

Published on Teachers of India (http://teachersofindia.org)

Home > Environmental Education—A Discipline?

## **Environmental Education—A Discipline?**

By SMAMasoom Masoom | Jul 23, 2012

What is environmental education? Is it another subject or paper or discipline? Another question, which you may like to ask here is 'What is the need for this?' In this paper as we move further we will try to engage in some thought on these questions as well as different issues encircling this.

World peace and harmony is not possible without environmental education. Why I am saying this is because the human race is a product of the interaction between man and his environment, which can be broadly categorized into 'natural' environment and 'socio-cultural' or 'man-made' environment. This interaction, however, has not been very smooth in the past and even today it has given rise to 'environmental problems'. Now, we must give some thought to the question of what are environmental problems.

Environmental problems are those instances in which people's behaviour affects their physical environment in such a way so as to place their own health, other people's health, the built environment or natural systems in jeopardy. This is the case, for example, when pollution occurs, when natural resources are exhausted and when natural features are damaged. Environmental problems are physical as well as social problems. There are lots of issues all over the world such as issues of construction of dams, deforestation, large amount of chemical wastage, uncontrolled use of fossil fuel, use of natural resources as if today is the last day of the world without giving even a single thought for the future generation or days to come. This leads to tonnes of problems for all of us. So an understanding of the environment and related issues therefore becomes the need of the hour since it is so intrinsically linked to human beings. An understanding of the environment also depends upon the context of social norms and values. The main objectives of incorporating environmental education into the school curricula can therefore be identified as the following:

- To make children aware of the nature of the relationship between humanity and the environment on which it depends
- To impart knowledge and skills to understand and solve environment and development related issues
- To enable children to acquire the attitudes and motivations leading to sound discussions and civic actions for the improvement and protection of the environment and its quality

Now let us think about the entire human race in the world and its daily routine work. You get a picture of fishing boats and fishermen, of cowherds and milk processing plants, of paddy fields and rubber estates, of village blacksmiths and steel mills, of handlooms and nuclear reactors and so on. How and where do these people live? People live in tiny hamlets, in villages; in towns and in cities. Some build their homes with bamboo and mud, others with cement and steel. Some cook with small twigs on a three stone hearth or with coconut husks on a mud stove, some with electricity and gas in modern kitchens. Naturally the demand of all these activities — whether it has to do with livelihood or shelter or simply living - is great on the natural resources. As for example, a farmer wants the mountain valley to grow paddy, power corporations want to construct hydroelectric dams and their demands are not limited to one country or one area. This is a picture of a more common kind of interaction that man has with the environment.

To begin with, let us know and understand the meaning of the term 'Environment' particularly in the human context. The living and non-living things around us, including man-made things constitute the human environment.

There are two main aspects of our environment. First, the natural environment which includes plants, animals, earth, sky, sun, trees, air, water, weather, seasons, climate, and so on. And the second one, the social environment which includes, home and family, traditions, customs, conditions of living, occupations and everything that is developed by human beings. These components of environment interact with each other. Hence, the human environment should be regarded as the product of interaction between man and the natural and social environments. In all interactions man is the key figure. The widely accepted definition of human environment is the aggregate of conditions that surround and affect the life of a person at any point of time on earth.

## What is environment?

Up to this point, we have referred specifically to our environment or the human environment. Now, what is the environment of an organism? It includes all the factors that affect the life of that organism. As you have seen above, the physical factors or non-living components of the environment include climate, water, nutrients, sunlight and soil. The biological or living factors include the surrounding organisms and their products, that is, their secretions, wastes and remains. You have just seen the different usages of the term 'environment' in the context of human beings and in relation to organisms.

You interact with different aspects of your environment. The place where you live, the job you do, the food you take, your social customs and culture, your folklores, social institutions and so on are all parts of your environment. You interact with these everyday and gain experience as a result of this interaction. The experience gained helps you to handle similar or different environmental conditions. Thus, living things especially human beings have been constantly interacting with their environment and in the process have also been changing some aspects of the environment. These interactions have been going on for a long time — since the birth of civilization! Due to these interactions of human beings with various aspects of the environment some changes have occurred. However, the functioning of the environment remained more or less balanced. Earlier, human beings continued to take from nature whatever they required for their day — to - day living. Their needs, however, were limited. The balance remained undisturbed mainly because of the following three reasons: less population, less interference, and lesser demands in comparison to available resources.

## Over the years: -

In earlier times the activities of human beings which could be damaging to the environment were limited to a few, such as, food gathering, making fire, collecting fuel for fire, using fallen tree branches or twigs, hunting and poaching animals — in all, their needs were few and simple. As human civilization advanced, the life of man became more complex. Agricultural societies, for example, had established substantial control over natural processes but were and still are subject to nature's

wrath in the form of droughts, floods, etc. So there was a sense of bonding between man and environment. Industrial society, however, rejects the view of man as part of a community of beings. It asserts that man is separate from nature with every right to exploit natural resources to further his own well-being. Advances in science and technology helped human beings to possess extensive powers to harness nature and to explore, understand and exploit various natural phenomena. For comfort, protection and prosperity as well as for enjoyment, human-beings experimented with newer resources and developed various kinds of new products. Hence, natural resources were exploited on a very large scale and over used. This has now resulted in the depletion of natural resources threatening the very survival of human beings. If you carefully look around, you will notice many examples of over exploitation of natural resources. Some of the actions of human beings have created permanent damage, which is irrepairable. You can actually observe some of these permanent damages in your own state, the region or area where you live. Some of these are:

- Indiscriminate cutting down of trees in the Himalayas has resulted in the destruction of forests and in the shortage of fuel and fodder. Rich and exciting varieties of species of plants and animals have died and are lost to us permanently. When a species of plant or animal is permanently lost we say that the species is extinct. Many Himalayan species are extinct today. That means they will never be seen on the earth again. Deforestation and over hunting endanger wildlife. If proper conservative measures are not taken, several species will disappear completely. For example, the pink-hued duck has not been sighted in India since the mid 1930's. The mountain quail is also extinct. Leopards and snow leopards are killed indiscriminately for want of their skins. As a result less than 500 of these have been left in the Himalayas.
- When the forest cover is gone, heavy rain washes away the rich top soil and this causes soil erosion. You
  must have seen or heard of heavy soil erosion in many areas of the country.
- The rich top soil gets washed down the river and gets deposited in the river bed which results in floods.
- The delicate balance of the Himalayan range is disturbed.

The balance of nature is very delicate which might be tampered only to a limited extent but not beyond that. It is high time we realise that the environment should not be disturbed/exploited beyond a limit. The balance in nature is a delicate one and even a slight disturbance is enough to cause a disturbance in the whole set up. There are many examples like tsunami, unseasonal floods, snow in the desert of Bikaner (Rajasthan) and so on which are directly or indirectly linked to the disturbances caused by the human race to the environment. The above mentioned concerns have been central to the area of study called environmental education. But what exactly is environmental education?

### Environmental Education: -

Environmental education is the systematic study of the natural and man-made world. It has emerged as a major discipline in recent years, reflecting our growing concern about the impact of human activity on the natural word. The environment may be conceptualised as being composed of a number of interconnected processes and phenomena. These include the formation of rocks, the climate systems, the cycling of biologically important elements, and the interaction between organisms and their surroundings. The question that arises here is, is it a discipline or a composite of many disciplines? Or could it be the medium for the teaching-learning process of existing disciplines? The habitat is where any animal species finds conditions that permit it to thrive and learning is a vital faculty of all animal species. Animals learn about the features of their own habitat by picking up clues as to where they may expect to find food or meet social companions or encounter enemies. For our ancestors, knowledge began with the exploration of their habitat. But as human beings' control over the environment has increased, and as people have begun to mould the world more and more to suit their needs, this component of knowledge has diminished so much that today formal education has become largely alienated from the habitat of the students. But as environmental degradation proceeds at an unprecedented pace, we are beginning to realise the importance of taking good care of our habitat. Humankind must, therefore, make an attempt to comprehend its roots, to re-establish links with its habitat, and to understand and take good care of it. In substance and spirit, the theme of 'Habitat and Learning' is equivalent to environmental education. These significant concerns are best realised by infusing the components of environmental education as part of different disciplines while ensuring that adequate time is earmarked for pertinent activities. This approach can be meaningfully employed in the treatment of content in Physics, Mathematics, Chemistry, Biology, Geography, History, Political Science, Health and Physical Education, Art, Music etc.

In part, environmental education involves the identification, measurement and classification of these processes and phenomena. Importantly, it also encompasses our attempts to rationalise their existence and to predict how they will alter in the future.

Environmental education is of importance not only because it informs us about the world in which we live but also because it enables us to address more effectively many of the pressing issues that confront the modern world. For this reason, environmental education is increasingly seen as a vital tool in establishing the ground rules by which the environment could be more effectively managed in the future. Environmental education has the task of addressing an extremely wide ranging and bewildering array of content. This is a dynamic, ever changing content, characterized by highly complex interrelationships, priority problems, causes, impacts and solutions. The knowledge base of environmental education is made all the more difficult to comprehend because the human race often simply cannot understand environmental issues or their potential resolutions in any definitive or permanent way. It is a highly value laden content, and one person's solution may be another's catastrophe. It is a content that incorporates aesthetic, spiritual, social, political and economic dimensions alongside (not separate from) the purely scientific dimension. Furthermore, it is a content that does not and should not focus solely on environmental disasters and negative issues. Environmental education is not simply about 'saving the whale' or indeed 'saving the world'. It is equally about the development of an appreciation of the wonders and beauty of the world and of a sense of wanting to save it. In short, it is about the development of an environmental ethic.

That is why education about the environment, through the environment and for environmental protection will make an individual realize his/her responsibility towards the total environment. Environmental protection has been included as one of the ten common core components of the curriculum for all stages of school education in India under the National Policy on Education - 1986 (Revised 1992). This policy says that; "There is a permanent need to create a consciousness of the environment. It must permeate all ages and all sections of society, beginning with the child. Environmental consciousness should inform teaching in schools and colleges. This aspect will be integrated in the entire educational process." It talks about values as well as all those who are related to the environment or interact with it in any particular way. It will serve the purpose not only of having knowledge about the environment but also the purpose of the development of positive attitude and love towards the environment.

# Need for Environmental Education: -

Why is there a need for teaching environmental education at the primary school level? Given the pattern of interaction between man and environment it is desirable that people behave in an environmentally responsible way. An actual change in this regard may therefore require a degree of change in understanding as well as in attitudes. Education is one of the ways in which moral values and positions are developed in society. Education in environmental issues in schools would help to create an educated citizenry capable of making the decisions that will decide the future of the next generation.

- Education about the environment has the purpose of developing knowledge and understanding about
  values and attitudes.
- Education for the environment encourages children to explore their environment, so as to form an idea
  about their relationship with the environment and environmental issues. This is linked to the development
  of attitudes, values and responsible behaviour necessary for sustainable and caring use of the
  environment.
- Education in or through the environment involves the use of environment as a resource for learning. This
  helps in the development of knowledge and understanding along with skills of investigation and
  communication.

Environmental education is education through, about and for the environment. Its scope is therefore very wide. It begins from using environment as a medium of learning, and includes all that Kalidasa, Wordsworth and others have said in appreciation of nature. It also includes all that scientists and scholars have disclosed about our physical and social environment. Finally it includes all that we say and do for conserving our resources and for beautifying our surroundings including urban and country planning. Thus, it will be seen that even before the formation of the National Association on Environmental Education in the U.K. in 1972 and the enactment of the law on environmental protection and conservation in 1972 in the U.S.A., some sort of environmental education was being carried out by poets, naturalists, ornithologists, town and country planners, etc. The emphasis has, however, recently been shifted from individuals and specific groups to nations and also to international bodies such as UNESCO and International Union for the Conservation of Nature and National Resources (IUCN) in the hope that it may help people to know what hazardous environmental pollution, population explosion and resource depletion could be.

The Basic Education started by Mahatma Gandhi can be regarded as one of the fundamental steps taken in the history of modern education in India. It relates education to the life needs and aspirations of people. Two precepts of Basic Education, which are relevant to environmental education are:

- Correlating the curriculum with the productive activities and with the social and physical environment of the child
- Intimate contact between the school and the community

These principles of Basic Education were also incorporated in the Report of the Education Commission (1964-66). Some of the elements of environmental education are reflected in the recommendations of the Education Commission. It recommended that at the primary level, the focus of education should be on the social, physical and biological environment of the child. A child in these years should be introduced to "plants and animals in the surrounding, air he breaths, water he drinks.." . Hence it was recommended that teaching and learning at the primary stage should be environment-oriented, child-centered and activity based. The Education Commission also recommended that the teaching of Science at the primary level should concentrate on the development of proper understanding of facts, concepts, principles and processes related to physical and biological environment. As a follow-up of these recommendations, the National Policy on Education was enunciated in 1968 and the NCERT (National Council of Educational Research and Training) prepared a curriculum framework entitled "Curriculum for the Ten Year School — A Framework" in 1975. Environmental education was included as one of the curricular areas in this framework. As we can see in India many of the commissions and policies advocated the need for environmental education for all the sections of society. They also advocated that environmental education should be a part of primary education so that it can inculcate positive values and attitudes in the early phase of life of a child. Research also supports this, by asking the question of when should environmental education begin; in the third grade, first grade, or in kindergarten. It says that environmental education based on life experiences should begin during the very early years of life. Such experiences play a critical role in shaping lifelong attitudes, values, and patterns of behavior towards natural environments (Tilbury, 1994; Wilson, 1994).

Environmental education is both an area of learning and as well as an approach to learning. It is an approach through which a child is actively involved in the process of learning. In this process he/she systematically explores his/her surroundings. As the child explores and learns about different aspects of his/her environment he/she also develops certain mental skills. These skills are skills of observation, recognition, recording, data collection, data interpretation, generalizing, concluding and drawing inferences. Thus the child could develop a scientific temper and may behave like a mini scientist. These mental processes of information gathering, processing and use are not limited only to the scientific aspect of the environment. The same processes are used for exploration of all other components of the environment including occupation, agricultural products, social institutions, transport, market and many more components of the social environment.

If you help the child to develop the above mentioned mental processes it will make the child aware of the environmental resources and their problems. Once a child is aware of environmental problems and has skills for analysing these problems, the child can also understand the close relationship between man and the environment. Consequently, his/her problem solving and decision making abilities are also developed. So then, what should be the thrust of environmental education at the primary level?

## Environmental Education at primary level: -

Environmental education at the primary level should have the following salient features:

- It should basically have a child-centred approach involving interaction by children. The activities should be interesting, relevant, based on daily life experiences of the child
- The age, mental level, aptitude, interest and abilities of the child should be the main criteria for selecting the
  activities
- It should enhance the natural curiosity of the child
- It should help the child in developing attitudes and qualities such as self-confidence, spirit of inquiry, initiative
  and courage to ask questions
- It should encourage the child to think of solutions to problems in his/her day- to-day life
- It should develop the desired skills in children
- It should help a child to develop logical thinking
- It should help a child to take active interest and participate in solving some simple problems in a limited way
- It should help a child in developing open mindedness and perservance
- It should enable the child to adopt an environment friendly lifestyle

Environmental education is one of the most necessary parts of the education system now days. It talks about everything in totality, all disciplines, all sections of society and it also advocates education for the environment and from the environment.

So at this point of this paper it might be fair to say that you got the answer to some of the questions but not all the questions which arise in your mind. Are you thinking about the 'how' part of environmental education now? Now, I will try to elaborate on the 'how' part of it.

#### The how and now: -

A variety of teaching methodologies may be used for effectively integrating environmental dimensions into the existing curricular system with minimal demands. No matter what the situation, the teaching-learning experience can be enhanced by teachers. The challenge is to use imagination and innovation in selecting from the many activities and approaches that can motivate students and take them from awareness to action. For example, using games, demonstrations, performing arts, classroom displays, arts and craft, creative writing, exhibitions, creative expression etc. Activities constructed for life situations become a meaningful means for the engagement of learners. Rainfall, for instance, exhibits intricate variations over space and time. Data on such variations is available and can be used to promote many interesting activities in Physics and Mathematics.

In Physics, simple experiments may be devised to visualise patterns of flow of fluids over uneven terrain, as well as to demonstrate how the ascent of air leads to cooling and precipitation and descent to the opposite effects. In Mathematics, a careful analysis of data for a longer period, say 50 years, on decline in rainfall provides excellent possibilities for projects related to data representation, visualization and interpretation. Likewise effluents from sewage treatment plants can form meaningful raw material for a variety of projects in chemistry. Besides, schools could work with panchayats, municipalities and city corporations to document biodiversity resources and associated knowledge. Schools can take up projects in Biology addressing specific issues of interest, such as the occurrence and utilization of medicinal plants or the protection of rare and endangered fish in a body of water. People's representations of the environment and its specifics (animals, forests, rivers, plants etc.) through various forms of art, music, dance and craft illustrate their understanding of biodiversity.

Such an understanding is also linked to the life of members of Scheduled Caste and Scheduled Tribe communities as they often depend on natural biodiversity resources to sustain their livelihoods. Recording such knowledge is part of the mandate of preparing people's biodiversity registers, and students can fruitfully be engaged in projects on the preparation of such registers. Projects assessing the nutritional role of wild plants, which provide important nutritional supplements in the diets of tribal communities, can be worthwhile components of health education. Likewise preparation of maps of the immediate environment, documentation of environmental history, and analysis of political issues related to the environment may be made part of projects in Geography, History and Political Science. Conflicts over water at the local, state, national and international levels offer a rich source for designing a variety of activities and projects connecting these descriptions of knowledge.

Yearly requirements spelt out for each class in hierarchical progression would allow more respect for children's pace of learning. Schemes such as the Minimum Levels of Learning (MLL) reinforced not only the rigid adherence to year-end outcomes, but also allowed for these to be further narrowed to lessons. Describing the characteristics and concerns of the curriculum, pedagogy and assessment in stages allow for better organization of syllabi, textbooks and learning resources. It will also help teachers to plan for children's development as well as the gradual and cumulative deepening of abilities, competencies and concepts.

For the primary grades, the natural and social environment should be explained as integral parts of languages and mathematics. Children should be engaged in activities to understand the environment through illustrations from the physical, biological, social, and cultural spheres. The language used should be gender sensitive. Teaching methods should be participative and discussion-oriented.

For Classes III to V, the subject Environment Studies (EVS) is introduced. In the study of the natural environment, emphasis should be on its preservation and the urgency of saving it from degradation. Children should also begin to be sensitized to social issues like poverty, child labour, illiteracy, caste and class inequalities in rural and urban areas. The content should reflect the day-to-day experiences of children and their worlds. Below is a table showing how we can link a topic with the environment: -

WATER AND THE ENVIRONMENT	
Where does water come from?	NATURAL SOURCES OF WATER
How are seas, oceans and rivers formed?	Rivers, lakes, seas, underground water
What are our local water resources?	WATER RESOURCE MAPPING Local/regional/national
Why do wells dry up?	RELATIONSHIP BETWEEN NATURAL AND MAN-MADE SOURCES OF WATER
How do hand pumps work?	Understanding the water table, Hand pump system of irrigation, Environmental impact of
Are big dams more beneficial than small dams?	big dams
	WATER IN DIFFERENT ECOSYSTEMS
How do people in desert areas procure water?	Water sources in desert areas
	Water sources in mountainous regions
Water causes droughts?	Droughts and floods
SOCIAL ASPECTS OF WATER	
	CASTE AND CLASS

Purity and pollution, control over water resources

Who controls the village well?

GENDER DIVISION OF LABOUR AND AVAILABILITY OF WATER

Under the property of the politic street of the politic stree

### Can we use the child's environment as a tool for learning about the environment?

Children orient themselves in this world. Continuously they try to accommodate themselves among the many living and non-living things, forces and powers, mishaps and successes, natural phenomena and unexpected events, illness and joy and grief. They are surrounded by multitudes, and they want to make sense of it all by figuring out relationships and explanations. They adjust themselves and their behaviour accordingly. They try to conquer their world by understanding it in all its multiplicity and complexity.

The environment is the children's own: they live in it, they play in it, they belong to it, they are familiar with it and they learn in it. This familiarity may give the false impression that they know all about it. They do not, of course, and they have to be prodded to learn more from it, and more about it.

You will not find 'ready lessons', simply because it would be impossible for an outsider to make these up. Every school's environment is different from all others' and therefore unique. Explore your school environment, which you share with your children, and make your own activity plans according to the possibilities and opportunities offered by this environment. Help the children to approach their environment with a new scientific look so they learn to view it as a whole, in all its complexity.

Amidst numerous, growing and complex environmental problems the need for the preparation of world problem solvers is as great as ever (Wisconsin DPI, 1994). Environmental educators have globally accepted this role of preparing students to become critical thinkers, informed decision makers and able communicators – a role that exceeds far beyond presenting information. Environmental education helps learners achieve environmental literacy, which has attitude and behavior components in addition to a knowledge component. Thus, the goal of environmental education is to instill in learners knowledge about the environment, positive attitudes towards the environment, competency in citizen action skills, and a sense of empowerment (Athman & Monroe).

Now we can make a connection that environmental education will decide the future of the earth and we need to heavily push this aspect in the education system. Only providing knowledge about the environment or about environmental education will not serve the purpose. We have to follow 'education for environment and from the environment' policy to make the future generation knowledgeable, appreciative and loving towards the environment.

# Reference/ Bibliography: -

- 1) Elstgeest, Jos. Children and Their Environment. Arvindguptatoys.com, accessed January 11, 2011. http://www.arvindguptatoys.com/arvindgupta/unenvironment.pd 2) NCERT. Habitat & Learning - position paper(2005)
- Athman, Julie A. & Martha C. Monroe. Elements of Effective Environmental Education Programs. School of Forest Resources and Conservation, University of Florida, PDF e-book. utpb.edu, accessed January 11, 2011. http://general.utpb.edu/FAC/keast\_d/Tunebooks/pdf/Athman%20and%20Monroe%20Article.pdf
- 4) IGNOU Teaching of Environmental Studies. ES-203, ignou.ac.in, accessed January 11, 2011. http://vedyadhara.ignou.ac.in/wiki/index.php/DPE:Diploma\_in\_Primary\_Education/ES-203:Teaching\_of\_Environmental\_Studies
- 5) NPE-1986
- 6) NCF-2005
- 7) PPT BY CEE( Centre for Environment Education)
- 8) Palmer, Joy A. Environmental Education in the 21<sup>st</sup> Century: Theory, Practice and Promise. London: Routledge, 1998. books.google.com PDF e-book, accessed on January 12, 2011. <a href="http://books.google.co.in/books?id=1bSnPRP-Yg8C&printsec=frontcover&dq=Environmental+ Education&hl=en&ei=-639TM-OFJDkrAea9JjGCA&sa=X&oi=book\_result&ct=result&resnum="https://doi.org/10.1007/journmental-10.1007/journmen
- $\underline{1\&ved=0CDgQ6AEwAA\#v=onepage\&q=environmental\%20education\&f=false}$
- 9) De, Anil Kumar and Arnab Kumar De. Environmental Education. New Delhi: New Age International, 2004. books.google.com PDF e-book, accessed on January 12, 2011. <a href="http://books.google.co.in/books?">http://books.google.co.in/books?</a>
  <a href="http://books.google.co.in/books?">id=brHqEiHV0VQC&printsec=frontcover&dg=Environmental+Education&hl=en&ei=a9v9TM3ml4KmcOeNvbQG&sa=X&oi=book\_result&ct=result&resnum=2&ved=0CDgQ6AEwAQ#v=onepage&g&f=false</a>
- 10) Trivedi, P.R. Environmental Education. New Delhi: APH, 2008. books.google.com PDF e-book, accessed on January 12, 2011. http://books.google.co.in/books?id=i5VaiisAMGYC&printsec=frontcover&dq=environmental+ed\_ucation&client=firefox-a&cd=3#v=onepage&q&f=false

Category: Teacher Development Subject: Environmental Science Board: All boards Grade/Standard: Class 3-5 Class 6-8

Class 6-8 **License:** CC BY-NC-SA

Source URL: http://teachersofindia.org/en/article/environmental-education%E2%80%94-discipline