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Colofón
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Estamos abiertos a todo tipo de contribuciones, artículos, fotos, dibujos, invitándoles encarecidamente a que nos hagan sugerencias. Si desean información o participar en cualquiera de las posibilidades arriba mencionadas, deberán dirigirse a:

El Comité Europeo-Bruselas-Bélgica
El Ayuntamiento de la Haya, Países Bajos.
Editorial

This is the last issue that will be printed by the department of Town Management of the city of The Hague. We would like to express our gratitude by dedicating this issue to them.

Due to technical problems we were not able to translate all the abstracts in Spanish. We apologize for that and will remedy it in the next issue.

It has already been some time since the conference in Portugal, but I hope that reading the articles from Portugal will bring back the memories of the time spent there.

I would like to congratulate Raymond Jovett and his team with acquiring the organisation of the 1994 conference in Aberdeen. I am sure it will be as successful as the conferences we have had so far, and we will have next year in Canada. You will find the invitation to Canada elsewhere in this issue.

Richard Parish has expressed his feelings on the development of Caretakers of the Environment International. I agree with his line of thinking. I hope that the Global FORUM can be the connecting tissue between the 1000 or so teachers that have participated up to now. It can be the line that keeps them informed and connected to the other Caretakers. Environmental Education was, is and will be one of the major factors to help influence positive environmental action. It is of the greatest importance that it is spread around the world. Caretakers of the Environment International, as well as the local chapters, play an important role in this.

We can all see the difficulty in dealing with environmental problems, when looking at the Marpol-treaty. The Marpol treaty concerns the littering by shipping at sea. The International Coastswatch Project held in September in Europe, where students investigate the coastal area on pollution, shows that still a lot of litter from ships is washed ashore. Thus demonstrating that treaties are not enough to clean up the environment. The willingness to adhere to or the possibility to enforce treaties are as much necessary.

Environmental Education can play a role in action taking against pollution and damage to the environment. It can demonstrate to others the fact that pollution is taking place and the necessity of taking action. This was also discussed in Portugal during one of the teachers sessions.

I hope you will enjoy reading this issue of the Global Forum.

Jan Apotheker.
From the International Board

CEI into the 21st Century: Time for Reflection

By Richard Parish, United Kingdom.
Head of Geography, Churchill School, Churchill
President of Caretakers of the Environment International

Caretakers of the Environment (CEI) is now firmly established on the environmental education calendar. Over 1000 teachers and students from over 45 countries have participated in one or more of the six international EE conferences we have organized on three different continents. Schools, universities, governments, international organizations, representatives from industry and commerce have supported and learnt from delegates. With the Global Forum for Environmental Education we have -- with the support of the European Community and Department of City Management of the City of The Hague -- created a new medium for exchange that currently reaches over 500 people in some 30 countries. Many of the delegates continue to communicate with each other by mail, by visiting each other's countries and, occasionally, by working on a joint EE project. In short, CEI appears to be successful.

However, it would be irresponsible of us to rest on our laurels. Environmental problems have not gone away and there still is a lack of common understanding among the peoples of the world. The need for us to act locally and think globally is greater than ever before. CEI has a big task ahead in stimulating environmental education worldwide. To be able to us more effective in the future we, the international board, would like your advice on the following issues:

* Who should be selected as delegates to the conferences? Should delegates be able to attend more than one conference every five years? Should there be a selection process through some kind of competition? What kind of criteria should the organizing team of a conference use?

* What should the conference program look like? Should there be a limit on the number of speakers? Should there be sight seeing visits during the conference? Should each conference have a certain theme? If yes, how should delegates prepare for such a theme? Should there be more time for discussion groups? Should teachers and students have joint sessions? Should conference delegates be asked to be active in a truly environmental sense, i.e. investigating, monitoring, decision-making, taking action?

These are some of the questions we will need to address. The international board seeks to play an active role in addressing these questions with all past delegates in order to assist the organizing team of the next conference in Canada in putting together the seventh conference. Many delegates have already expressed the need for more discussion, interaction with other delegates, a better way of sharing each school's EE-project with all the participants, a conference that reflects and stimulates environmentally sound acting (i.e. one that generates little waste, consumes less meat, etc.) and we are working with the Canadian organizing team on all these issues.

Meanwhile, there is the continuing need to get support for our network and its periodical, The Global Forum for EE. We are therefore asking delegates to write their own leaders letters to let them know about the importance of EE in general and CEI in particular. It would be wonderful if those leaders could in turn write a letter of support for CEI which we then could use to obtain financial support. The network so far has created opportunities for many people, it is equally important for the people who have benefitted from the network to give something back to the network to keep it going and to make it better. Correspondence can be directed to the address listed on page two! Please, do take an opportunity to write your leaders and encourage them to become a supporter of CEI. Together we can make CEI a useful tool in making tomorrow better.
**Reflections by students on the field study at the Water Hills of Sizual**

We came from many places, in Troia we were Troians. We went to many places. We saw and heard a lot of things and reached some conclusions. In consequence of this we recommend to all other earth inhabitants:

That people stop seeing tourism as a consumption of the exotic and start travelling with the aim of improving the places where they pass by, respecting the environment and the persons they find all over the world.

That everybody think in the world before acting: we only have one and is not ours, it is borrowed. What kind of right have we got over it, to destroy the house of life? None, of course. We didn’t build it and we would never be able to.

We recommend above all, modesty. We are only one of the hundreds of thousands of generations that have ever lived in the blue planet. If we spoil it with our unconsciousness, we will be the last.

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**Sado Cries**

First hand experience of what is wrong
So we can improve it before too long

The price of tourism is loss of litter

Beautiful forests but no rubbish bins
The litter is evidence of tourist sins
From bikes we saw a Roman site
But all the concrete didn’t look right
All that is left for the people to fish

Only two species to put on their dish

A stork we saw, but maybe no more
And Extinction is knocking on their door

A tourist attraction- nude men on the beach

Unluckily they were out of our reach!
A lot we have learned, from our travel through time

Therefore we can end on a positive line
We travelled from the first century to the present day

Will the future be better? Who can say?

This poem was presented at Troia, by Befjoi do Asse
Report from Alison Cook and Helen Gearig, delegates from Churchill School, England.

The sixth International Environmental Conference was a unique opportunity to share and discuss ideas with those from as far afield as Poland, Canada and Spain. We were fortunate enough to share in this experience by being chosen as the representatives from Churchill School, in reality we were the English delegates.

The specific aim of the Conference was to discuss the conflict between tourism and the environment. The Conference itself was a great learning process. We both came away with hope and fears for the future. Portugal was a suitable setting for the Conference. We were able to see the obvious problem created by the conflict of Tourism and the Environment. The resort in which we were staying had been constructed with apparent little regard for the surroundings. Concrete monstrosities towered above the natural mountainous backdrop. In several cases, the buildings had been abandoned in mid-construction, due to lack of funds.

We soon realised that there was no simple solution. Portugal is in many respects still developing as a Western country. We saw many examples of poverty including ramshackle wooden fishing ports. However, the people, tourism offers new jobs and new investment. The problems were about trying to stress the importance of environmentally sympathetic development which will inevitably cut their initial revenue.

Despite seeing the depressing realities of the situation, the Conference did leave us with a certain feeling of optimism. It proved that the concerns and the will exists to fight for improvements. There were over 300 delegates from over 15 countries. All could talk of the environmental problems and strategies in their own countries but at the same time we heard of encouraging breakthroughs: schools who had established comprehensive recycling schemes, local conservation projects and many more.

The Conference seemed to miss the point in certain respects, for example the over use of paper and packaging. But on the whole, the week was a memorable occasion, and we would both love to attend the 7th Conference in Canada.

Alison and Heather drew up the following recommendations:

For tourists
1. Culture Tourists must have a knowledge of the culture and must also be aware of local factors/problems and considerations.
2. At all times tourists should show respect for local heritage/habitat of life/society. A local guide could provide invaluable information.
3. An area should be left as it is found: avoid dumping litter/excess damage etc...
4. If possible support local industry: e.g. hotels/restaurants/souvenirs in preference to international mass tourism.
5. Stick to paths/obey by-rules, be considerate of specific local problems.
6. Find out about local recycling etc.
7. Use public transport or walk.
8. Pressure on tour operators. Feed back on experiences, necessary changes etc.

For tour companies
1. Support and encourage local industry do not exploit, give a fair cut of profits.
2. Support and encourage sympathetic (sustainable) development.
3. Carry out or fund environmental research on tourism, and act on findings.
4. Encourage a common aim in other companies regarding the environment.
5. Introduce a form of environmental rating for resorts: e.g. "Green Stars", that could become a recognised mark of quality and result in a green tourist consortium.
6. Make a small contribution to local costs, such as rates: ensure money is used environmentally.
7. Maximize the use of local initiatives/actors etc.
8. Insist on recycling in resorts.
9. Introduce environmental training for employers.
10. More honesty in advertising/brochures.
The Illinois Rivers Project: A High School Program Involving Students in River study

By
Dr Robert Williams, Project Advisor
Cynthia Bidlack, Project Coordinator
Illinois Rivers Project
Southern Illinois University, P.O. Box 2222, Edwardsville, IL 62026

Abstract
The Illinois River Project is an integrated, multidimensional science, technology, and society (STS) project developed to introduce water quality dimensions into Illinois high schools. At the present time 105 schools form the "River Watch" network tied together through SOILED NET, a telecommunication system, located at Southern Illinois University at Edwardsville. The Rivers Project involves high-school science, social studies, and English teachers in an integrated study of their local river and community. Science teachers and students conduct water quality tests; social studies teachers and their classes evaluate the cultural and historical impact of the river, along with its relationship to water quality; English teachers and their classes process this information into a publishable collection of writings, called *Meanderings*, that will span all aspects of river life, past, present, and future. Funding by the National science foundation has allowed the Illinois Rivers Project to create a Rivers Curriculum in five areas: chemistry, biology, geology, geography, and language arts. These five units have been written by Rivers Project teachers from throughout the state of Illinois and were field tested by the writers during the month of April.

Historical Background
The Illinois Rivers Project, funded by the Illinois Board of Education's Scientific Literacy Grants Program and the Illinois Board of Higher Education, is now entering its third year. From its beginning as a pilot program involving eight schools (with 24 teachers representing science, social studies, and English) along the Mississippi and lower Illinois River near St. Louis, the Project has expanded to include 105 high schools (with 500-plus teachers) from Cairo, at the junction of the Ohio River; to Little Falls, Minnesota north of Minneapolis, and on every major river in Illinois. The Project's expansion also includes a Midwestern network of 16 school from Iowa, Wisconsin and Minnesota, made possible through funding from the U.S. Fish and Wildlife Service.

The Illinois Rivers Project has followed a high profile course that has gained much attention in the towns where the schools are participating. The local media find the idea of high school students patrolling the river's banks in search of trouble spots a highly desirable photographic activity. The required field study in the Project, including water sampling and collection, on-site testing, and further school laboratory testing, is considered a valuable effort by teachers and students alike. Water quality kits, that are both readily available and easy to use, make this activity a relatively uncomplicated task.

Sharing the findings
Once the data have been collected and analyzed, the Project's telecommunication system, SOILED NET (the Southern Illinois Education Network) allows students to transmit their data, as well as view all that has been collected by the other 105 schools. At the same time, the Project calls for the social studies and English classes to write about the history and culture of their community as it relates to the river. This results in the Project's publication, *Meanderings*, which is a collection of scientific articles, historical research, interviews, folklore, creative writing, and illustrations. To date five books have been published with over 1200 pages of student writings. Students with varied talents and interests are provided with a vehicle to display the products of their efforts.

In the second year of this Project, student writings were transmitted via SOILED NET to be edited by the Project staff into the finished product. The students' writing in the in areas of science, culture, and history become part of both academic and local written collections.
The SOILED NET system transmits water quality data to the database at the Environmental Management Technical Center (EMTC), a branch of the U.S. Fish and Wildlife Service. The data is then analyzed by the U.S. Fish and Wildlife Service staff for the purpose of monitoring the quality of midwestern rivers. The data is also made available to the entire scientific community through the Geographical Information System (GIS).

**Student Congress and Newsletter**

One of the most successful products in terms of dissemination is the Illinois Rivers Project Student Congress. Two congresses have been held, the first in Quincy, Illinois on April 19-20, 1991, and the second in Peoria, Illinois on March 29-30, 1992. Here students are given the opportunity to showcase and share their experiences and efforts with their peers. The River Watcher's Log, the project's newsletter, is published four times a year and combines student and teacher writings along with project announcements.

The Rivers Project has gained recognition through various awards, winning both a state merit award and a national merit award from the Soil and Water Conservation Society. The Illinois Department of Conservation presented the Rivers Project with one of twelve Talent in America awards and the project is currently a national finalist for this award. Most recently the Project received the Illinois Department of Energy and Natural Resources' ILRERA award for Energy Achievement.

Another aspect of the project is the use of the computer by the students as a research and communications tool, just as in modern business and industry. In their schools, students use computer databases to analyze trends in water quality both at their location and at others along the rivers. Word processing programs are used to write technical reports, prepare creative writings, and document the results of the local cultural and historical research. All of this information is then transmitted to the project headquarters and shared with all the other schools in the project via the computer telecommunications network.

**Success of the project**

The success of the project can be measured, in part, by its rapid expansion. Administrators, teachers, and students have all recognized the value of an interdisciplinary study that makes the river a classroom. Students are given the opportunity to experience real-world problems and solutions instead of those that exist only in textbook format. The value of this search for methodology by the Project's teachers is apparent, because techniques are being refined and extended to produce a variety of curricular materials.

Funding by the National Science Foundation will allow the Illinois Rivers Project to create a Rivers Curriculum in five areas, chemistry, biology, geology, geography and language arts. These five units were field tested by the authors during the month of April and summer workshops will be presented to other schools in the Rivers Project. During the week of August 10-14, 1992 at Principia College in Elsah, Illinois 34 schools will send three teachers from the areas of science, social studies and English to be extensively trained in the Rivers Curriculum. These 72 teachers will then field test the rivers curriculum during the school year of 1992-93 preparing it for national dissemination the following summer.

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**RESOURCES PROVIDED TO RIVERS PROJECT SCHOOLS**

1. Each water quality testing kits and an aquatic net for benthic organism collecting.
3. Training and technical support.
4. Computer and communication software.
5. Subsidized computer time on SOILED NET.
6. Technical support for collecting, documenting, and analyzing water quality data.
7. Copies of Monographs and Reports, Historical Information, research articles, pollution problems and strategies for clean-up, pertinent legislation, a directory of agencies responsible for water quality and miscellaneous resource materials.
8. Illinois/Indiana videotapes and water quality data.
9. Help in writing and producing a copyready issue of Monographs.
10. Invitations to attend and present at the Illinois Rivers Project Student Congress. Schools will be responsible for funding the trip themselves.

The Illinois Rivers Project is currently participating in a Zebra Mussel Watch in conjunction with the Illinois Natural History Survey and the University of Illinois Water Resources center. Each of our schools placed Zebra Mussel moni-
Student Action-Taking

The Illinois Rivers Project offers a unique opportunity to high school students involved in the study. By providing an outlet to apply what they learn in the classroom to everyday situations, they determine how each can impact the community. Examples are:

While doing their water quality testing, students at Jerseyville High School continued to get high fecal coliform readings from a nearby creek. They found pollutant levels that were classified unsafe to swim and even unsafe for partial body contact, yet kids were playing in the creek. The students launched a campaign to educate the residents in the community about the environmental hazards, based on their scientific testing. When they were ignored, they wrote letters to elected officials and governmental agencies, finally getting the attention of the Jersey County Health Department. Now two years later, the town is developing a sewer system that will abolish the unfiltered flushing of waste into the creek from area houses.

Students from Alcado High School were called by their local country club to investigate a fish kill that had occurred at a pond at Hawthorne Ridge. Chemistry students ran various water quality tests and found that the fish kill was caused by eutrophication. The geometry class at Alcado was asked to measure the greens at the country club to help the groundskeeper add the right amount of fertilizer to the greens.

At Dundee-Crown High School in Carpentersville, students found that construction debris had been dumped and bulldozed across a local stream. Huge chunks of concrete covered a thirty-foot section which caused municipal waste to pile up near the stream bank. They attempted to contact the property owner, but were unable to reach him. The students called the EPA, the Army Corps of Engineers, and the County Soil and Water Conservation Department. The owner was directed to halt any further degradation and file for the required permits. In fact, it cost the landowner around $80,000 to correct the damage. These students felt that justice had been served and they were instrumental in preventing further problems.

The examples of students seeing how they can make a difference can never be taught in a classroom through a book. The students at Alcado and Jerseyville presented their findings at conferences this past year. Jerseyville students attended the Governor's conference on the Illinois River in Peoria and Alcado students presented at the Upper Mississippi River Basin Association meeting in Chicago. Both groups of students were well received by these environmental leaders. Recently, students from Carpentersville High School presented at a Senior Citizen Symposium held on the campus of Southern Illinois University at Edwardsville. Here we had the young and the old working together to conduct water quality tests on water from the Mississippi. Many other schools attend local council meetings as well as service organization meetings to speak of their involvement in the Rivers Project.

Rusty Cans

Her feet danced wildly in the sand,

crushing the remains

of empty cans.

The music played
to the rhythm of her hands,
as the water chocked peacefully
on its gift from man.

By Heather Harker,
Sherard High School
Northern Edition.

Future plans

Project staff and teachers have been working with schools from Illinois as well as from other states to identify sources of funding to have their students join the network. The Illinois Rivers Project is also pursuing collaborative contacts with projects in foreign countries. Plans are now being made to coordinate our activities for the next school year with these groups via the Internet system.

The Illinois Rivers Project answers the need for curricula which provide opportunities for students to apply and develop the skills learned in the classroom. The basic concepts of chemistry, biology, ecology, social studies and language arts all have concrete applications for the students in these projects. The knowledge that they can make a positive, personal contribution to increasing the overall cultural and scientific wealth of their community, will inspire these students to remain active, and informed citizens.
Announcements:
Scotland to host 8th CEI conference in 1994

At the 8th conference in Troia, Portugal, Dyce Academy of Aberdeen, Scotland was awarded the organization of the 8th International CEI conference to be held in the early summer of 1994. Dyce Academy has participated in all CEI conferences and is known throughout the U.K. and, thanks to their continued involvement in international EE networks, continental Europe for their excellent EE-program which permeates all subject areas taught at the school.

Pictures shown on this page are from the Escola C-S Azetias Professora M Manuela Caldeira Ferra, Alunos de 6 ano trabajo de grupo (Sergio, Pedro Rui, Sonia y Rute)
Impressions of the Earth Summit

By Isabel Abrams,
2216 Schiller,
Wilmette, Illinois 60091
USA

Isabel represented Caretakers of the Environment International, as a member of the International Board. She also attended the International Workshop on Environmental Education. This report on the Earth Summit was presented on June 19, 1992 during the CEI meeting in Troia, Portugal.

The Earth Summit was a historic meeting because it put environment at the center of the world's agenda. In June 1992, 50,000 people arrived in Rio de Janeiro, Brazil to what became the world's largest gathering of heads of state and environmental leaders. Delegates from more than 175 countries came to assess the successes and failures since the 1972 United Nations environmental meeting in Stockholm, Sweden and they came to form a comprehensive plan for confronting the world's environmental crisis.

Their plan was for sustainable development, meeting the needs of today without compromising the ability of future generations to meet their needs. That is why the leaders of the Earth Summit announced to the world that real economic progress is based on environmental protection. Furthermore, environmental protection requires economic development. These ideas were derived from resolutions adopted in 1984 by the World Industry Conference on Environmental Management (WICEM). They also came from "our Common Future", a report by the World Commission on Environment and Development, chaired by Gro Harlem Bruntland, former Prime Minister of Norway.

With sustainable development in mind, countries all over the world prepared for their meeting in Rio. They took inventories of energy and other natural resources, examined environmental status and national development strategies and wrote national reports.

Preparation for the Earth Summit also included two years of work by PrepCom (preparatory committees) which had representatives of governmental, non-governmental and international organizations. Some committees dealt with climate change, biodiversity and other environmental issues. Others discussed financing arrangements, environmental education, and institutional changes that would promote sustainable development. Their reports were the starting point for the documents that were debated and signed during the Rio meeting.

The Earth Summit consisted of two major conferences: The United Nations Conference on Environment and Development, and Global Forum'92. In addition, spiritual leaders, parliamentarians, indigenous people, local government officials, and corporate executives held conferences at which they discussed their roles in sustainable development.

The United Nations Conference on Environment and Development (UNCED) took place at Rio Centro. Its participants - heads of states, ministers of environment and their delegations - worked late into the night to finalize the wording of major agreements, called conventions, on Climate Change and Biodiversity. In the process, the industrialized countries of the North and the developing countries of the South had to work out compromises that satisfied each member state (national). They also had to agree on the amount of and the conditions for funding for Agenda 21, the action plan for sustainable development.

Global Forum'92 was held in Flamengo Park, near the beach and at the opposite end of Rio de Janeiro. Its delegates represented non-governmental organizations (NGO's) of many nations, indigenous people, and international organizations such as the World Bank and UNESCO. Many of these groups had booths where there were lively conversations with delegates and with 15,000 Brazilians who entered the park each day.

The symbol of Global Forum'92 was the golden Tree of Life where many ceremonies took place. Nearby, latticework stands held leaves which contained the promises that children made about protecting nature. Nightly concerts, sponsored by the B'Hai community celebrated the world's cultural diversity.

Singing schoolchildren, mime and musicians often created a carnival atmosphere at the Glo-
nal Forum. However, exhibits revealed the oil contamination of Kuwait, minamata disease (caused by mercury poisoning) in Japan, and artists' images of pollution. In 35 tent-like structures, delegates discussed a wide variety of issues such as natural resource use, energy options and the roles of women and youth in coping with the global environmental crisis.

Mme. Jacqueline Alou de Landalou, director, Industry and Environment Office, United Nations Environment Program (UNEP) in Paris, France, described cleaner production and Accident Prevention and Response - two programs in which UNEP and multinational corporations are partners. Dr. Andrew Steer of the World Bank called for policies that harness the links between environment and development - that will get rid of poverty and are good for the environment. He went on to say that one of the most cost-effective ways to carry out these policies was to educate women.

During the final days of UNCED, heads of state and ministers set important new initiatives in motion. The Climate Change Convention (treaty) and Biodiversity Convention were signed by many countries. President Bush, who was widely criticized because he weakened the Climate Change Convention and refused to sign the Biodiversity Convention, promised to save forests and said that the United States will go beyond the requirements of the biodiversity treaty when problems about intellectual property rights and economics were worked out.

UNCED participants agreed on expanded ocean monitoring - important for monitoring global climate change. They also agreed to hold follow-up meetings on urban environment, desertification (very important to African nations) and population.

Although speakers at Rio Centro were far more conservative than those at the Global Forum, they did call for re-examination of the terms of world trade and Third World debt. Some said that, since the Cold War was over, the peace dividend should be spent on environmental security. Others asked that a country's military expenditures be examined before donors give money for environmental protection. Quite a few speakers called for environmental education and asked that women and youth participate in environmental decision making by governments and United Nations organizations.

At times, conflict between industrialized nations of the North and developing countries of the South caused Earth Summit negotiations to falter. The South accused the North of wasting energy and other natural resources, exploiting poor countries, and exporting its pollution to the South. The North criticized the South for unchecked population growth, civil wars, and corruption that diverted money from curing the pollution of poverty. Discussions continued, however, because delegates were reminded that the nations of the North had finance, banking and technology while the South was rich in natural resources such as forests and the minerals that feed industry and agriculture. Therefore, transfer of technology, renegotiation, and debt, and funding to eliminate poverty were essential to sustainable development.

Dr. Mustafa Taha, executive director of United Nations Environment Program said: "Finger-pointing will never save the earth - neither in the North or South. Both North and South have keys to benefit... the South needs assistance to avoid destructive development, not as charity but as a partnership."

In a crowded session at the Global Forum '92, children asked parliamentarians from Germany, Norway, Brazil and the United States, what they would do about the homeless children in Rio, how they would stop the world from drowning
In rubbish, provide clean drinking water and save forests and animals. A girl from Cemblay echoed the thoughts of the Ukrainian delegation at 8th Centro who asked that the world pay attention because the entire country is a nuclear disaster area.

Senator Al Gore of Tennessee, now vice-presidential candidate of the United States, offered ways to deal with the concerns of youth: "...redirecting the enormous sums of money that are going each year for weaponry... use it instead for the priorities that have been discussed by the children, including education, health care, housing, the basic needs of life... arrive at new ways of thinking about the relationship between mankind and the earth's environment."

At the Earth Parliament, a meeting of spiritual leaders and parliamentarians, delegates were reminded that freedom is a prerequisite for solving the environmental crisis. They viewed the ecological crisis as a spiritual crisis. Therefore, people must heal the inner environment in order to heal the outer environment.

What other messages does the Earth Summit have for Youth? Jacques Cousteau, ocean explorer from France, said, "be better than I am." Wangari Maathai who started Africa's Greenbelt Movement and was jailed for her environmental activism, asked, "Will the world accept diversity of flora and fauna when we don't accept diversity of human beings." Onan Daly, wisdom keeper of the Onondaga people in the United States said, "Don't wait for a messiah (savior). Look to yourselves for leaders."

At the Earth Summit, the world's environmental leaders declared:
- economics and environment are partners.
- rich and poor nations and all sectors of society must work together to protect nature.
- education is essential to change the destructive relationship between humans and the rest of nature.

They also created powerful instruments for healing the earth's environment: global agreements on climate change and biodiversity; and guiding principles for sustainable economic development; promises of financial and technological assistance; and Agenda 21. a plan for action.

Will the hopes of the Earth Summit become reality? That will depend on ordinary people in every nation—citizens who are watchful and who demand that industry, governments and other institutions act responsibly in caring for the earth.

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Reflections of the Past Year from Caretakers/USA.

Isabel Abram and Ed Radatz.

As we have concluded the CEE conference in Troia, Portugal, we have been remembered of what has occurred for Caretakers this past year.

We have received letters of support and encouragement from:

- U.S. Senator Paul Simon, Illinois
- U.S. Senator Alan DeMint, Arizona
- U.S. Senator Dennis DeConcini, Arizona
- U.S. Senator John McCain, Arizona
- U.S. Congresswoman John Porter, Illinois
- U.S. Congresswoman Sidney Yates, Illinois
- Dr. Neil Brown, Director UNEP (United Nations Environment Program), N.Y.
- Ma Joan Martin-Brown, Senior Liaison UNEP, Washington, D.C.
- Senator Philip Rock, President, Illinois State Senate

Ms. Barbara Remmin, Executive Director Midwest Center for U.S./U.S.S.R. Relations

We received financial support from:
- Nalco Chemical Company
- Chemical Waste Management
- Recipient of the Nalco Foundation Grant

In the U.S. as Caretakers of the Environment/USA we are very busy developing programs on the following subjects:
- Eco-Art
- Horticulture to Improve Science Education on School Grounds
- Coastal Restoration
- Earth Day Observance

As soon as we have more concrete information on these programs we will report in one of the following Global Forums.
Environmental Briefs

EC-Contest on Europe and the Environment Concludes
by
Joke Wals
Coordinator of the European Schooldays Competition in the Netherlands.

Prizewinners of the student contest around the theme “Europe and the Environment” gathered recently in the Netherlands. Thirty young people from fifteen different European countries came to Wilhelminaoord in the Netherlands to travel through the Netherlands and to discuss the environmental problems in the different countries.

The visit was paid for by the Council of Europe, the European Cultural Foundation, the European Community and the Dutch Ministry of Education. The visit was a prize for a winning entrance: an essay on an artwork concerning the theme: “Europe and the Environment”.

The organizing was situated in Wilhelminaoord, a Conference Centre owned by the Department of Town-Management of the city of The Hague. It is used as a field study-center for schools and other interested groups. There are playgrounds, gardens, a small wood and the prehistoric enclosure - where crafts can be seen and learnt from the megalithic and bone ages together with a park of 2.5 ha (about 6.2 acres), where native plants are re-introduced. Oxen, sheep and wild bear are to be found in small meadows.

The prehistoric settlement and park are examples of successful manmade ecological systems after the desolation of the rural landscape by modern society. These surroundings invited the participants enormously to have a lot friendship as well as having a good discussion. They all had prepared the subject very well at home.

Below a few examples are given as well as a few conclusions reached by the participants.

Environmental Problems in Hungary
by
Béla Kereszti
7-1002 presser, Hungary.

This year a world conference about the environment was held in Rio de Janeiro. The basis of that report is the Hungarian report for this conference. In the end of the 20th century Hungary not only has economical and social problems but serious environmental problems too.

In Hungary most of the people would like to have a good car which was made in Western Europe, Japan or in the USA. But because they don’t have enough money to buy a new car, nowadays our country is filled with old cars which pollute the air. Our energy consumption is several times more than would be necessary. The water conduit in the Hungarian settlements was built earlier than the sewer system, so the outlet water flows direct into our rivers and lakes.

The economical modernization has to include the environment protection. It is to be feared that the products and the technologies which will come into our country won’t stand the European demands of the environment protection. In our agricultural production a lot of chemicals are used. We used more and more fertilizers, pesticides in order to increase the production. Fortunately some of the statefarms have realized that products cultivated without chemicals are more valuable and they can sell the easily abroad. This is a very important step towards joining the Common Market because agriculture is the most important sector of Hungarian economy.

Our big problem is what to do with the waste management. The landfills are ugly, stink and they are nearly full. We burn some of the garbage, but our old-fashioned procedures pollute the air very much. Another possible solution is to recycle the waste. The prerequisite for recycling is the selective collection of domestic waste. In Hungary there is an attempt to collect the waste selectively, with different containers for glass, organic waste and other near our homes.
Our most recent problem is the question of the Bócs-Nagymaros hydroelectric station. About 15 years ago Hungary entered into a contract with Czechoslovakia to build a power station together on the river Danube. Work was in progress but it turned out that in the design of the power station, environmental problems were not considered. If it is finished, the power plant will not only be ugly, but it will also pollute the drinking water in the wells surrounding it. Hungary canceled the contract, but Czechoslovakia wants to finish it alone now. They built a new bed for the Danube in Slovakia and they want to direct the Danube into it. The main argument is that because so much money has already been invested, it would be a waste not to finish it. But of course it would cause environmental as well as political problems, because the Danube is the border between the two countries.

Some of the natural treasures of Hungary are protected as territory of national parks. There are 5 national parks in Hungary. Two are on the Great Plain of Hungary, another two are in the Northern Hills, and the newest one is near the Austrian Hungarian border. The Hortobágy National Park is very close to Debrecen, the town I live in. This is the most famous one in Hungary. It contains the greatest Hungarian “pusztá”. There are several species which can’t be found anywhere else in Hungary. For example the bustard (otis tarda, ed) and a special kind of lark (calandrella brachyrhyncha, Hungarian), the greatest problem concerning this national park is that agricultural production is proceeding. Some years ago thousand of domestic geese were on the pusztá. The were bred there for their liver and feathers, but their droppings caused a lot of damage to the vegetation. By now geese are banished from the national park. The national park of Aggtelek is situated on the most beautiful karstic region in Hungary. It is famous for the cave Baradla which is 25 km long. This dripstone cave is open to the public. But there are many other wonderful caves were only scientific research programs are going on.

Environmental Problems in Spain.
By Laura Montes-anudo Barandilla (16 years), CVYueatun 7-19 A, 28230 LAS ROZALEN (Madrid), Spain.

Yes, it is true, the Earth is sick. It is loosing its air because of deforestation, produced by fires and acid rain. Its face has wrinkles due to desertification. The blood that runs by its veins is poisoned by rivers and seas’ pollution. Its metabolism is changed by non-recycled wastes. Its temperature goes up because of the ‘greenhouse’ gases that pollute the air. Even though the last radiographs show a skin-cancer due to the ozone damage we can perhaps still repair the damage.

It’s true that in 1972, when nations met in Stockholm, during the first world meeting, set as their aim to save the Earth, with the slogan “Only One Earth”. Now with the Rio Conference two decades have passed with environmental care. The question is what is the result. The fact is that everybody talks about ecology, even if they don’t know much about it. Everyone is worried about our home, our planet, but nobody cares about making their own small daily contributions, that will help save the world.

What is necessary to make people all over the world understand, that they have only one place to live and that that place is in danger? That their friends, their biological partners - the animals - are in danger of extinction? How could they understand that by burning forests they are not only digging their own graves, but also the grave of the whole planet? How can people be so blind that they do not see, that the water in seas and rivers loses its transparency, and becomes an aquatic cemetery. Other waters become black, invaded by oil. The same oil that is so much sought for by the industrialised countries.

The wonderful and scarce green spaces are considered to be world wonders, instead of a normal aspect of nature.

It should be easy to help. Would it be too hard to have three bags of rubbish, to recycle as much waste as possible. No, of course not, but you must be willing to take the trouble. For that you need to be concerned and convinced that the Earth is really sick. Which it is. Perhaps it will not die
yet, but if we do not start doing something, while we still can, our children, grandchildren and future generations will be able to do for ever. for by that time it will be too late. It is necessary to know that it is in our hands to save the Earth, and if the hands of the billions of people that live on it. Isn't it true that everyone remembers those photographs with those landscapes full of green trees and between the rocks, a little pal playing with those little birds. There are some drops, that whisper something about how happy they are when they greet their best friend nature. A nature man wants to kill, but why, if we dream about pictures like these.

Each one of us, from our own homes should take care about the water consumption, try to save energy, try not to pollute the air with cars, or sprays that destroy the ozone layer, separate our garbage, so that it can be recycled. If everybody would do these things maybe we can save the Earth. Everybody must have the same aim: "To save the blue planet", the earth. (Abridged by editor)

Erratum.
On page 17 of the last issue of the Global forum Lt.Gen.Arnold Quinzoo who is the National Patron of the Wildlife Clubs of Ghana is stated as being with the Department of Game & Wildlife. This is incorrect. He is a member of the ruling Provisional National Defence Council, PNDC and currently responsible for Youth and Sports Ministry. He is a keen conservationist and much loved by the members of the Wildlife Clubs of Ghana.

Lanzego, 5-8-1992
Poem on the topic:
"Environment and the quality of life-
a Challenge to Europe"
This World...
This world...
a nice place to live
but for how long?
It's time to hurry
hurry to a better place
a place where we can live
in harmony and peace
we all know about the problems
the problems in the world.
How are we going to solve them?
We aren't already sure
But when we try to find a way
a way without a problem
then we can be later on say
The world isn't as bad....
... as we thought!
Wietse Hoekstra, Holland (16 yrs)
Caretakers of the Environment

Guardiens de l’environnement

The 1993 Caretakers of the Environment International Conference will be held in Truro, Nova Scotia, Canada from June 27 through 28, 1993. Truro is located about 100 km from Halifax, the capital city of Nova Scotia, the conference centre and accommodations will be located at the N.S. Agricultural College in the town of Truro.

You are invited to join the Caretakers of the Environment Canada in Nova Scotia, to share the hospitality and help make a difference.

La septième Congrès des Gardiens de l’Environnement Internationaux de 1993 se tiendra du 27 au 29 juin 1993 à Truro en Nouvelle-Écosse. La ville de Truro se trouve à 100 km d’Halifax la capitale de la province. Le Congrès aura lieu à l’École d’agriculture où seront logés tous et toutes les participants.


The 1993 theme will be: "The environment and Natural Resources"

Le thème de 1993 sera :
"L’environnement et les ressources naturelles.

Teachers and secondary-school students are invited to design a project on the theme. The projects will be shared in the so-called "Eco-pro Hunt. Participants are encouraged to have project descriptions in the hands of the organizers by December 31, 1992.

L’on invite à des groupes de professeurs et d’étudiant(e)s d’enseignement secondaire de préparer des présentations sur le thème. Les présentations acceptées par le comité seront présentées au Congrès comme partie intégrante du dit Eco-pro Hunt. Ceux et celles qui veulent faire des présentations sont priés de bien vouloir en soumettre une description au comité organisateur dès le 31 décembre 1992.

Please send your name, address, school and possible subjects to

Caretakers of the Environment Canada/
Gardiens de l’Environnement
1657 Rue Barrington Street
Suite 123
Halifax, Nova Scotia
Canada B3J 2A1
Emerging Themes in Environmental Education

by

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Introduction

Part of this paper served as an introduction to the teacher seminar held at the sixth Caretakers of the Environment International (CEI) conference which will take place in Troia, Portugal from June 15–19, 1992. The outcomes of this seminar will be reported in the conference proceedings.

As a network of secondary school teachers and students who are all actively involved in environmental issues in general and environmental education (EE) in particular, one of CEI’s tasks is to stimulate the interaction between teachers amongst each other as well as between teachers and environmental researchers. Based on surveys conducted during prior conferences, we have learned that many teachers who have been able to pay attention to environmental issues through their teaching, are innovators who often, without much support from the larger community, struggle in isolation to give meaning to the concept of environmental education (Gravenberch, Palmer and Wals, 1992). CEI wants to eliminate the isolation and stimulate the exchange of ideas, problems, solutions between teachers, by bringing teachers together to discuss educational aspects of their EE-projects work and the possibilities and constraints to implement EE in the school curriculum (Wals, 1990).

First we will summarize some of the bottlenecks that have been identified by teachers during past conferences. Secondly, we will contrast the “project approach” to EE with the “full integration approach” to EE which are two implementation models that are widely used by schools attending CEI conferences. Thirdly, we will briefly discuss the educational aspects of some current topics in EE such as environmental problem solving, action taking and concept development. Finally, we will describe the three topics of discussion of the teacher seminar.

Dilemmas of EE in the classroom

In many countries teachers already spend time teaching environmental topics in the classroom. Reports from international groups such as CEI, NAAEE, GREEN, OECD/CERI, ASE and Coastwatch illustrate that teachers adapt their specific teaching subject to be able to pay (more) attention to impacts of science, technology and lifestyles on the natural and social environment. Others are also involved in national educational projects that aim at implementation of EE as a new subject or area of interest in the various subject curricula. Now—without pretending to give a complete overview—what have been the major experiences, so far? Again we will draw from the surveys conducted at past CEI conferences (e.g. Nobt. 1990; Gravenberch, 1991; Gravenberch, Palmer and Wals, 1992).

Lack of time

In most schools science and social studies curricula are already overloaded. As a result, many teachers experience great difficulty when adding environmental topics to their subject. Teachers who alternatively try to make their existing subject more meaningful and relevant to students by integrating environmental topics throughout the school year, often do not have the support needed to do this and/or lack the time to prepare for the newly designed classroom and fieldwork activities.

Another time constraint is posed by national examination programs that are in place in many countries. These programs often control teaching practice by their heavy emphasis on the teaching and learning of “academic” scientific knowledge. In countries such as Holland and Germany, teachers therefore, have little time left to develop and try out new modes of teaching environmental issues.

Learning activities in the context of EE usually imply doing experiential work. In most cases this demands the availability of time on the part of both teachers and students. Teachers not
Teachers need time to reflect on their practice.

Lack of training

Apart from biologists with an initial academic training concerning environmental subjects, most science and social studies teachers have not received appropriate training as far as teaching environmental topics is concerned. Moreover, many teachers feel that they have to be experts themselves in EE-topics as a prerequisite to feel confident as an EE teacher. Two aspects seem to be important in this context. To some teachers their lack of knowledge of environmental issues at an academic level makes them very insecure. Others, mostly the science teachers, consider their lack of knowledge in social sciences at an academic level a drawback in becoming a good environmental educator. The latter group tends to feel uncomfortable with EE’s so-called higher learning goals which can be found in the realms of values clarification, moral development, decision-making and action-taking. These teachers are not uncomfortable with the goals themselves, but rather with their lack of knowledge of how to achieve them through their teaching. Teachers also expressed that they would like to be able to develop a kind of teaching in which they are no longer (the only) source students can rely on the road to becoming scientifically well-informed and critically responsible citizens who can think independently and make proper judgements concerning environmental issues. Many teachers prefer to become mediators instead of bookshelves that wander around in their classroom.

Lack of facilities and resources

In many schools teachers can’t offer their students appropriate facilities which enable them to conduct scientific investigations and to engage them in environmental problem solving in a meaningful way. Some schools offer at the most, rather well equipped labs which were designed initially for student labwork concerning “theoretical” experiments. i.e., experiments to “proof” formal concepts and scientific laws initially presented in so-called theory lessons. Both the availability of particular hardware and teachers’ expertise therefore are not suited very well for realistic environmental field work. The methodologies in use up until now are unfortunately too “scholastic”. In most cases the on the other hand, the methods in use by environmental researchers are hardly manageable for an average student (and/or teacher) at high school.

What is needed therefore are newly developed methodologies for field- and labwork that meet certain minimal standards as regards their scientific reliability and that at the same time can be applied rather easily by high school students. Methodologies that are not too demanding of the students’ investigation skills and the school’s budget. At the same time these methodologies should be able to be shared easily with other schools, to allow for the exchange of data between schools investigating similar environmental parameters.

An additional resource dilemma is posed by the inability of schools to tap the resources and expert centres that already exist in or near the school community. Both type of institutions – the school and the expert centre – have not developed an infrastructure to allow for students to benefit from outside resources, even though the desire to stimulate this type of exchange is often expressed by both sides.

Models of implementation

Roughly speaking one could hypothesize two extreme approaches to implementing environmental topics in the classroom. Some schools prefer to give meaning to the concept of EE by conducting so-called in-depth environmental projects which co-exist with the regular teaching-subjects, but do not always complement these regular subjects (e.g. Seredgy, 1980; Ellis et al., 1981). Some have developed a whole new course that specializes in environmental issues which students can take.
as an elective. In North America, for instance, some high schools have developed an Environmental Science or Environmental Studies course (e.g., Palmer et al., 1990). Others have developed extra-curricular projects for students who want to address environmental issues, but are not given the opportunity during the regular school day (e.g., Irvine, 1991; Brunner and Blomberg, 1991). Again others are developing towards a situation in which environmental issues are an integral part of the school curriculum (e.g., Jowell and Taylor, 1992; Kooy, 1992). In some cases the choice schools make is based on particular pedagogical points of view, whereas in other cases we are dealing with choices that resulted from very pragmatic reasoning. In some countries -like in the Netherlands or in the State of Wisconsin in the U.S.A.- a national or state mandate has been put in place to make EE and integral part of all teaching and learning.

Independent from their particular situation, however, most teachers express the desire to be able to inter-connect teaching and learning of EE-type concepts with teaching and learning of their "counterparts" in the traditional curriculum. A physics teacher, for instance, may wonder, how should the teacher of energy conservation in relation to the "normal" way of explaining laws of thermodynamics in physics. At the same time a chemistry teacher may struggle with the question of how to get students to apply traditional lab skills in chemistry for monitoring concentrations of nitrates and phosphates to measure the water quality of a nearby river.

An important question therefore is, what can we offer to teachers to help them to tackle problems that occur when they try to relate multi-disciplinary environmental concepts and skills to mono-disciplinary content elements in the traditional secondary subject curriculum.

Didactical Issues

Environmental problems regularly are of a multi-disciplinary nature. When defining environmental problem-solving in school settings as the educational process which simultaneously seeks to develop students' investigative, decision-making and action-taking skills, and to solve or alleviate an environmental problem, it is no surprise that teachers involved in EE find it hard to teach students how to apply the knowledge and skills they initially developed in mono-disciplinary contexts, appropriately to address multi-disciplinary environmental issues. We will subsequently look at the challenges of environmental monitoring, concept development, problem-solving as an interdisciplinary process and, finally, action-taking.

Environmental Monitoring

When monitoring parameters that determine the physical quality of the local environment (i.e. indicators of the quality of soil, water and air), teachers have a good opportunity to take advantage of the skills students have already developed through traditional laboratory activities in science. Particularly students' skills developed in field work constitute an excellent basis for doing EE investigations. However, data gathering in an EE context sometimes requires the application of sophisticated scientific monitoring techniques which are mostly used by and can only be afforded by research experts (e.g. monitoring PCB's and heavy metals). There are some examples, however, where these types of highly sophisticated techniques have been adapted successfully to high school education, i.e. to an extent where they have become manageable for students without having to compromise too much on the reliability and transferability of the data (e.g. monitoring air quality using fichen surveys, monitoring heavy metals using bio-assays, monitoring water quality using a water quality index comprised of parameters measured by simple tests). It appears worthwhile to try and enlarge the number of EE-type lab- and fieldwork activities available for students, by adapting particular scientific research methods to fit environmental monitoring (e.g. Van Tramnel, 1990; Mitchell and Stapp, 1992; Rohwedder, 1990).
discussions held at teacher seminars held at
pased CEI conferences, we infer that teachers
differ regarding the extent to which they are
prepared to engage students in the tackling of
controversial issues such as environmental
issues. On the one end of the spectrum, we find
teachers who prefer “objective science” teaching
and -therefore? - dislike to become involved in
teaching activities which could imply “political
influencing” of their students. On the other
hand we find advocates of EE as an attempt not
only to influence students’ value systems in a
way that enables them to consider the impact
humans have on the environment, but also and
perhaps foremost, to prepare them to take action
individually and collectively.

To a certain extent teachers’ feelings of
uncertainty to teach subjects beyond the scope
of their initial training in science education
could be an explanation of this type of difference
in opinion amongst teachers and consequently
of their attitude regarding the content of EE.
Most teachers however, agree with the idea that
EE should at least go as far as to enable students
to get a proper idea of scale-aspects involved in
environmental issues as a helpful means to
reflect on their own feelings of confusion
regarding their responsibilities and actual
possibilities as an individual as to contribute to
solutions.

The concern of the students’ well-being in light
of being exposed to seemingly overly complex
and potentially life-threatening problems should
not be ignored either. To raise awareness of
environmental issues can be paralyzing when
that awareness does not come with the possibility
of change. Students may become bogged down
and apathetic when only exposed to
environmental problems and the negative images
that the concept of “environment” tends to bring
to mind. Hence, as more and more environmental
educators point out, it is important that images
of positive change on the local level are shared
by means of success-stories, student and teacher
exchanges and case studies of environmental
problem-solving (1).

Themes for Joint Exploration

Alongside the promotion of students involvement
in environmental issues, CEI seeks to stimulate
international co-operation between teachers and
educational researchers who could result in
the development of concrete teaching aids which
they can be tried out in actual classroom practice
to find out what consequences evolve from
particular approaches. This type of cooperation
would be particularly useful when teachers take
time to reflect on their own EE experiences and
in doing so research their own practice. Hence,
we propose to do some groundwork drawing
from our own experiences as teachers and
researchers.

In keeping with the three topics of discussion of
the Trosi teacher seminar, we propose to continue
the exploration of the following themes:

* Teaching the international dimension
of environmental issues

Teachers and students in the various CEI-
countries possess local knowledge of particular
problems or can rather easily come to generate
such knowledge. By informing one another, the
international and supra-national character of
environmental problems can become clear to
all. Within this theme the following questions
could be addressed: "How to recognize the local
manifestation of global issues and utilize this
local dimension into EE (examples could be
collected and made available)? "How to recognize
the global manifestation of local environmental
issues and utilize this dimension into EE
(examples could be collected and made
available)? "How could information be made
available to people in other countries?"

* Environmental Monitoring

Assessment of the quality of environmental
components sometimes requires rather
sophisticated measuring methods, that regularly
are not available for students and teachers in
high school. For the students to be taken
seriously by government, public and industry,
their data have to be reliable. It is not easy to find
a balance between good science and good
education. Rigorous application of scientific
monitoring techniques can be expensive and
demand a skill level and level of patience on the
part of the students that is unreasonable in a
secondary school context. "The development of
low tech, low budget monitoring devices which
still produce reliable data has become the
challenge of many student environmental
monitoring networks (GREEN, Coastwatch, Acid
Drops). In addition these networks increasingly
seek to work closely with the ‘research-
establishment’ to benefit from their expertise
and to expose students to people who have
environmental monitoring their career. This
theme seeks to explore the possibilities and
constraints of environmental monitoring. Topics
could include: the role of fieldwork, alternative
monitoring techniques, monitoring in the field
versus monitoring in the lab, exchange of data
through networks, reliability of data, developing
a sense of purpose among students for
environmental monitoring, what to do with the
data?; developing of joined projects between
the
Concept development in EE

Educators in many countries have adopted the so-called constructivist point of learning. In short, this view boils down to the idea that learning is an individual process that can be stimulated by confronting the learner with events that can make the obsolescence of his/her existing thinking patterns clear to him/her. Adaptation of one's so-called cognitive structure requires an active process of cognitive reconstruction of one's reasoning patterns [e.g., Novak and Gowin, 1984; Driver and Oldham, 1986; Driver, Guesne and Tiberghien, 1985]. So-called concept maps are used to represent patterns of thinking while showing concepts and their inter-relationships both to illustrate the actual situation as well as the one people are supposed to arrive at in their minds at the end of a learning activity. It is important for classroom practice to note that constructivism confronts us with two key ideas: 1. learning needs an active involvement on the part of the learner; it is the active construction of meaning in an attempt to make sense of the world in light of conflicting, ambiguous and confusing information that inspires genuine learning; and 2. educators have to be aware of what is currently in students' minds and at the same time need to have a sense of in what direction conceptual change should occur as a result of teaching and learning.

It is easy to understand from the foregoing that concept development in EE because it is multi-disciplinary, nature is more complicated than it is in traditional, mono-disciplinary subjects teaching. Recent research (e.g., van der Loo, 1989) made clear what particular terms are used in major articles, policy statements regarding environmental issues. The central concept which is supposed to be very helpful has become sustainable development (SD). Aside from the question whether this is a useful key concept for EE (for an interesting discussion of that issue see Jokling, 1991), we refer to Figure 1 for an illustration of the way in which major concepts such as sustainable development can be made "visible" using more concrete environmental concepts. A key question pertaining to the integration of EE concepts in traditional subject teaching is to find ways to interconnect the EE concepts to the traditional (science) concepts.

Action-taking in EE

Is the ultimate aim of EE to prepare students for responsible action that will stimulate--let's stay with it for now--sustainable development, or even to engage students in action taking as part of the learning process? Or should EE provide information and stimulate a kind of environmental literacy which they can then in their own time, so to speak, use to become environmentally responsible citizens? From the
Irish Coastal Environment Group Launches European Eco-Tourism Project

by Karin Dubsky,
Coastwatch Europe Coordinator
and Eileen Gaughan,
National Coordinator ECOTOE for Ireland

Earlier this year the European Commission Tourism Directorate put out for the first time a call for tender on Eco-Tourism projects. Of the over 400 proposals first considered by the commission twenty-five were finally chosen. This included one for Ireland which was proposed by Karin Dubsky of the Coastwatch Europe Network for the Irish Coastal Environment Group.

Under the heading “Biotop Protection and Environment Guide” twelve Eco-Tourism case studies in seven countries will be prepared. These six countries are Czechoslovakia, Germany, Ireland, Netherlands, Portugal, Sweden and United Kingdom. The twelve completed case studies are to be published by the European Commission to aid dissemination of ideas.

The Irish proposal was born out of a coastal ACSI adoption scheme designed earlier to raise public awareness and thus conservation of Areas of Scientific Importance in Ireland. This EC contract focuses on such areas. The contract has three elements:

a) Local groups adopt in spirit areas with important plants, fossils, wintering birds or other unique features.
b) Adptive parents together with interested bodies in the area scrutinize present use, sensitivity of the environment and tourism potential. They then produce activities which allow the tourist to enjoy and discover more about the environment, its value and hence become more aware and caring.
c) Environmental guides are then to be drawn out of a pool of local people involved in this project to facilitate in the activities and to help design an overall plan for the area. Obviously we do not only have environmental protection, tourist satisfaction and sensitisation in mind but also job creation. In this context a more formal environmental guide training course should be developed.

We hope that this tandem involvement of local community and tourist will create a more sustainable industry which knows more financially uses to dunes than, for example, golf courses, car parks and sand pits.

For more information about this project contact the authors at the following address: Irish Coastal Development Group
8 Belgrave Square
Monkstown, Co. Dublin, Ireland
Fax: +353 1 2802191
schools attending conferences such as the ones organized by Caretakers of the Environment.

*Action Taking*

In general one could say that Environmental Education seeks to improve students' quality of thinking dealing with environmental issues, as a basis on appropriate environmental concern which stimulates to take action. Earlier we mentioned the problematic status of action taking in education both from a philosophical point of view and a pedagogic point of view. Teaching and learning environmental concepts, as well as how to solve problems in an appropriate way, requires special knowledge and skills on the part of teachers and students. What should the role of action taking be in environmental education? Can and should action taking become a part of the regular classroom? What are the possibilities and constraints of action taking within the formal school system? What experiences bring the participants to the seminar which have relevance to this subject?

CEI-participants could support one another by formulating the exchange of successful teaching modes and learning activities. Based on their own involvement in EE projects, teachers could develop a case-study book with examples of action taking in schools. Some of the cases could be published in this periodical. All the cases that develop could be bundled and synthesized around a kind of matrix for action taking in environmental education.

References


Footnotes

- Problem solving can be viewed broadly as a simultaneous process of problem-identification, information gathering, problem analysis, problem definition from various points of view, generating solutions, selecting a particular solution, generating a plan of action, executing a plan of action, documentation of the process and the outcomes, and reflection and evaluation throughout the process (see for instance Bull et al., 1989 and Waal, Berting and Stapp. 1990).
The Yarkon River

The Yarkon River passes through the territory of several cities, among them Ramat Gan. The river was traditionally an oasis of nature in the middle of the city, but - like many other rivers today - it has become badly polluted and is almost dead, as a result of the industrial wastes which are dumped into the water. Several ambitious programs have been undertaken to save the river.

One of the programs consisted of a large cleaning up project. In this project more then 400 high school students were sent into the area to clean specific areas, according to an organized plan. The pollution is mainly caused by picknicking in this case (Photo 3 and 4).

During Israel's Environment Week, a group of elementary school pupils who were learning about the Yaron River took part in a special campaign to save the river. They set up an information booth in the town square and wrote a petition which was signed by hundreds of people who came to the stand. In photo 5 and 6 you can see the children, and people signing the petition. The signs in the background say "Save The River". The event was covered in a special television show for children about the environment.
At the Earth Summit in Rio de Janeiro, Israel was among several winners of the first prize for nature preservation. It is true that Israelis are known for their love of nature, and their consciousness about preserving nature spots. Yet, when it comes to ecology and environmental awareness, Israel has much to learn. Israel's Ministry of the Environment is barely three years old, making it the youngest of any governmental ministry.

The Ministry works together with the country's municipalities - a department of The Environment is established in each major city, with dual reporting and budget responsibility - both to the city and the Ministry. The position of the author is that of Coordinator for Environmental Education and Information in the city of Ramat Gan.

In that position she can take initiative and has the freedom to start new and innovative projects. The main objective is to raise public consciousness and involvement in environmental issues - both among youth and adults. The work is both within and without the formal education system, starting from nursery school and continuing up to highschool. It involves writing curricula about environmental issues as well as organizing events and youth activities. The major of Ramat Gan is a strong supporter of environmental awareness and education, which makes the job easier.

The author started her job in the Ministry in January 1991, and began her work just as the Gulf War broke out. The first official project was a result of these circumstances. She was assigned to the Emergency Services Department to help residents whose homes were destroyed by the Scud missiles. Ramat Gan was the hardest hit of any Israeli city, having suffered 3 major attacks, with entire streets and neighbourhoods being damaged. Hundreds of Ramat Gan citizens were relocated to temporary shelters.

In photograph 1 you can see the area of Ramat Gan where an entire neighbourhood was hit. Six of the buildings were completely destroyed. As soon as the attack was over, the residents were left with the sight of their homes in ruins. For this reason the choice was made to undertake a project here which would help raise the residents morale, and bring some hope some smiles some optimism into the city. Together with the local art school, we decided to paint a mural along the fence which was put up at the site of the attack to enclose the area under reconstruction.

The children and their teachers chose a humor-
Jeruzalem (photo 7).

The garbage situation.

One of the most serious ecological problems in Israel is the vast amount of garbage which is generated. 98% of the waste in Israel is not recycled. Awareness about recycling is only just beginning in Israel today, although recycling paper has been going on for many years in this country. In Ramat Gan an experimental project to recycle paper and plastic was undertaken.

To promote environmental information, a museum exhibition was compiled and organized. The central theme of the exhibit was to explain the problem of garbage produced in people's homes and the solution provided by recycling. The exhibit is opened by the garbage granary (photo 8). The exhibit is continued within kitchens filled with empty wrappings and disposable packages. Visitors were generally shocked by the amount of packaging thrown away every day in an average Israeli kitchen (about 2.5 kg). After that panels were built showing how the situation on the earth deteriorates from a clean planet to a polluted planet crying for help because of industrialization, the rise of technology and the growing population. During the exhibition creative workshops were held for adults and children, demonstrating what can be done with plastic, aluminium and paper.

The electric company also brought materials to demonstrate the importance of recycling and a paper recycling factory taught a workshop on making paper out of recycled newspaper pulp. The children who took part in the exhibit and the workshops became so involved that they refused to throw their rubbish into an ordinary garbage can - they insisted on recycling it. The success of this exhibit was very impressive and as a result it has become a travelling exhibition - being loaned to different museums and institutions upon request.

These are some good examples of positive intervention. The general line in the programs is more an ongoing, continuing programs rather than one time events. For that reason the ideal combination for projects is: an educational program, some central event, such as a large Happening, and structured activity. One of the ways to increase public awareness is to make sure that the projects receive wide publicity, in newspapers, childrens magazines and on television.

Much of the work done involves the every day work of putting together curricula for school programs and lectures for youth and adults throughout the area. However every project becomes more successful when a creative touch is added to it. The youth in all ages is very open to this idea and really wants to be involved in environmental projects within the community.

(Adapted by the editor from the presentation as given at the conference in Portugal.)
Conference announcements

A planning and strategy conference of the Global Resettlement and Elections Network and of the World Constitution and Parliament Association will be held on 16 to 19 of November 1992, in Accra, Ghana, at the International Conference Center. The correspondence address in Ghana is: Kofi Gyakari, Secretary of the Ghana Branch of the World Constitution and Parliament Association, P.O. Box 10552, Accra-North, Ghana.

Cooperation in Development

is the title of a conference on Environmental Education in Europe which is organized by the Noordelijke Hogeschool Leeuwarden en de Hogeschool Rotterdam & Oostkraken and will be held aboard a ship in The Netherlands, November 8-14. The conference seeks to bring together EE professionals, teacher trainers, decision-makers in EE and curriculum developers to discuss the central elements of EE on the European level, teacher training and EE and examples of EE strategies from various countries. Although the conference has already filled up, people interested in the proceeding may contact: Hogeschool Rotterdam, c/o Ms. M. Bassani, P.O. Box 2660, 3000 CR Rotterdam, Netherlands. Fax: +31 10 4049399.

ECO-ED

is the title of the much anticipated follow-up on the environmental education and communication aspects of the Earth Summit or UNCED conference which was held earlier this year in Brazil. ECO-ED is a world congress for Education & Communication on Environment & Development which will be attended by over 3000 environmental educators, writers, policy-makers and activists. Caricatures of the Environment will be one of many NGO's presenting their activities. The conference will be held in Toronto, Canada, October 17-21. The secretariat of the conference is located at 110 Eglinton Ave. West, 3rd Floor, Toronto, Ontario, Canada, M4R 1A3 Fax: +1 416 483 9691.

Publications and Materials

The sixth edition of the widely used Field Manual for Water Quality Monitoring (240 pages, 100 illustrations) is now available. The manual which is used by thousands of schools around the world has been written by Mark Mitchell and William Stapp from the University of Michigan in collaboration with several students. Every edition represents an improvement of old material as a result of feedback from the field as well as an expansion with new activities. The new manual includes, for example, sections on heavy metals testing, use of the global computer education program "EcoNet," Cross Cultural aspects of international water quality monitoring, and a description of the expanding Global Rivers Environmental Education Program (GREEN). The manual costs $9.95 for people within the U.S. and $10.95 for people outside of the U.S. There is a 20% discount on orders for ten or more. To order write: William Stapp, 2500 Delaware, Ann Arbor, Michigan 48103, U.S.A. The manual is also available in Spanish.

Eco Badge is a personal pollution monitor from Vistionics Inc. The badge measures ozone levels at ground level and is calibrated in ranges of 10 ppb to 550 ppb. The badge can be used with curriculum materials developed by Vistionics which is designed to fit the California State Science Framework. For more information contact Gary Short, Vistionics Inc., 230 North Maryland Ave., Suite 310, Glendale, CA 91206, U.S.A. Fax: +1 818 409 9334.

Trends in International Environmental Law prepared by editors of the Harvard Law Review examines the latest trends in international environmental law. Contact ABA Order Fulfillment, 750 North Lake Shore Drive, Chicago, IL 60611, U.S.A.