

## EDUCATION, THE ENVIRONMENT AND SUSTAINABLE DEVELOPMENT

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Ever since the world began it has been in a constant state of change.

Ever since humans learned to wield a stone axe their ability to add to the process of change has increased.

Science and technology have accelerated and deepened change over the last three centuries.

These changes have created many benefits but are now causing considerable concern amongst some people.

### INTRODUCTION

#### The Problems of Change

Some people know about these concerns; some people suffer from these concerns. However, wherever we live and whatever we do, we all make decisions in our daily lives that have an impact on the environment and that help to create environmental concerns, due to our increasingly interdependent world at local, national and international levels. Therefore resolutions to environmental concerns have to be both mandated and implemented by people as a whole - it is not something that environmental organisations can impose on a disinterested or disempowered world.

However, the way we live is determined by a complex array of forces. These restrict our ability to make the changes that could remedy environmental problems. For example, people with no security, with limited rights and access to education and who live in abject poverty, are limited in their lifestyle options. This makes it difficult, if not impossible, for them to take part in the careful use of the environment. In some cases, lives are already so disastrous that long-term environmental concerns seem irrelevant.

Conversely, lifestyles based on an economy that is fuelled by material gain and competitive consumption make unsustainable demands on the environment. Lifestyles that have benefitted from such economies are often so comfortable that any proposed changes to rectify environmental mismanagement are often perceived as threatening and unacceptable.

If we are to resolve environmental concerns, we must address the needs, concerns and fears of those

who suffer from environmental degradation, and of those who see their comfort or authority being threatened or undermined by changes to environmental management.

This process cannot be left to chance. Too much is at stake to let fate take its course and intervention is necessary. We also need to ensure that this intervention is directed by insight and understanding.

This is not only of environmental importance but also of educational significance. One of the prime functions of education is to prepare people for the opportunities, responsibilities and experiences of their lives. Some of the most telling responsibilities relate to the way people use or influence the use of the environment.

In some places the need for this is glaringly apparent. On a day-to-day basis, many people in many parts of the world spend their whole lives directly managing and using the environment. They seek out, collect or catch their food, they collect their fuel and water, they build their homes.

In other circumstances, this environmental interaction and impact is less obvious. People work in offices and factories or in the home and, even though their immediate environment is significant to their health and happiness, and they can help to make it pleasant or not, their impact on the environment in general is often far less obvious. It is difficult to link the exhaust fumes from our cars to a rise in sea level caused by global warming; difficult to link the impact of the

timber our company uses to rainfall patterns due to forest depletion; difficult to link loss of species diversity in tropical grasslands to the food we buy in the supermarket; difficult to link the water we use commercially and personally to lowland wetland decline or the flooding of upland valleys; difficult to link the cost cutting exercises on pollution control to the demise of fish stock and fishing industries around the coast.

Often people who live and work close to the environment do receive, usually informally, an education that prepares them for their own local land management roles. However, due to new knowledge, new pressures and new problems, this is often not sufficient.

The education of those whose lives are insulated from the natural environment often has little or no relevance to their own environmental roles and responsibilities. Therefore education, if it is to take its social responsibility fully, must include in its function the potential for upgrading the quality of environmental decision making throughout society.

This is not only a practical need, but can also be seen as part of the individual's civil rights and would seem to be a prime function of education in any society, whatever the situation.

### **Participating in Change**

All of us are tied to ways of living by traditions and social conventions that have evolved over centuries. These are promoted by our families, schooling, the faiths we cling to, our jobs, the books we read, the stories our parents tell us, newspapers, TV, radio, arts and entertainment.

In varying degrees, these are the things that 'educate' us throughout our lives. These are the things that make us the people we are and which determine the way we view and use the environment.

The level of education also determines the way in which individuals understand the complex and dynamic forces that determine the structure and the quality of the environments in which they live and work and those of the wider world. This in turn determines the level to which individuals understand their own role in this process and therefore their ability to contribute effectively to the resolution of environmental concerns, whether these be local or global, personal or galactic.

Therefore, if education is to fulfil its complete social role and if there is to be any realistic chance for current environmental concerns to be resolved, it must upgrade the quality of environmental awareness, understanding, insight and skill throughout society. These formal education structures must prepare people for their role as environmental decision-makers.

### **THE OVERALL AIMS OF ENVIRONMENTAL EDUCATION PROGRAMMES**

**To ensure that everybody receives an environmental component to their education that is central to the overall education entitlement that they receive throughout their lives**

An entitlement of experience which will enable individuals to understand, analyse and respond to the various environmental situations and issues that they meet within their day-to-day living.

An entitlement that empowers individuals to have a well-informed and therefore confident and effective voice in the decisions that will determine the structure and quality of the places where they live and work;

An entitlement that provides new or revived skills that enable the individual to benefit from these decisions;

In total, an entitlement that enables participation through understanding and insight and that encourages committed participation through personal relevance and personal benefit.

**To develop a social context of conventional acceptance and legitimacy for careful and sustainable environmental management**

### **THE OVERALL OBJECTIVE:**

**To encourage and enable all elements of public education to develop the means and the will to deliver elements of environmental education that are appropriate to their audiences and their methods**

Such education will need to embrace a range of features. It will seek to develop an awareness of environmental issues at local, national, and international levels. It will need to equip people with the knowledge, insight and skills necessary to analyse the issues; to understand why people view and use the environment in particular ways; to

identify the root causes of current problems; to make decisions and take actions that will achieve effective solutions.

Environmental education will need to consider all aspects of natural and human-made environments; the ecological; political; economic; technical; social; legislative; cultural; spiritual and aesthetic.

Environmental education will need to give people specific professional and occupational insight and skills that enable careful and harmonious use of the environment. Together these components will enable people to play their part in resolving environmental problems wherever they live and whatever their livelihood.

## ENVIRONMENTAL EDUCATION IN THE SCHOOL CURRICULUM

An educational entitlement that empowers people to participate should not prescribe or manipulate the outcome of that educational process. It should give people the insights and understanding that enable them to make up their own minds about the way they and others do or should relate to and utilise the environment.

In each case, the individual's relationship with the environment is unique. It is for this reason that environmental education should not seek to dictate specific routes to concern and commitment. Instead, it presents paths to understanding the relationship between people and their environment in a way which not only recognises, but celebrates, the diversity of human experience. It aims to open up routes which individuals can follow for themselves with help and encouragement. In this way, we hope that the road to understanding becomes, in each case, the road to self discovery, personal insight and, potentially, to commitment. Any practical elements should be clearly linked to personal relevance, significance and benefit.

Each subject area of the school curriculum focuses on, and explores, different aspects of human understanding and experience. Each subject can be mobilised to help young people develop their own coherent insight into human behaviour and the effect of this on people and the environment. It should not require any new slots in the curriculum - merely a re-orientation of what is already common practice. Thus environmental education could be simply described as good education because it gives relevance to many different areas of the curriculum

by providing a context to much of what is learnt. It gives breadth and balance by drawing on different views of our environment and encouraging pupils to explore their own ideas and values as well as being aware of, and tolerant to, the views of others.

However, environmental education is more than a sum of the parts. The challenge is to develop each subject of the curriculum so that it can play a part in a child's environmental education, but also to encourage schools to develop policies for 'delivering' coherent, co-ordinated and progressive programmes of environmental education to all their students.

## The role of the subject areas

### The Sciences

The role of science, particularly the biological sciences, in environmental education is virtually self-evident. The variety of life, form and functions of living things, the carbon and water cycles, food chains and webs, are all central to environmental education. Fundamental to environmental education is an understanding of their importance to lives and livelihoods of people on a day-to-day level and the impact of human activity on these support systems. This can be related locally to health issues as well as food and water supplies and more 'globally' to the importance of maintaining bio-diversity for biotechnology, manufacturing and medicine. The environmental perspective provide an immediate relevance and contemporary importance to these essential parts of the science syllabus.

Obviously there are also strong and important chemical components to environmental education. The chemical structure of the biosphere and the impact of chemical interference generated by human activity is central to understanding of environmental problems. Obtaining and using chemicals such as pesticides, fertilizers, waste from industry and agriculture, all contribute to local and regional environmental pollution and contribute to global concerns such as ozone depletion, greenhouse effect and acid rain. Physics, plus design technology, can extend environmental education into areas that relate to the priorities and purpose of the use of scientific knowledge in its appropriateness to and impact on different environmental and social contexts. For example,

energy generation and its efficient use, and the variety of sources, wind, wave power, nuclear and fossil fuels, are all central to the modern environmental debate and to many very direct and pressing local concerns.

In all the sciences mathematical skills are utilised and, just as maths skills can help the scientist to analyze and evaluate, the environment can provide relevant and important areas of study for the development of mathematical skills. These could include the collection and analysis and presentation of numerical data, to help determine trends that could relate to crop yields, population and consumption levels, or to the rate of loss of various environmental resources or habitats. It could relate to the development and use of indices to assess quality of life or used to design and analyse questionnaires with the computer providing the ideal tool for the collection, ordering and analysis of such complex data. More practically, it would relate to the local and powerful issues of the economics of wildlife utilisation or marketing local products, crops or timber.

#### Arts and Environmental Understanding

It is easy to assume that the sciences would be at the heart of environmental education. Yet environmental issues relate to much more than scientific 'fact' and numerical data.

We often cannot effectively explain, in scientific or factual terms, all the feelings that we have about the environment in which we live and work. However, the 'arts', whether music, writing or the graphic arts, are our means of realising and expressing subjective emotive reactions. An external stimulus engenders an intangible feeling which becomes a problem to be solved by its conversion into some expressive medium.

This process of stimulus, response and conversion into some art form, requires a combination of observation, identification, gathering information and reflection. As well as developing a deeper personal environmental awareness and an enhancement of the powers of critical observation, this conversion into a concrete form helps to clarify and consolidate our feelings about situations and issues. It also develops an enriched personal appreciation of our sensory and emotional relationship with our environment and develop our personal 'comment' on its quality. This may be in

pleasure or in anger.

This personal relationship with the environment, and an awareness of the effect of environmental stimuli on the senses, can be the most persuasive reason for people becoming involved in action to improve (or not deplete) the quality of the environment.

It is impossible for anyone to appreciate fully the precise feelings and mental processes of another, particularly if the life experiences, environmental, social and cultural situations concerned are very different. However, an empathy with the feelings of the people affected by environmental issues is vital if any insightful judgement is to be made on environmental issues. Through drama and role play, however, it is possible to explore and vicariously experience the feelings that might be engendered by a particular solution. It is also possible, through drama, to explore the very complex sets of values and vested interests that motivate the views and behaviour of people involved in the issues.

#### Religious Education

An important element in developing an understanding of the forces that determine human behaviour in different environmental contexts is an understanding of the wide diversity of beliefs and values that people hold.

These determine the way people perceive the world they live in and the relationships that they have with people and the environment. There is obviously a complex interplay of articulated beliefs and social pressures that determine human behaviour, and investigating the disparity (or congruence) between beliefs, values and behaviour helps to identify the external forces that determine human behaviour. This is central to understanding why many people express environmental concern yet live lives which are potentially environmentally damaging. Understanding why people behave in particular ways also help in the development of a tolerance to viewpoints other than our own and in the formulation and clarification of our own views.

The environmental movement too often prescribed the roles that people ought to adopt in relationship to the environment. This has often been recommended with no reflection on the various religious doctrines that are the basis for the espoused beliefs, attitudes and values of many people around the world. Exploring these doctrines

and their often very positive and careful concern for the environment can provide a very powerful motivation for accepting personal concern for the environment, both for those who are believers as well as those who are not.

### History

Understanding that environmental problems are not necessarily a manifestation of some contemporary malaise or even the fault of certain specified groups in society is also important. A historical perspective that explores the various forces that have had, over time, impact on current problems is therefore a vital facet of environmental education.

Such an understanding provides greater insights into the root causes of environmental problems and gives a much better chance of defining effective solutions to current problems.

Looking back at the course of history, we can also see that people 'create' history and that individuals and random incidents have together caused change, for better or worse. This, together with understanding and the will to become involved, play an important part in re-defining the future.

### Geography

Geography is an obvious natural home for environmental education - landform, weather, climate, vegetation and soils and their utilisation by humans are fundamental to both Geography and environmental education. Even such 'theoretical' concepts such as contours can have an important and very practical relevance if linked to such important issues as contour ploughing and contour dams and retention schemes.

Understanding the impact of geographical location and environment on human activity and vice versa is also central. However, the inclusion of elements that explore the various political, economic, cultural and social forces that determine this action around the world is also fundamental to much good modern environmental geography.

For example, the ever-changing relationships within and between nations is central to understanding many environmental problems - for example, political and economic problems in South America are central to understanding the motivations for tropical rainforest destruction, in Africa conflict contributes to much human hardship and environmental mismanagement and, in the UK,

inner city decay and the motivation for redevelopment is not unrelated to economic and political perceptions.

### Languages

At a very basic level, literacy is often the key to empowering people to take part in local decision-making. It is reasonable therefore to identify the development of literacy skills as central to educational entitlement. Exploring other peoples' response to the environment can enrich our own awareness of the relationships we have with the environment. It can also encourage tolerance of our concern for other people's views. The use of 'foreign' languages material is of particular interest as it brings an extra global dimension to the issues and can either demonstrate different perceptions or commonality of concerns.

### Curriculum Management

Producing cross-curricular materials is one thing, finding ways in which these can be delivered so that they provide a coherent and comprehensive environmental education is another.

Techniques for whole school policy development and, most importantly, curriculum management are crucial as are methods of evaluation that enable teachers to assess the impact of cross-curricular education on their students.

The environment of learning is also an area of our interest, as is a clear understanding of how the quality of the environment of learning, the classroom, the playgrounds and the whole school campus impact on the quality of the learning process. Strategies for improving the design and content of the whole school environment in light of that insight is an important aspect of the whole school policy and management.

### Understanding and insight

- \* The environment is maintained in a state of dynamic equilibrium by the interaction of a range of natural forces and naturally occurring elements.
- \* Human life and livelihoods are totally dependent on these forces and elements.
- \* The development and maintenance of the 'made' environment of agriculture, industry and urbanisation, has an impact on natural systems

that support life and livelihoods. It also has an impact on the 'quality' of life and peoples that inhabit these environments.

- \* Currently in many parts of the world human activity is causing major problems to the 'natural' and made environment on a global scale.
- \* Human activity is determined by natural forces and by socially generated forces such as beliefs, values, politics, economics, increase in knowledge and technological developments.
- \* Interacting forces currently and over time determine human activity in the environment - personally, locally, nationally and globally.

#### Intellectual skills

- \* An ability to perceive that various media can carry a variety of messages and information about environmental issues.
- \* An ability to extract or collect information about the environment from a variety of media and from practical activity.
- \* An ability to analyse, interpret and evaluate information and evidence from a variety of sources.
- \* An ability to define questions for investigation and to organise information and evidence related to these questions.
- \* An ability to apply reasoning skills to environmental problems, construct sound arguments based on a wide range of evidence, and to participate in discussion and debate.
- \* An ability to identify the causes and consequences of particular environmental problems in differing situations and the implications of taking or not taking various actions.
- \* An ability to explore and express a personal response to environmental issues or situations through a variety of oral, written or artistic media.
- \* An ability to develop a personal stance to environmental issues based on evidence, debate and personal values and also to perceive, understand and articulate the interest, beliefs

and views of others.

- \* An ability to take part practically in action relevant to an individual's own personal life as a consumer and a producer that improves the quality of the environment and of human life through careful and sustainable environmental management.

#### Attitudes and values

- \* A willingness to adopt and demonstrate a critical stance to information.
- \* A willingness to give reasons for particular views or acts relating to the environment.
- \* A respect and understanding of other people's reasoning for particular acts or views.
- \* A respect for evidence on forming and holding views about human/environment interaction.
- \* Willingness to change attitudes and values in the light of evidence and experience.
- \* Value fairness to choose between particular environmental actions.
- \* Toleration of a diversity of ideas, beliefs, values and interests.
- \* Value the opportunity for a personal interest in, and response to, environmental issues.

#### Commitment

A crucial aspect of environmental education is that it relates not only to knowledge and insight but also to the development of commitment for action.

People are practically involved with the environment in a variety of ways. However, they are also 'emotionally' involved and personally concerned about environmental issues from a wide variety of standpoints. Some will approach the issue from a political standpoint - "this mode of operation and its consequences do not suit my own political ideology", others will come from a religious standpoint - "my belief states that we should not treat the environment and people in this way", some from a moral standpoint - "I do not believe that this is a just or fair way to treat the environment", some from a scientific standpoint - "treating the environment in this way does not make scientific sense" or "from an aesthetic

standpoint I find the end result of these actions unacceptable". For some the commitment will be a product of simple dire necessity or ill health or insecurity.

Not only does the exploration of all these different responses to environmental issues help people to understand the full range of human/environmental interactions but it also offers people a variety of routes to environmental concern that suits their personality and their lifestyles.

Programmes of environmental education should therefore be multi-faceted and not assume one route to either insight or action.

#### Practical skills

The culmination of environmental education relates to the development of skills that enable people to use the environment wisely in their everyday lives. These are as varied as there are ways of life, and therefore skills relating to better environmental use and management should be built into all aspects of pre- and in-service training for all professions and occupations, in particular those whose lives and livelihoods impinge most directly on the specific concerns of the organisation.