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Colofon

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The Global Forum for Environmental Education
c/o Orema b.v.
Van der Valk Boumanweg 180 Y
2352 JD Leiderdorp, The Netherlands
fax: (+)31 71 5890168

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Scene from the 1995 CEI conference in Russia.

Editors in chief: Frits Gravenberch & Arjen Wals, Netherlands.

Editorial Board:

Jan Apotheker, Netherlands, editor
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Notes for contributors

First of all, we welcome contributions, whether it is an article, a poem or a report or anything else suitable for Global Forum.

Text

Text should be without format (DOS file or ASCII file). An article can have a maximum length of 2000 words. Footnotes should be avoided. Please accompany each article by a short summary and an address for further information. If you are unable to use a computer, we still welcome your contributions!

Tables, figures and illustrations

Do not include tables, figures and illustrations as part of the text. Gather them together in a separate file or on paper. In the text you can point out the approximate position of tables, figures and illustrations. We would also like to receive captions to the illustrations you send us. We always welcome pictures and photographs!

Deadlines

Global Forum appears twice a year in June and in December. Contributions for the June issue have to be received before May the 1st, contributions for the December issue before October the 1st.

Please send your contributions to:
S.L.O.

c/o Frits Gravenberch
Postbus 2041
7500 CA Enschede
The Netherlands
fax: (+)31 53 4307692
email: F.Gravenberch@SLO.NL



1996 CEI conference address:

Sintermeerten College
Valkenburgerweg 219, 6419 AT, Heerlen, The Netherlands
Tel.: (+)31 45 5741181 or (+)31 45 5711664,
Fax.: (+)31 45 5715094
e-mail: didderen@antenna.nl

Editorial

'Everything changes' seems to be the only certain thing in life. This issue of Global Forum illustrates that the magazine evolves with every new issue. Marion Smidt, an environmental education graduate of Wageningen Agricultural University in the Netherlands, has taken care of the lay-out and design of this issue. I hope you agree with us that she has done an excellent job.

We have included this time guidelines for contributors (page 2) and a new section called 'Student Comments' in addition to our regular feature articles which this time come from South Africa, Canada and the Netherlands. Naturally we hope to receive many contributions from both teacher AND students from around the world. Do not hesitate!

The site of CEI's annual conference changes every year as well. This June we will be in the Southern part of the Netherlands when Sintermeerten High School hosts the tenth anniversary conference. Again over 200 teachers and students from over 20 countries are expected to participate. CEI will have a special display in the exhibition area, will organize a special session on the past, present and future of CEI, and will also issue a special commemorative T-shirt.

As we write this editorial it appears that the 11th conference will be organized by a special boarding high school for environmental studies in the Negev desert in Israel. An official announcement will be made at the 10th conference and in the next Global Forum. Stay tuned!

CEI has also entered the world wide web on the Internet. CEI/Sweden has developed a homepage. The homepage can be found by searching via 'altavista.digital.com' using 'Caretakers' as the search word. CEI intends to develop its own homepage in the near future.

Enough 'change' for one editorial. We hope you enjoy reading this issue of Global Forum and we look forward to seeing some of you in Heerlen/Kerkrade at the 10th anniversary conference.

Frits Gravenberch & Arjen Wals

Que todo cambia parece ser la única cierta cosa en vida. Esta edición de Foro Global muestra que la revista se desenvuelve con cada edición nuevo. Marion Smidt, una graduada en educación ambiental de la Universidad Agrícola de Wageningen en los Países Bajos se ha ocupado de la diagramación y el diseño de esta edición. Espero que convenga con nosotros que ella ha hecho un trabajo excelente.

Además de nuestros artículos regulares de facción que esta vez vienen de África del Sur, Canadá y de los Países Bajos, en esta edición también hemos incluido directivos para los contribuidores y una sección nueva que se llama 'Comentarios de Estudiante'. Claro que esperamos recibir muchas contribuciones no sólo de los profesores sino también de los estudiantes de todo el mundo. ¡No vacile!

El lugar de la conferencia anual de CEI también cambia cada año. El junio que viene estaremos en la parte meridional de los Países Bajos cuando la escuela secundaria de Sintermeerten celebra la décima conferencia de aniversario. Otra vez se espera que participen más de 200 profesores y estudiantes de más de 20 países. CEI tendrá una exhibición especial en la área de exhibición, organizará una sesión especial sobre el pasado, presente y futuro de CEI, y también publicará una camiseta especial conmemorativa.

Al escribir esta editorial se hace cada vez más oficial que la onceava conferencia será organizada por una escuela interna secundaria para estudios ambiente que se encuentra en el desierto de Negev en Israel. Nos esperamos presentar un anuncio oficial en la decima conferencia y también en el la próxima edición de Foro Global. ¡Procura estar al corriente!

Aparece que CEI también ha entrado en la ancha tela mundial en Internet. CEI/Suecia ha desarrollado una "homepage". Se puede encontrar está "homepage" por buscar a través de ['altavista.digital.com'] usando como palabra de registro 'Caretakers' (Guardiánes). CEI tiene la intención de desarrollar su propio "homepage" en el próximo futuro. Bastante 'cambio' por uno solo editorial. Esperamos que disfrute leer esta edición de Foro Global y tenemos mucho ganas de ver algunos de vosotros en Kerkrade en la decima conferencia de aniversario.

Frits Gravenberch & Arjen Wals

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SUSTAINABILITY AS UNIFYING THEME IN BIOLOGY CURRICULA

Danie Schreuder

Environmental Education Programme, University of Stellenbosch,
7600 Stellenbosch, South Africa

Abstract:

This paper attempts to investigate how biology education can contribute towards the development of environmental literacy, by addressing two key elements thereof, namely the development of critical understanding of the environment and elements of an environmental ethic. It is suggested that the development of both these elements can be enhanced by considering sustainability as a unifying theme in the teaching of biology.

Introduction

One of the most crucial adaptations that needs to be made in our school curricula in order to help people better understand the environment, and their own role in it, must be addressing the gap that has developed between school and reality. Unless we, as teachers begin to realize that we are often reproducing the values and beliefs of academics, technocrats, politicians and economists in our teaching, we will keep contributing towards widespread environmental illiteracy and ignorance. This, in turn, may be one of the main reasons for the ever deepening environmental crises -- both ecological, and socio-political.

If we regard one of the main tasks of education to be enabling people to make sense of the environment, and participate in the management thereof, it must be admitted that we have failed in many aspects. Orr supports this view in stating: "Not only are we failing to teach the basics about the earth and how it works, but we are in fact teaching a large amount of stuff that is simply wrong" (Orr, D: 1992: p 85).

If we as biology teachers reflect critically about what we teach in our classrooms, and how we (are often trained to) teach it, we may begin to understand what the "stuff that is simply wrong" refers to. The responsibility of this discipline is a phenomenal one, and radical rethinking about both content and approach to the teaching of this subject is essential if we want to avoid contributing to, and exasperating our environmental predicament.

This paper attempts to investigate how biology education can contribute towards the development of environmental literacy, by addressing two key elements thereof, namely the development of critical understanding of the environment and elements of an environmental ethic. It is suggested that the development of both these elements can be enhanced

by considering sustainability as a unifying theme in the teaching of biology.

The quest for the golden thread: the concept of unifying themes

Unifying themes can be regarded as those central concepts and ideas around which a curriculum can be developed. Falk (1971:31) describes it as follows: "A unifying theme is an organization of facts, concepts and generalizations that represents a body of knowledge in a large segment of the field to which it is related." Unifying themes can be likened to the thread that keeps the beads, or pearls of a piece of jewelry in place; without it, we may have a handful of objects with a very limited function. Using this analogy, we as teachers of biology must ask ourselves: Do we not often leave our students perplexed -- with a handful of disconnected concepts that must be mastered in order to make a grade or pass a standard? There are a number of good examples in literature of attempts to suggest unifying themes for biology curricula. The most widely known come from the BSCS curriculum materials, and include the following concepts: Evolution, diversity and similarity, genetic continuity, adaptations to the environment, behaviour, structure and function, regulation and homeostasis, scientific investigation, historical development of biology (Adapted from Voss & Brown, 1968: 52 -- 53).

Most of these are incorporated in biology curriculum documents, and there can be little doubt about the potential value of implementing these themes. Studying organisms, and biological phenomena within the framework of these organizing principles and themes can help biology become a tool with which the natural world and the way it functions can be better understood.

However, whether this happens in practice is highly doubtful and it appears as if the concept of unifying themes as the basis of biology education simply does not reach the level of the classroom, but remains abstract and theoretical, perhaps reflecting the highly academic and theoretical nature of the content of many biology curricula. The current examination system has no doubt also played a major part in this, in that the competence of a teacher is often gauged by the pass-rate of his pupils.

In order not to further alienate humans from the natural environment, we will have to consider alternative unifying themes to help biology take its rightful place as a tool to lead to better understanding of the living world and its dynamics, and how our behaviour impacts upon it. One of the more promising alternatives is sustainability.

Sustainability as unifying theme in biology curricula

The concept of sustainability has gained momentum as central

theme in contemporary conservation strategies, management policies, environmental education and community lifestyles. There are numerous definitions and descriptions of the concept, and the fact that it is often used loosely in terms of development, consumer patterns, agriculture, growth, and a host of other aspects of life further

complicate the concept. One of the most useful descriptions of the meaning of the concept is found in "Caring for the Earth: A Strategy for Sustainable Living," a publication published jointly by the IUCN, UNEP and the WWF:

"If an activity is sustainable, for all practical purposes it can continue forever" (IUCN, UNEP, and WWF 1991: 10).

It should be clear from this that sustainability can have exciting possibilities as a unifying theme for biology education. For instance, if the functional role of an organism (niche), and the life-support systems on earth are examined in terms of sustainability, a number of biological concepts may be understood better. As an example, the concept of niche is being discussed briefly.

The Niche-concept and sustainability

A niche is described as "...not only the physical space occupied by an organism, but also its functional role in the community" (Odum 1983: 401), and as "...the role and status of an organism within the community it occupies" (RD Great Illustrated Dictionary 1984: 1150). In itself it is a central concept in biology teaching; it accentuates the unique function of every living form, how each individual has been adapted to fill its function and how

collectively, living organisms create the conditions that make life possible on this planet. Indeed, Spaceship Earth does not carry passengers, but only crew members, every one of which contributes uniquely towards sustaining those conditions that make life possible.

To study organisms within the framework of how it is adapted to fill its niche is a sensible exercise; clearly the behaviour of any organism must conform to the demands of sustainability (it must be such

that it can continue forever). For instance, if an organism is not able to reproduce itself effectively, the progeny might not be able to fill its niche sustainably. This explains the astonishing adaptations shown by organisms with regard to reproductive processes and systems, including the wonders of meiosis and mitosis. The waste products of plants and animals -- including their own bodies

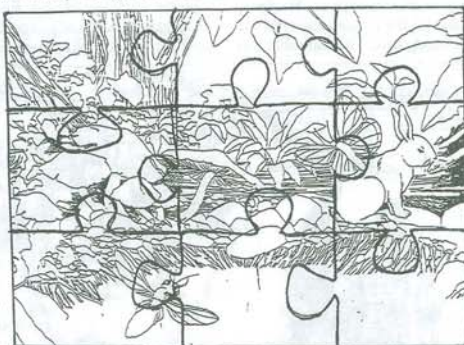
when they die -- must be of such a nature that it can be recycled through the natural processes, so that the elements are made available for other forms of life, and the earth does not run out of supplies. Each plant and animal need to maintain a dynamic equilibrium between itself and the environment -- both chemically, and physically -- in order to function effectively. The homeostatic mechanisms of plants and animals, ensuring a constant internal environment, may be better understood referring to the need for organisms to function in an optimally sustainable fashion.

In short, there are not many organisms alive today that will not pass the test of sustainability, unless humans have changed its living conditions so drastically that it just cannot adapt effectively. These animals and plants have either become extinct, or are endangered.

Some examples of student activities on sustainability of organisms

During an action research project with some student teachers, a number of interactive classroom activities were developed which focused on sustainability in the biology curriculum. Some are briefly described here.

1. Investigating sustainability in animals
Some possible "rules of the game" of sustainable



Unifying themes helps us to fit the pieces together..

living were discussed. It was agreed that an organism lives sustainably if:

- it does not take more from the environment than what it puts back;
- it always lives in an interdependent relationship with other organisms with which it shares a habitat;
- it is adapted to a specific environment and niche;
- it does not produce products that create conditions that are detrimental to other forms of life;
- it can reproduce itself.

Earthworms were studied *vis-à-vis* these principles, and the role they play in an ecosystem. Students were requested to report on the sustainability of the earthworm after the investigation. Remarkable was the new understanding that developed for what is often regarded as insignificant and boring detail -- the fact that all segments are light-sensitive, the retractable chaetae, very complicated reproductive system, coelom sacs, etc.

2. Designing a "new" organism.

Groups are requested to design a new species that can live sustainably in a vacant niche that has been created. This new organism, together with its habitat and niche, must then be introduced to the rest.

The rest of the class attempts to point out weaknesses in the design, while the designers defend its sustainability.

This activity stimulated some innovative thinking, and a number of creative ideas and designs resulted, as well as some constructive discussions about adaptations.

3. Humans, lifestyles and sustainability

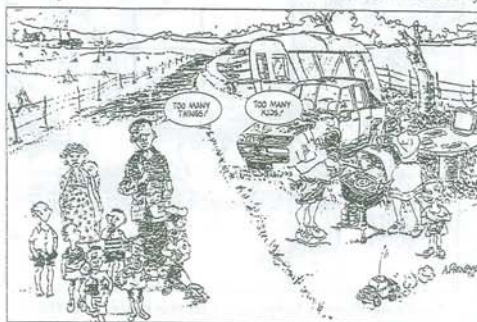
A discussion about the lifestyles of humans was a natural sequence to the previous exercises. Emerging from the discussions was a discussion about the core values of sustainability (Dept of Education, Queensland, 1993:3) and especially those values that support social sustainability (intergenerational equity, basic human needs, participation and human rights).

Not only did students discover how unsustainable modern human lifestyles are, but they collaborated in constructing a personal audit for sustainable lifestyles that led to some very constructive self-reflection and discussion.

Conclusion

There are very few themes with similar exciting possibilities for developing and enhancing real understanding of biological and ecological concepts than sustainability. Many biological concepts such as genetics, homeostasis, respiration and photosynthesis, natural cycles, population dynamics and evolution are more readily understood when related to sustainability.

Similar possibilities exist for other subjects, as school subjects such as Home Economics, Agriculture, Geography, and Language Studies can benefit if teachers work collaboratively in developing the concept as a unifying theme for the school curriculum.



Who are the real overconsumers?

In a society characterized by environmental risks of overwhelming dimensions, it has become critically important that education accepts the challenge, and each discipline assumes its real responsibility.

This is the task of enabling young people to develop real understanding of the world and how it works, as well as his/her role in it. Spaceship Earth can not afford another generation that is environmentally ignorant, with unsustainable lifestyles characterized by overconsumption, overproduction of waste, pollution, conflict, poverty and violence.

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Editorial NKO, the Parrot

'Ghana Wildlife Society'
Box 13252, Accra

The Save the Seashore Birds Project -Ghana (SSBP -G) was formed some ten years ago to protect terns and other waterbirds and their habitats along the coast of Ghana. The project was a joint venture between the Government of Ghana on the one hand, and the Royal Society for the Protection of Birds (RSPB) and Birdlife International on the other.

The project's activities focussed on research, site protection and conservation education to change the attitudes towards these birds of people who live along the coast and get their support and co-operation for the success of the project.

Over the past decade, the SSBP-G contributed immensely to public awareness on wildlife conservation in the country. The Wildlife Clubs of Ghana which was initiated by the project in 1987 had been and remain a way to help young people understand and respect the importance of wildlife. With only two Clubs and just over 100 members to begin with, the WCG can now boast of over 250 Clubs with more than 10,800 members.

In 1991, the SSBP-G revived the Ghana Wildlife Society which was first formed in the 1970s but became dormant after a few years. The Society has grown steadily and is now a strong non-governmental conservation movement. Thus, when the SSBP -G ended in June 1994, the Society naturally took over and continued the activities initiated by the project. The Society's Clubs and Members Groups for children and adults respectively are now springing up in all nooks and corners of the country.

Children are a target group for the Society's education programme and the Society aims to establish Clubs in every school in the country.

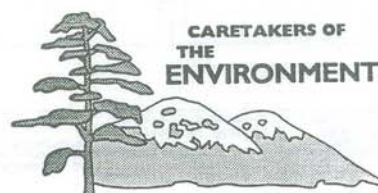
It is encouraging that you members of the Wildlife Clubs have enthusiastically adopted the message of wise and respectful use of our natural resources. You should try to pass it on to your families and communities. This way, we would be working toward the Society's aim to conserve wildlife for a better environment and improved quality of life for mankind.

As pioneer Clubs you have a task to explore ways of sustaining your Clubs and encourage other schools nearby which have no Wildlife Clubs to form one. We must work harder to achieve more for Mother Earth and in so doing ensure a better future for ourselves. This is a vision all Clubs must rise up to!

Announcement

Dyce Academy, Scotland is pleased to present the Aberdeen Conference Report, of the 8th International Conference, 13-18 June 1994, Aberdeen, Scotland

The report contains a complete record of all the main conference activities including the very meaningful Student Recommendations which were presented on the final afternoon. You may wish to use the summarised recommendations in your school and perhaps to circulate them more widely.



Further copies:
Dyce Academy, Riverview Drive, Dyce, Aberdeen,
AB2 0NF, Scotland.
Tel: (+)224 725118 Fax: (+)224 772571

THE EU-PROJECT "THE CONFLICT BETWEEN ECOLOGY AND ECONOMY, POSSIBILITIES FOR SOLUTION"

Frits Gravenberch, S.L.O., Postbus 2041, 7500 CA, Enschede, The Netherlands

Abstract:

Currently, teachers, curriculum developers and teacher trainers from Germany and the Netherlands are conducting an environmental education project called: "The Conflict between Ecology and Economy, possibilities for solution". Their main aim is to develop and test curricular models to assist teachers in guiding their students in conducting so called independent investigations in the context of environmental education. The particular investigation here concerns conflicting interests between environmental conduct on the one hand and individual economic interest on the other, as experienced by the main public. The final curricular models will consist of teaching materials which represent different national and school specific conditions while having the same pedagogical model as a common basis. This contribution reports a project in one Dutch school where students interviewed fellow students, as well as people at home and civil servants in the town-hall at their municipality. The article concludes with some results of the final international project conference which was held in February 1996, in Enschede in the Netherlands.

Introduction

Currently, both in Germany and the Netherlands - as far as Upper Secondary is concerned - environmental topics are dealt with mostly during natural sciences classes. Generally speaking, the topic is totally ignored in Economics. As a result of successful application made to the European Community by Prof Gerd Jan Krol from Wilhelms University in Münster - who is both a teacher trainer and a researcher at the of Faculty for Economics - currently an environmental education project is conducted together with German teachers in Social Sciences (Sozialwissenschaften) and Dutch teachers in Geography and Economics. The Dutch Institute for Curriculum Development (SLO in Enschede) established a team to assist the Dutch teachers and

to provide expertise in curriculum development.

Environmental education often causes (or strengthens already existing) feelings of personal guilt among students in order to open a (moralizing) perspective for individual action, while neglecting the impact of collective social dilemmas on this particular individual attitude. Our project's aim was to develop and field-test a pedagogical approach which would support teachers in bringing the aspect of collective social dilemma's into the students' perspective. In addition, it was decided not to produce teaching materials such as detailed student worksheets, but to encourage the teachers to try out this particular approach while using already available actual information on subjects such as Traffic, Energy and Waste from sources such as news paper cuttings and relevant articles. Of course, leaving teachers free to prepare concrete student materials, themselves. Figure 1 illustrates the application of the initial model to the theme of Traffic, without necessarily stressing economic aspects of the issue under study.

The project at Anna van Rijn College in Nieuwegein

At the start of the project the SLO project staff produced a booklet to every one of the themes. Every one of them contained a scheme like the one in fig 1, and news paper cuttings and articles to supply the teacher with concrete starting points to make a complete design for a series of lessons on the selected theme. In addition to this material the teacher - i.e. Leo Mes, who is a Geography teacher at Anna van Rijn Comprehensive School in Nieuwegein - decided to produce a student guide by himself as a means to instruct his student how to conduct an independent survey. The survey

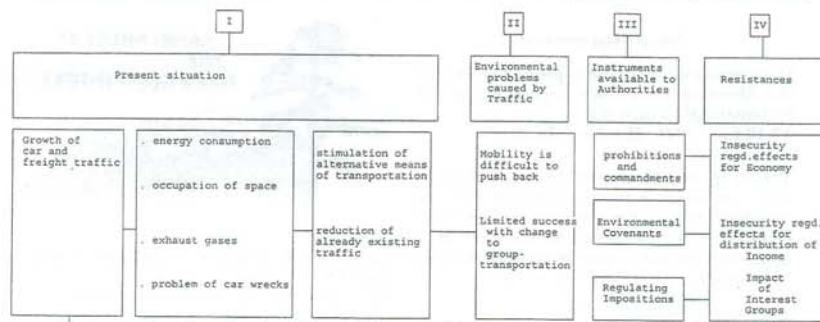


Fig.1 A teaching model about the role of collective dilemmas in environmental decision making

concerned representatives of three groups in the students' own community, i.e. fellow students, relatives at home and civil servants in their town hall who were involved in Waste Management. The interviewees were asked to express their opinions on environmental issues by making a selection between right and wrong concerning the following statements:

- More waste baskets should become installed together with signs that urge people to deposit their waste in them
- Speeding effects the environment negatively; more speed control measures are necessary
- People who use an over-average amount of water should be given a penalty on the price per liter
- More signs should become installed to urge people to switch of their car engine in areas near to bridges
- All family houses should become provided with energy saving lamps
- Non-rechargeable batteries should become more expensive to further the purchase of environmental friendly ones
- We need more adds that urge people to save on energy consumption
- Road taxes on natural gas driven cars should become lower to stimulate more people to drive on natural gas
- Higher fines and penalties on illegal waste dumping should become implemented
- Diminishing environmental pollution is achievable by more severe regulations and penalties, only.

Next, the students invited the interviewees to express their opinion on particular measures to prevent environmental pollution, by ticking the following questions and consequently reason their choice, very briefly.

What kind of approach do you prefer to prevent environmental pollution? Please explain.

- Pricing of particular goods
- Implementation of laws and regulations that further the quality of the environment
- Try to convince people by means of special programs on radio or television to use the environment in a more conscious way

The students recorded statements such as: financial incentives work best, top down enforcement is not always the key to success, personal involvement as well as self-responsibility deliver the highest efficiency. During their oral presentation at the end of the project the students expressed their amazement about the fact that some interviewees seem to prefer higher fines and more severe penalties as far as other people are involved and more delicate approaches such as 'talking people into' a more environmental friendly conduct using means such as TV spots and 'green radio adds', when they themselves were concerned. The students also found that younger people are more in favor of rules and regulations than older people.

On average, all groups found that 40 % of the interviewees were in favor of laws and regulations, 30 % of influencing approaches and 30 % of price measures as appropriate means to implement improved environmental conduct. The teacher himself, expressed in an interview at the end of the project that this particular way of teaching had been a very stimulating experience to him. This was because of aspects such as having the opportunity to try out new teaching approaches and new student activities as well as because of its cross-curricular character 'by nature'. As a matter of fact, the teacher decided spontaneously to invite his fellow teacher in Economy to sit in at the students' oral presentations at the end of the project.

The teacher also indicated particular aspects he would like to improve on, in future, such as

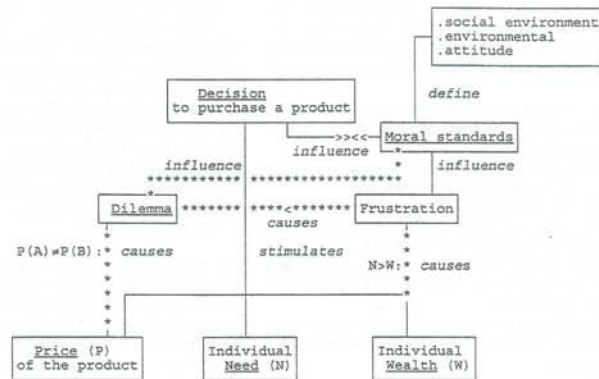
- reliability of the interviewees' responses to the respective questions. In retrospect, the teacher felt that he should have offered his students more guidelines on putting together a questionnaire which would prevent the interviewees to a larger extent from answering inconsistently to questions that were contentwise related,
- inter-connection between this particular project and the regular subject course. The teacher had severe doubts whether his students really did benefit from knowledge and skills from classes previous to the ones included in this project. At this stage, he was not very sure either whether he would be able to take advantage of the outcomes of this project in future classes.

In addition, we would like to conclude that projects like this one definitely show their value in getting teachers to cross over traditional borders between traditional school subjects and start to experiment with new subject content and teaching approaches at the same time. It is very important however, to propose them to teachers only in circumstances which include possibilities to continue giving teachers assistance to starting off a follow up process which implies the integration of the new elements into the regular subject curriculum, appropriately. If not, teachers' initial enthusiasm to participate in innovation project will rapidly diminish and even vanish completely, eventually.

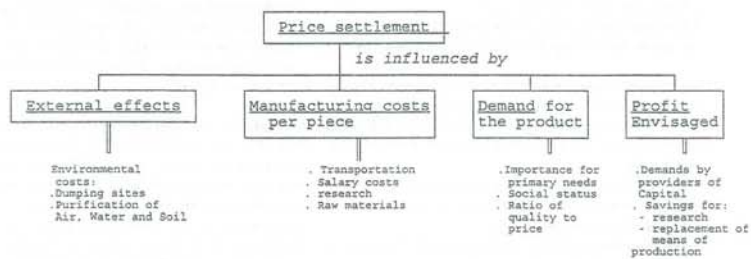
In conclusion.

As far as the general pedagogical model is concerned, the discussions among the curriculum experts on the one hand and the didactical researcher on the other hand eventually resulted into the one displayed in figure 2 'the final version of the pedagogical model'.

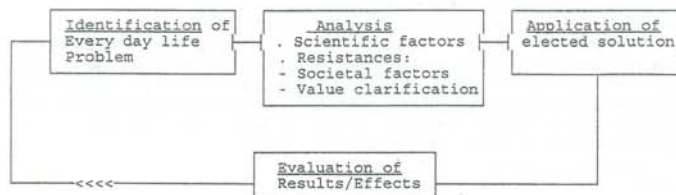
I: Factors influencing purchase decisions



II: Price



III Value Clarification and influencing environmental attitude



At the end of the pilot testing phase an international conference was held in February 1996 in the Netherlands. Some conclusion from the discussions were the following:

- usability of the "Krol model".

Most teachers felt that the model had been very helpful to them, both for making themselves an appropriate scientific analysis of the particular environmental problem which the students were supposed to study during the school project as well as for making final decisions on the design of the teaching scheme they were going to field test. They had severe doubts however, to what extent the model itself as well as the actual series of lessons really changed the students' initial ideas regarding the environmental issue they studied. As has been noticed in previous projects, bringing about changes in students' views concerning environmental matters into the ones that are more favorable from the point of view of sustainable development again proved to be rather troublesome. Also, many teachers had doubts whether they really succeeded to make their students understand the complexity from a scientific point of view of the environmental issue, under study. Restrictions in abilities to deal with these problems in an interdisciplinary way on the part of the teachers themselves, as well hindrances the school system gave them to actually team teach -and in doing so to accomplish a cross curricular approach- were mentioned as explanations for the teachers' feelings of uncertainty,

- international information exchange.

Unfortunately, the project failed to a large extent to really accomplish an on-going process of information exchange among teachers, let alone among students. A variety of both technical and financial constraints seemingly caused this failure,

- follow up.

A decision was made to submit a follow up project to the EU. This has resulted into the submission quite recently of a project "Individuals, Society and Environment, which in fact includes an extension of the project reported here, in two ways. Firstly, also personal life-styles and their impact on people's individual environmental decision making are going to be taken in account. Also, more countries will eventually participate in the follow up project. As a matter of fact, various national projects will constitute a basis for the international project. During the national projects teachers will gather experiential data during actual classroom teaching which in turn will constitute the basis for putting together an international teachers' guide for environmental education as the final product of the international project. To date, Austria, Portugal, Spain and Switzerland have actually joined the submission of this project to the European Union, which has been made initially by Germany (i.e. the University of Münster) and the Netherlands (i.e. the SLO in Enschede).

Lobster Red

lobster, you are so
odd.
swimming in retreat
to escape,
your shell is green.
yet red in a pot.

I admire your
macho territoriality,
with long antennae,
and humongous claws
wrapped in rubber bands,
you have expanded your
waters throughout our
great nation's
supermarket tanks.

The shock,
you are the only marine
being alive
in the aisles of fresh and
frozen,
but you continue to
prowl your new abode,
a ruler of cramped waters,
to defend
your niche.

I admire your
persistent spunk,
but is the
red of
anger? —
as your territory
grows
but homes
shrink
and shrink?

sept, 1995
maine
mare cromwell

EDUCATION FOR A GLOBAL PERSPECTIVE

Life beyond schooling

Tom Lyons, PO Box 572, Stn. A., Scarborough, Ontario,
Canada, M1K 5C4

Abstract

For the first time in human history, the entire globe may be affected, almost simultaneously by changes that are political, economic, social, cultural or environmental in nature. The pressing nature of global problems clearly demonstrates the need for a new approach to education that must be global in scope as we search for a common understanding of the concepts of interdependence, interrelatedness, commonality, biocentrism and systems thinking with a futures perspective.

Education for a Global Perspective

In Canada, the Public Participation Program of the Canadian International Development Agency (CIDA) has taken a leadership role in encouraging the education system to examine existing curriculum and to develop a global perspective in education when and where appropriate. Since 1987 eight provinces have initiated global education projects mainly within the framework of social studies. The Ontario Teachers' Federation has taken this a step further. Their focus is to encourage teachers to develop and integrate global concepts such as social justice, peace, human rights, development and environment in the teaching/learning process where appropriate, within existing curriculum in both elementary and secondary schools. They have called it Education for a Global Perspective (EGP).

In terms of a global perspective, we are looking at synthesis over analysis, connections and relationships rather than isolation and inclusive rather than exclusive. A global perspective implies the interdependence of all species on this planet and it behooves us to learn to walk in the shoes of others. It does not mean that we have to agree with what we see, but it does force us to understand where others 'come from' and how their view and actions are derived. I believe that EGP is an important component in the creation of a new cosmology and an essential ele-

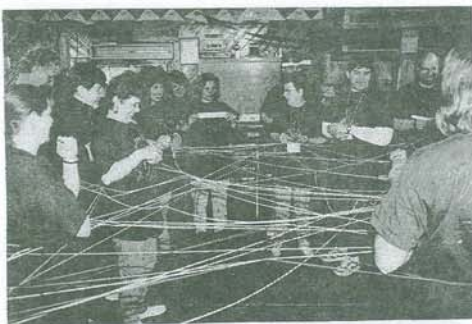
ment in helping us discover what it truly means to be human. In one sense EGP is a lens through which we view our world and act accordingly. It is also a lens that operates from a possible positive future's perspective that has a firm foundation in hope and human potential. While it is important to study history and analyze what we know of the past, we have the horrendous habit of dragging the obscurities of the past into the present and inflicting them on the future.

A framework for change

The past century has witnessed more concentrated changes in the human condition, than any other in human history. We have long thought that human ingenuity and technological prowess can solve all. Yet evidence suggests that when things go wrong with this planet, the change is often sudden and irreversible. What are the underlying human values that lead us to destroy that which we enjoy, that bring beauty and a sense of wonder to our lives? Do we really know who we are? Do we care? We humans as animals need a sense of place, a sense of personal place and a need to belong. The transformation of

the global economy provides little to address these needs. If anything the opposite occurs. It increases insecurities, forces families to move, places a monetary value on everything and the resulting unrest destabilizes neighbourhoods, regions and nations. Many individuals don't know what they can achieve,

when the major planetary institutional stakeholders are ineffective. All this can become overpowering and can lead to feelings of helplessness and inaction. This is not what a global perspective in education is about. On the contrary, education for a global perspective (EGP) is built on hope and a sense of joy as to what life is all about.



Teachers tying themselves in knots - looking for relationships

Schools can provide an opportunity for students to learn to love this planet as their "home" and to learn to appreciate all lifeforms and their role within the planetary system. All subject and contents areas furnish opportunities for learners to consider both that which inhibits and enriches the human experience. Schools can enable learners to face the earthly condition with both joy and caution and to make the necessary decisions and wise choices to maximize the human within.

The new Common Curriculum in Ontario is a bold step in this direction. Consider the following three essential outcomes (of 10):

1. demonstrate an understanding of the world as a set of related systems
2. apply the skills needed to work and get along with other people
3. participate as responsible citizens in the life of the local, national, and global communities.

This vision for education may well include the creation of a truly participatory democracy based on the skills of listening, critical thinking and communication, and open access to information. These are the fundamental underpinnings of education for a global perspective which is not some frill that makes the classroom routine interesting but instead should be the framework upon which everything else is based.

The question remains when kids are tested provincially at the end of grades 3, 6, 9, and 11, what will the teachers emphasize? Surely it's the test. How will teacher performance review be evaluated? Surely, it will be the test results. The fact remains that a school system with its vision in the rearview mirror will ill serve the needs for the 21st century. People look to the future from their past and so the past controls the future. Important as the past is, it only provides some clues to the future planetary needs. If the engine for change is fuelled solely by greed and competitiveness on a global planetary scale, what will be left?

In schools, students have a wonderful (and perhaps for many the only) opportunity to learn to love this planet as their home. Schools can play a positive role

in helping students examine planetary situations within traditional content areas and at the same time help to filter out that sense of powerlessness and apathy that seems so prevalent in adolescents.

*"From joy all things are born.
By joy they are all sustained.
And into joy they again return."
Taittiriya Upaneshad*

This is why Education for a Global Perspective needs to be a connecting strand of lifelong learning. It provides a sense of meaning and a new sense of joy.

EGP, the educational context

A global perspective in education is defined as an approach or framework to education which will help our children, adolescents

and adults gain the knowledge and develop the values, attitudes and skills to be effective participants in a world rapidly becoming more interdependent and interconnected. The Ontario Common Curriculum points out that the values at the heart of the curriculum "are based on a fundamental belief in the worth of all persons, a recognition of the interdependence of human beings and the environment, and a belief in the inherent value of all forms of life in nature". This document also emphasises that these values are not developed in isolation "but will form an integral part of student's learning as they explore various areas of knowledge and relate them to problems and issues of everyday life.

Global education challenges us to link knowledge and information in a way that makes sense to students. It asks us to use teachings of all the world's people and to be aware of the whole child that sits with us in the classroom, her ethno-cultural and religious background, her learning styles, her interests and her gender. Initiatives like global education can lead us to look differently at what we teach and to reach beyond traditional subjects and isolated skills.

EGP is an approach to education in which students, from the beginning of the educational process, learn to perceive and understand the world as a global system in which the participants recognize the



What EGP is all about

benefits, the costs, the rights and responsibilities inherent in such participation. It is an attempt to make education more relevant and beneficial to the students, teachers, parents and society at large through a process that is related to fundamental needs and planetary relationships.

Global perspective concepts include: self-esteem and responsibility, commonality in diversity, interdependence, change in human values and activities, biocentrism, systems thinking and futures perspective. The issues to be included when and where appropriate within the global framework include: sustainable future, world development, ecology and planetary survival, local and global environments, peace, conflict and security, quality of life, human rights and responsibilities and social justice. The introduction and infusing of the concepts and issues of Global Education will not be easy. As Illich has pointed out: "so persuasive is the power of the institutions we have created that they shape not only our preferences but actually our sense of possibilities".

The role of the teacher

The role of the school and the educator needs to be redefined. Social relevance and democratic ethics both require that the educator reaches beyond instruction to become both a guide for learners and an effective mediator between the young person and the world outside the classroom. Education becomes not merely a part of life but the main purpose with the learner as an active participant in the process.

A Global Teacher:

- is a facilitator;
- employs a range of teaching/learning strategies;
- believes in lifelong learning;
- is concerned with the development of the whole person and the significance of personal esteem and responsibility;
- promotes the discussion and understanding of issues from a global perspective within a framework of local, provincial and national relationships;
- has a future's perspective
- promotes an understanding of cultures within and beyond the local community;
- seeks to bridge the barriers between content and subject areas and promote cross-curricular activities;
- believes in sharing responsibilities for the learning process with children, colleagues, parents and the community.

Much has been written on the change process and the role of teachers but one truism remains: teachers will be effective global educators only if they believe in what they do.

Conclusion

The EGP framework transcends rigid subject boundaries and provides a number of cross-curricular themes that could be key links at all levels of the educational process. the cross fertilization of

concepts, perspectives and practices addresses a major concern of the Brundtland Commission which noted that "the fractionalized nature of modern education fails to provide an understanding of the holistic nature of modern development and ecological problems".

The image we have of the future will determine the future that will emerge. Life on Earth, in all its forms, is wonderful and possibly unique. We need to appreciate it, act accordingly and enjoy it. We have to develop and maintain a positive image of how the world should be and move towards it. The vision will not materialize merely by optimism and hope but will require creativity and action now on a personal, local, national and global level. Increasingly, educators, and learners must see life as a set of interrelationships between human kinds, other life-forms, and the planet itself. Co-operation, equity and harmony with the planet will be the keys to future survival. Just as competition and domination were the operative principals during the last century, a Global Consciousness is the key to the next.

One thing is certain. The "Global Village", if it is truly to exist, needs a Global Classroom and "Education for a Global Perspective" is an integral part of the process of change.

"Whether or not this particular species or planet Earth will be able to blossom into full knowing is an open question... We have been given every opportunity and facility. But we have also been given mastery of our destiny... we must prove that we have the wisdom to be the master of ourselves and thus use our creativity in ways that are beneficial to all..."
Peter Russell.

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Further information:

Educational Awareness
PO Box 572
Stn.A, Scarborough
Ontario, Canada
M1K 5C4
tel/fax: (+) 1 416-755-0592
email: egp@web.apc.org

Students' Comments

An oak tree tells me a story by Amalia Simonea

Source: *Context* 11.1995

I have heard on TV and radio about pollution, radiation and other things which are spoiling the earth. I didn't want to believe that in this world there is so much ignorance and that people are so blind, because they don't see that very soon the word EARTH won't exist in the dictionary anymore. Why? Because I didn't want to believe all these things, I decided to take a walk in a park and see if it is true or not.

The first thing that I saw was a big oak tree. It seemed to be very old and I could see a kind of sadness. Under the oak tree there was a bench. I sat down and soon I heard a kind of whisper and realised that the voice was coming from the oak tree.

"Hello!. Don't be afraid! I am the spirit of this oak tree. I am very, very old and know a lot of things about this world, but I am very sick because people don't take care of me. Last night I decided to tell the story of this earth to the first person who would sit on this bench. I will tell you the story.



Using all the senses (Source: *Context* 11-1995)

It happened a long time ago. Before man arrived on earth, nature had taken good care of itself. Man, however, started to transform what he found here. He started cultivating the land and raising sheep and cattle. For that he had to destroy forests. Then, at the beginning of the nineteenth century, the industrial revolution came and with it deterioration of the environment, together with a population explosion. People are still making the same mistakes as they did in the past, in the name of progress, production and profit. Hunting in some parts of the world leads to the extermination of animals such as elephants and buffaloes in Africa. It is illegal, but

hunters are difficult to catch in such vast areas. The largest animal that ever existed has nearly been exterminated just to give us margarine and dog-food. And it was not done in ignorance: everyone knew what was happening. It was just done for profit. It looks as if nobody cares! All governments of the world should realise that the earth is not the property of man alone. Polluters must be severely prosecuted. If there is no change in man's general attitude and in his actions, the future of the earth looks gloomy indeed. People must not think of the planet as a huge rubbish dump. Nuclear power may solve some of our energy problems. But on top of pollution there is the danger of radiation which produces cancer. I have seen a lot of people dying of cancer, just because their folks have not realised this danger. You will destroy yourselves because you can not see the warnings given by nature. Just look at me! What can you see? You can see a sick oak tree and you must be sure that I am not the only sick tree

on the earth. And why is that? Because you, people, can not take care of us. You can't understand that when you are taking care of us, and at the same time are taking care of yourselves too. Because nature can live without people, but people can't live without nature. This is the story I wanted to tell and now I would like to ask you to

go and tell everyone what I have just told you!!

I went home and I tried to think about nature, try to understand it, to feel the same feelings, to imagine nature like a person. Soon I understood how much reason the oak tree had. I understood that my mission was to tell everybody this story because this is not only a story. This is REALITY and this reality is here, but we can't see it or maybe we would be able to see it, but we just don't want to.

Amalia Simonea, Liceul Teoretic "Doamna Stanca", Satu Mare, Rumania.

Students' Comments

Our common interest by Andrej Danko

Source: Context.11.1995

Where is the pristine nature; the nature of clean rivers and oceans with plenty of fish, fresh air full of various kinds of birds, endless woods with uncountable deer, meadows rife with sheep and goats? The fact is that it is gone - for the next generations, maybe forever. It depends only on the human race; how well or badly will the people treat the already invaded and partly destroyed creation, and shall they be able to restore it into its original condition? Issues like peace, mutual understanding and human rights are in a very tight connection with the environment and its current problems. They will always have a lot in common, they cannot be isolated and treated as single consequences. Without these issues the environment can not be protected, there would be no force that could manage to face these problems.

Without peace there would be no world-connected actions that would protect nature and help the most endangered places in the world.

Peace is one of the most important and closely connected topics regarding the environment. Without peace there would be no world-connected actions that would protect nature and help the most endangered places in the world. Since the basis of all environmental projects is peace, nothing could be done for the surroundings in war-time. People can make agreements, create the foundation or organizations to protect nature, and take various other actions while there is peace in the world. When there is no peace, nobody cares about the environment.

Take, for example, the Second World War. Some parts of the world were totally destroyed and the results of the war can still be seen even today. The contrivance of the atomic bomb had, has, and most likely will have detrimental results on the environment, resulting at last in the destruction of our Earth. Even today, during years when agreements about the abolishment of atomic weapons are signed, France is doing atomic experiments at Mururoa Atoll threatening the inhabitants of French Polynesia. The chairman of the European Commission and France say that the try outs are safe and nothing can happen. However, they have to be conscious of their

actions and cannot disavow anything that could happen if they will not be successful. Countries like New Zealand, Australia and Japan protested against these new tests, but France "has no interest" in listening to them. This is an example of the second issue - mutual understanding.

Why would anybody stop doing something that is profitable but has harmful effects on the environment?

An other example of the peace-environment connection can be the international organization Greenpeace. Already in its name is the word "peace". They fight for environment's peace. Unfortunately, the greed and malice that is rooted in many human characters - in other words, the "money ailment" - often do not allow Greenpeace to achieve their intentions. Why would anybody stop doing something that is profitable but has harmful effects on the environment? Only for one reason that is very uncommon in this type of situation - "mutual understanding".

The issue of human rights in connection with the environment is very important from the point of view of you as an individual. You have the right to live (that is also the first amendment in the United States' constitution), and nobody can take it away. Moreover, you have the right to live in a area that should be conducive to your health. Therefore, when somebody pollutes the air, water, or anything else that could be injurious to your health, he/she is actually violating your right to live. Therefore, we the people must rise against any such infringement of our rights. It is not easy to do something to stop it, but an active try is better than a passive sitting. However, in the area of vehicles, aircraft, spaceships and other inventions the pollution of the environment rises quickly, and therefore, we must search for such sources of fuels which are not as dirty as coal and gasoline.

There is only one nature, therefore we should keep her clean. When we destroy her, we will not be able to create a new one. We are able to create a lot of things, but we cannot create a cell that is, I believe, the base of nature and the archetype of architecture. But that is a different story...

Andrej Danko, Gymnazium Vazovova, Bratislava, Slovakia

Environmental Briefs

Contributions of Aspea

Fatima Matos Almeida

(director/networking CEI)

Source: Context. 11.1995

Portuguese Association for Environmental Education Aspea

The development of Environmental education both in formal and non-formal education is the main aim of ASPEA, a non-profit NGO founded in 1990. To accomplish this task, a variety of strategies has been undertaken by the members of the board and other associates, all of them working on a volunteer basis. These strategies include:

- a 3-day annual conference for teachers and other experts in environmental education
- seminars and in-service training courses
- cooperation with local authorities
- school links and international cooperation/networking
- development of pedagogical resources
- field trips and summer programs
- papers for magazines and presentations at national and international conferences
- a quarterly newsletter

One can clearly understand that these activities presume high motivation and involvement of ASPEA on the one hand; on the other hand the recognition of our organization leads, in turn, to an even bigger demand of effort. Since its beginning ASPEA has been connected to an international network. Caretakers of the Environment International. The participation in CEI conferences since 1987 and the international contact provided ever since, have allowed ASPEA both to update information on E.E. programs, projects and research and to establish national and international links with schools and institutions.

The major links of Aspea are:

since 1990:
Portuguese delegation of Caretakers of the Environment International
since 1992:
National Coordinator of GREEN-Global River Environmental Education Network (USA)
since 1993:
Operator of "Young Reporters for the Environment", FEEE
since 1993:
Board of the Portuguese Network of Environmental Education

Networking in Environmental Education

Network in Environmental Education is an association of people involved in projects sharing common Aims, Practises or Geographical areas. Networking works as a way of accelerating or facilitating the practise of Environmental Education and may be also considered as a strategy for educational innovation.

A Network can:

- offer updated knowledge, expertise, issues, materials and contacts that may accelerate the beginning or the for-going of a project, both in pedagogical and scientific terms.
- facilitate the exchange of data, enriching the experience by adding comparison and diversity.
- allow the project to gain a supraregional or international dimension.
- facilitate global understanding and the exchange of students of different countries.
- improve personal characteristics through co-operative activities and experience in group work.
- enhance the meeting of people with similar motivations, giving them personal support.

On this basis, ASPEA has been developing a lot of work by linking schools and projects within the country and at international level.

In our country there are many schools willing to meet partner schools and programs. However it has been difficult for us to provide them with the needed and expected means (purchase of computers and equipment for e-mail, mailing, working sessions or expenses within exchange of teachers and students). Very little support is given to NGOs like us which somehow plays the part of those educational structures which should implement EE in our schools. We believe that linking schools and co-operation at national and international level are important.

Large international networks are already thinking of creating regional (European) delegations in order to enhance a better understanding of common European features, problems, needs and aspirations in EE. This is the case of CEI and of GREEN. Enhancing contacts, providing models and working on a common ground are valuable means for action taking on behalf of the Environment.

ASPEA

Apartado 4021
1501 Lisboa, Codex, Portugal
fax 351.1.3011.774

Environmental Briefs

How safe is your school? An invitation.....

International School Peace gardens (ISPG) invites young people to "dedicate, maintain and nurture a peace garden as a symbol of hope for the future and as a symbol of the school's commitment to peace - peace within ourselves and our school community, peace within the global family and peace with nature."

International School Peace Gardens is the initiative of the International Holistic Tourism Education Centre (IHTEC), a registered program with the Canadian Committee set up for the UN50 Celebrations. ISPG is an educational program using Peace Parks and Gardens to nurture global peace through education, with a network of international links.

The ISPG program can be used to support existing curricula in cross-cultural appreciation, conflict resolution studies, environmental studies, the arts and Heritage studies. Peace gardens can also be used to support anti-violence and anti-racist curricula.

How do you become involved?

Plan a suitable site for your Peace Garden, Peace Grove, or Peace Tree.

Plant your oval Peace Grove of 12 trees, symbolic of our hope for the future. Use trees that support local species and consider local ecosystems, as a living legacy to World Peace and a healthy environment.

Celebrate with a suitable ceremony for the dedication of your Peace Garden, Peace Grove or Peace Tree.

Develop and implement a school millennium project for completion by the year 2000. Create a dream bench in your grave to help decisions.

Become 'ambassadors for peace' and environmental heroes.

Register your participation by returning a registration form. Share your historical celebration through a dedication form.

For more information and registration forms:

International School Peace Gardens
Julia Morton-Marr
3343 Masthead Crescent Mississauga,
Ontario, Canada
L5L 1G9
Tel/fax (905) 820-5067
VOICE-TEL: (416) 391-6030
e-mail: jmarr@utcc.utoronto.ca

Working actively through NGO's Ricardo Aguilar

Source: Context 11.1995

In order to achieve its aims, the Bern Convention requires the active support of institutions, governments and, above all, citizens.

Public support.

Citizens can help achieve these goals in many different ways. Joining an association is perhaps the simplest and most common of all, although situations vary from one European country to another. The active support of any association entails two main responsibilities: a contribution towards financing its activities and the offer of support in its public demands and messages.

Campaign success depends on the joint effort of thousands of citizens. Here are some suggestions:
- support campaigns (sign petitions, write letters of protest or support, etc.)
- help with office tasks.
- work on projects aimed at protecting and reintroducing nature.
- learn about nature conservation by undertaking environmental, biological, chemical and geological studies, etc.
- participate in public activities, such as protest walks, etc.
- consume less, consume better; reduce, reuse, recycle.
- classify your household waste (paper, glass, metal, etc.) for recycling and support similar initiatives
- share your professional knowledge with NGO's (on science, law, economics, etc.)

Access to information

For a society to function correctly, access to information is a basic requirement. Knowledge about our environment and who is destroying it, is the major prerequisite for action by citizens. The Directive on Freedom of Access to Information on the Environment is a major step forward in social development, and for getting ready to face the ecological challenges of the future. A basic priority of citizens should be to demand that this directive is effectively implemented in all countries of the European Union, and that similar mechanisms are put into place in other countries.

The main task of NGO's is to increase public awareness and foster positive change so as to ensure that society's everyday life contributes to environmental conservation. In short, citizens need to perceive nature as part of them, thus making us all responsible.

R. Aguilar, Biodiversity Campaign Director
Greenpeace-Spain, Rodriguez San Pedro,
58 E-28015, Madrid

Environmental Briefs

Technologies for a positive future

source: Kil, S. (1994), *Planetary Education: Creating a System of Hope*, E.E.Publications, Canada.

"Technology itself is not the issue. It is the kinds of technologies - the tools and processes we humans have evolved through the years that are of concern. Each problem we try to solve with yet another technology seems to create more problems, a chain reaction, a new web of complexities".

Our technologies have allowed us to connect with the earth and the universe, with others and ourselves in very profound ways. In doing so we have proved that we are not separate from the elements and energy and processes of all other forms of life.

Computerized learning teaches children to conform to a pre-determined model - they process data, follow programmed learning instructions, read

Children who are valued for their creativity, their spontaneity, their questions, their initiative, their one-of-a-kind perspective are more likely to grow into adults who care about the world around them.

animated stories and play games with little room for imagination and spontaneity, write and illustrate with standardized letters and graphics, engage in simulations with predictable outcomes, create music without soul. It gives the illusion that they are learning to synthesize information and think critically. In reality, they become alienated from their creative thought process, which is connected to the dynamics of life through our multi-dimensional sensory system.

Investing time, energy, and resources in computerized learning distracts us from the real learning that needs to be done and effective ways to learn.

Creative learning 'technologies' (tools and processes), such as pencil-and-paper writing and drawing, reading books, manipulating materials, imaging, thinking, role-playing, sensitizing to the natural world, dialogue, free play, ... allow for multi-dimensional learning and thoughtful, caring responses to personal and planetary needs.

Children who are valued for their creativity, their spontaneity, their questions, their initiative, their one-of-a-kind perspective are more likely to grow into adults who care about the world around them. Children who are valued as products of the system, lab animals for the high-tech experiment, pawns for the profit of big business, can become cynical, unhealthy people who perpetuate the abuse - they know no alternatives.

It's time to put telemedia and computer technologies in their place. To use them only if/when necessary. To tune in to the needs of our children and our planet. To create an educational system that has a healthy, creative, sustainable future. And to get on with the real work that needs to be done."

OH GHANAIAAN,...

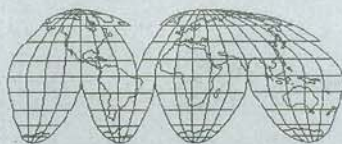
Oh Ghanaian, how can I trust you!
You claim I am the most beautiful
Of all my colleagues including you
Because of my distinctive colouration
You anxiously seek
To catch a glimpse of me
Because of my characteristic beard
You rejoice to have me
In your portion of the globe
Because you say, I am endangered
You claim to accord me
Protective status worldwide
And want me to reproduce more of my kind
Yet I do not feel safe in my own habitat.

Some of you visit me and say we love you
Others visit threatening my dear life
Many of you visit "chop bars" and ask
Is the soup made of Boapea meat
You go to the meat seller and ask
Do you have Boapea meat?
How can you claim you love me
When at the same time
You want to enjoy my meat?

... how can I trust you!

by Stephen Asamoah, GWS Secretariat, Accra
Source: N.K.O. the Parrots, magazine of the wildlife club of Ghana. P.O.Box 13252, Accra, Ghana

Globe



Scope

Workshop on Joint Forestry Management for Sustainable Development, October 4-6, 1996, Shimla (Himalayas), India.

The Indian Environmental Society in association with the American Forests is organizing a Workshop on Joint Forestry Management for Sustainable Development. The workshop program will include one day of invited papers, two days of working group discussions and two days of field visits. The Society is the partner organization of Global Relief, American Forests in India, which aims to promote protection of Forests resources.

The workshop will review the concept of Joint Forestry management and the role of the community in the protection of Forest Resources. The workshop will also review the relationships of Forest practices to Ecological processes, Socio-economic considerations in Forest Management, the planning and monitoring procedures and the relationships of forest practices to Policy and Science.

Further information:

Dr. Deshu Bandhu (president)
Indian Environmental Society
U-112, (3rd floor) Vidhata House,
Vikas Marg, Shakarpur, Delhi - 110 092
Tel: (91-11) 222 3311 or (91-11) 245 0749
Fax: (91-11) 33-7301

Implementation of Environmental Education in the Community

Conference on Environmental Education in Europe
CEEE '96, 22-27 October 1996, Harnosand, Sweden
Organized by Mid Sweden University

The CEEE '96 is the fifth conference in a series that started in 1988 in Rome. This conference was followed by conferences in Scotland in 1990, in the Netherlands in 1992 and in Latvia in 1994. Sweden is the host nation for CEEE '96. We will welcome people from all parts of Europe - from the East, the West, the South and the North to come and share their experiences in implementing environmental education in different parts of the community.

After the Rio Conference it was the intention that every country would start work on Agenda 21 in

order to create a sustainable society. The work is to be carried out at a local level and involve all the people and sectors in the community. According to Agenda 21, 1996 is the year in which we will look both backwards and forwards to see how far we have come.

This is the second announcement of the conference. So far the conference has received a great response. We already know that almost every part of Europe will be represented. More than 50 contributions to plenary lectures or seminars from more than 20 countries have been announced but there are still opportunities for more.

Further information:

Conference secretary: Ms Barbro Bernlid
KIC, Mid Sweden University
S-871 88 Harnosand, Sweden
Tel: (+)46 611 86138
Fax: (+)46 611 86010
e-mail: Barbro.Bernlid@forv.mh.se
Internet: <http://omega.mh.se/~wwwtnv/tnv/konferans/>

Using Communication to Make Environmentally Sustainable Development Happen
An International Workshop, November 1-2, 1996
San Francisco Bay Area, California

This workshop which is held as part of the NAAEE's annual conference, will bring together people from around the world who fund, lead, design, and implement programs that use education and communication to achieve environmentally sustainable development. It will focus on approaches that have worked in the public and private sectors.

Further information:

NAAEE
PO Box 400, Troy, OH 45373 USA
Fax: (513) 676 2514
e-mail: jthoreen@igc.apc.org
or contact the International Workshop facilitators:
GreenCOM
1255 23rd St. NW
Washington, DC 20037 USA
Fax: (202) 884 8997
e-mail: greencom@aed.org

