Outline of EEC

The subject of environmental problems is now one that is discussed worldwide on a daily basis. Many people are concerned with and are making a great effort to solve these problems. The point is that we are not only being affected by these problems, but in fact are causing a great deal of damage to nature.

What is important to us is what role school education can and should play in dealing with these problems from global as well as national perspectives. There is, therefore, an urgent need to develop practical teaching methods and materials which can be used in teaching children the importance of the environment and the seriousness of the environmental problems.

In 1997, an investigation center, called "Environmental Education Center of Miyagi University of Education," was founded as a major educational institution of Miyagi University of Education. The center also aims to provide citizens in this area with a facility in which they can study and do some research on the environment in cooperation with the city and prefectural governments.

The educational principle of the center is the following: the fundamental basis of environmental education (EE) is to know about the development and structures of nature and to become considerate towards nature; for this purpose, the center puts great emphasis on direct involvement with nature, direct learning from nature, and understanding of the reproductive mechanisms of nature.

In short, the overall function of the center is to develop new approaches to EE through public symposiums, environmental educational colloquiums, and research projects in cooperation with citizens in this area.

Some specific aims of the center are the following:

- ◆ to produce teachers who can put EE into practice
- ◆ to provide graduate environmental studies to citizens
- ◆ to establish environmental educational studies in school education
- ◆ to serve the community through environment educational activities
- ◆ to promote information network-base EE
- ◆ to establish "field museums for EE and studies."

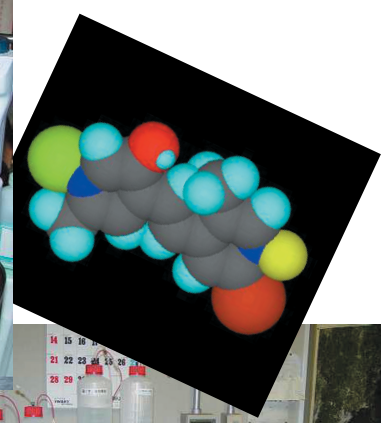
Photographed by Yoshiyuki NAGAHATA

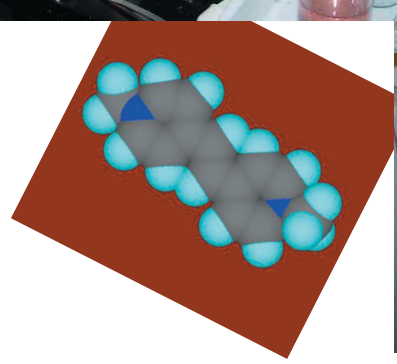
Fundamental Research of Environmental Education

The section "Fundamental Research of Environmental Education" of EEC aims at developing teaching materials for environmental education in schools. The teaching materials are developed on the strength of life and material science data.

Research Subjects:

1) Fundamental studies on diversity and reproduction mechanisms of life, and on the role and function about the index of living organisms.
2) Studies on the properties, reactions, and measurements of index materials in the environment.
3) The development of educational learning materials for the internet and their distribution to schools.





System Research of Environmental Education

Aims:

1) Design Study of Computer and Network Systems for Environmental Education (EE)

2) Research on Information Media and Networking Utilities for EE

3) Research on Database for EE

Project Studies:

Development of Internet Service Oriented Learning Systems at School Education.

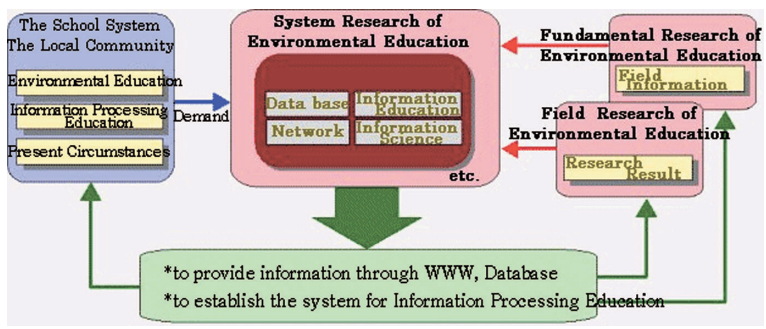
Practice:

To carry out the above-mentioned plans, several working groups have been started as follows:

1) Technical Supports to Educational Networking Groups at Schools in Miyagi Prefecture

2) Developments of Interactive Web Pages for EE

3) Collaborative Works to Utilize Internet Resources for Global Learning at Attached Schools



Masaharu YASUE

As a member of EEC, I am engaged in works as follows, where URLs are also shown;

1) Application of Networking Systems to Computer Science Education
http://www.curri.miyakyo-u.ac.jp/curri-ex/st/m-yasu/rep/abst.html

2) Human Friendly Management for Educational Network in School and College
http://www.curri.miyakyo-u.ac.jp/curri-ex/st/m-yasu/rep/rep99-3b.html

3) Applications of Network and Computer Systems to School Education
http://www.curri.miyakyo-u.ac.jp/curri-ex/st/m-yasu/rep/rep00-2b.html

4) Development of Management Softwares of Imagetype Web-Database for EE
http://www.curri.miyakyo-u.ac.jp/curri-ex/st/m-yasu/rep/rep2002-1.html
(in Japanese)

5) Managements of Campus Networking and Its Application to Promote Researching Studies in University of Education
http://www.curri.miyakyo-u.ac.jp/curri-ex/st/m-yasu/rep/rep01-1.html
(in Japanese)

Field Research of Environmental Education

As for the environmental education (EE), both of the following are very important : to recognize various recent environmental problems of the earth scale correctly, and to practice its recognition concretely in the nature and the community of inhabiting areas.

For this purpose, continuous interdisciplinary research of a regional nature and culture, accumulation of its results and utilization of the results positively in teaching materials of EE are decisively necessary.

Some fields for the practice of EE have been established in Sendai city and Miyagi Prefecture, that is, Aoba-yama (hill), Hirose-gawa (river) and Kinkazan (island). These fields are projected to be a kind of Open Field Museum, that are named "Super Natureing Center design (SNC-design)". SNC-design is also brought into practice for the conservation and nature education of neo-tropical forest at Macarena, Colombia.

Related activities:

- ◆ Ecological investigations of fauna and flora in the field.
- ◆ Issue of study report, open to the public.
- ◆ Planning and practice of nature watching especially for children.
- ◆ Issue of practice report of nature watching.
- ◆ Establishment and management of the fieldwork joint laboratory.
- ◆ Periodical holding of fieldwork symposium (public presentation).
- ◆ Making network among organizations concerned with EE.

Project Research

1) Construction of the Field Museum for Local Nature in Miyagi Prefecture (Phase 2) : Forest to Coast in Shizugawa.
[2000 - 2003, Project Leader: Kazuyuki MIKAMI]

2) Learning in “Sato-yama”toward the Sustainable Communities: a Case Study in Sendai Megalopolis Region.
[2000 - 2003, Project Leader: Yoshihiko HIRABUKI]

3) Development of Environmental Education's Contents by Using GIS.
[2001 - 2003, Project Leader: Takaaki KOGANEZAWA]

4) Environmental Education as a "General Seminar" in Teacher Training.
[2001 - 2003, Project Leader: Masayoshi KOGA]

5) The Investigation of Imozawa River as Teaching Material of Environmental Education.
[2001 - 2003, Project Leader: Takashi MURAMATSU]

6) Propulsion of SNC-design in Kinkazan Island, Miyagi prefecture.
[2002 - 2005, Project Leader: Kosei IZAWA]

7) Establishment of Water Quality Index with Micro-Organisms and its Application to Environmental Education.
[2002 - 2004, Project Leader: Kazuyuki MIKAMI]

8) The Basic Research on the Effective Utilization of the Pond to Environment Teaching Material.
[2002 - 2004, Project Leader: Takashi MURAMATSU]

Photographed by Yoshiyuki NAGAHATA

【Project Research】

The Basic Research on the Effective Utilization of the Pond to Environmental Education.

[2002 - 2004, Project Leader: Takashi MURAMATSU]

Environmental education (EE) is becoming one of the most important educational areas in school. One of the purposes of EE in school is to raise students who can understand the relation between human and nature and can take desirable actions on environmental preservation. In order to create a pleasant and affluent environment in the areas of living, it is necessary to examine the present condition of the environment exactly and to construct the well-informed information about the environment as offered to the school. The purpose of present studies is to clarify the factors which connect nature and human activity. Chemical analyses are powerful methods for this purpose. The results obtained in this study will give effective education materials which modify human behavior toward the environment.

Investigation Place:

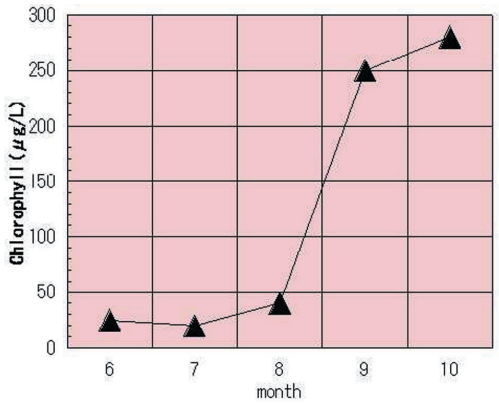
"Marutazawa ike" (Marutazawa pond in sendai city)

Indexes for Environmental Analisys:

Biochemical Oxygen Demand
Chemial Oxygen Demand
Dissolved Oxygen
Anions and Cations
Organic Acids
Organic Nitrogen and Ammonia Nitrogen
Nitric Nitrogen and Nitrate Nintrogen
Total Phosphorus
Remaining Chrorine
Conductivity
Chlorophyll-a

Duration of Study:

June,2002 -March,2004



Effect of Eutrofication in Marutazawa Pond (2002)

【Project Research】

Learning in“Sato-yama”toward the Sustainable Communities: A Case Study in Sendai Megalopolis Region.

[2000 - 2003, Project Leader: Yoshihiko HIRABUKI]

Originally “Sato-yama” or “Sato-chi” mean the traditional landscapes which had been locally created in rural areas under the harmonious interactions between natural environments and human activities. However, in the recent 50 years, life-styles of Japanese people have changed dramatically, and these landscapes have degraded or disappeared together with wisdom for the sustainable management of ecosystems.

In Miyagi Prefecture, hilly ranges occupy as large as 37 % in area and have been used as the main fields of “Sato-yama”. Therefore we can easily find various kinds of patches lying on the undulating land such as coppice forests, coniferous plantations, cultivated meadows, paddy fields, small ponds, modern residential areas and bare places.