS Project (3rd grade) " Research Dragonflies in Omose River and Ponds and making BUGS map"</b> Dr. Yoshihiro Ugawa and Koji Mizota (Miyagi University of Education)
September 3-4, 2003	<b>Ocean Project in Ichinoseki Nature Center (5th grade)</b> Students researched the relationship between Ocean and Forest through the water with Dr. Hirabuki Yosihiko (Miyagi University of Education)
September 11, 2003	<b>Future City Project(6th grade)</b> "Research of Water Quality of Omose River" with Dr. Takashi Muramatsu (Miyagi University of Education)
September 22, 2003	<b>Fish Living in the Omose River(4th grade)</b> Sendai City Science Museum Curator Takatori guest taught this class in Omose River for Omose Elementary Students.
October 14, 2003& December 3, 2003	<b>Nature &amp; Festival Project at Omose School(1st and 2nd grade)</b> Miyagi University of education Dr. Masaaki Oka guest taught "Vegetable Cultivation" for Omose students.
October 21, 2003	<b>Omose River's Micro biotic World and Food Chain(4th grade)</b> Professor Mikami of the Environmental Education Center guest taught aquatic livings and food chain for Omose students.
October 21, 2003	<b>Future City Project Study Group(6th grade)</b> Professor Koganezawa of the Miyagi University Environmental Education Center guest taught the concept of Future City.
October 21, 2003	<b>Meeting for Promoting collaboration of Omose's Project</b> Members discussed possibilities of project and collaboration

November 3-5, 2003	<b>International Symposium on Environmental Endocrine Disrupters sponsored by Ministry of Environment</b> "Perspectives on Chemical Substances Fostered via Environmental Education -Through Inquiry Based Global Environmental Education Program" Lecturer: Yukihiro Oikawa (Omore Elementary School)
February 11-14, 2004	<b>UNESCO/Asian-Pacific Environmental Educational Research Seminar, 2004, sponsored by Japanese National Commission for UNESCO, Miyagi University of Education</b>
February 12, 2004	<b>Public Presentation on International Education of Environment 2004Sponsored by Omore Elementary School.</b> This conference was held under the joint auspices of UNESCO Seminar

## **Conclusion Possibilities and Directions for our Omore's Inquiry Based Global Environmental Learning Program**

### **1. Master Teacher program and Omore's international EE project make effective global inquiry based learning possible.**

First of all, Master Teacher Program brought Omore Elementary and Lincoln Elementary students and teachers together to collaborate face-to-face. Despite being in different countries, we worked close together to learn about the global environment and international understanding. Although interactions were international, they were still personal, helping students realize that national boundaries and distance do not limit learning or collaboration.

Secondly, this project provided very real environmental learning opportunities. It introduced the U.S.'s progressive methods of teaching about the environment to Omore Elementary. Our learning program requires teachers and students to utilize live and local subjects, information technology, and hands-on experiences in the learning process. This helps to make Omore Elementary's environmental education more real.

Thirdly, our new challenge opened children's eyes to the world, allowing for connections with diverse people and environments on the other side of the globe. Through this, children will develop the ability to think about matters from a variety of perspectives and make decisions from many angles. Namely, they will acquire the true capacity to be global citizens and the strength to discover the future direction for our environment.

Lastly, our new project helped Omore to collaborate internationally on our environmental learning program and global linkage. We bring that network to life by using it in the classroom, using it in environmental education, and sharing knowledge and resources from all over the world with our students. This international linkage and collaboration open doors for amazing possibilities in environmental education.

### **2. We emphasize shared experience on global scale through Inquiry Based Global Environmental Education**

A few years ago at University of U.S, I had an opportunity to talk with U.S. teachers about the problems today's schools and teachers face. Both U.S. and Japanese teachers brought up same problems children have, such as the increase in lack

of motivation or interest for learning, and class disruption. Children in both countries also lack respects for others and their life.

I suggested that these problems all result from "a lack of experience." In both countries, children live in a virtual world. They are engrossed in video games, cartoon animation, and the Internet. Children are not in touch with the outside world. Years go by while they do not gain the natural and social experiences crucial in their growth and development. Without the chance to explore nature using all five senses, they do not develop inquiring minds or keen senses. Without meaningful interactions in the home, children do not learn love or discipline. Without personal friendships and interactions in society, children do not develop social skills. As a result, we see children become young adults without acquiring basic life skills. Our children determine the future. By raising children who do not understand their natural and social environment, the world risks the danger of further damage to the environment and humanity.

To avoid this, we, as teachers, must give children experiences that foster inquiring minds and respect for life through school education. Omore's Inquiry Based Global Environmental Learning Program is very important and significant. The pair project with Lincoln School and our learning program require children to learn about their local environment firsthand and then use information technology to share what they have learned with peers in the U.S. This puts children in touch with the mysteries of nature and takes them outside to observe nature. In sharing their experiences, children exercise both their minds and souls through meaningful personal and intellectual interactions. They develop a mutual understanding with children in the U.S.

We believe Omore's Inquiry Based Global Environmental Education Program realizes the slogan, "Think globally, Act locally". Our project centers learning on experiences in children's local environment and then has children synthesize and express what their new knowledge on a global scale.

As Rachael Carson once said, this process fosters a "Sense of Wonder" in each individual child. Children in the U.S. and Japan share their "Sense of Wonder" and come to understand each other across national boundaries – what a "wonder-full" opportunity!