

Creating an Environment to Educate about the Environment

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THE NEW PARADIGM of education, embodying the spirit of science, of democracy, and of care for the environment, emphasises a number of key elements such as learning rather than teaching, building capacity for critical thinking and problem solving along with locale-specificity in the context of a global education (NCF 2005). In the march of science, anybody is welcome to challenge any assertion, whether it be of facts supposedly observed, or of models of how the system works. Along with rejection of all authority, science has also given up claims arriving at any absolute Truth. Science deals in knowledge that is always treated as provisional, that is, open to being supplanted by newer and more effective observations and theories. This open, democratic and participatory exercise of science has proved tremendously effective in rapidly increasing our knowledge of the natural world. Science should, therefore, be learnt as a dynamic experience rather than as a mechanical accumulation of facts.

The roots of the present status of EE (Environmental Education) in formal

education can be traced back to the Report of the Education Commission (1964-66) (Kothari Commission). This report also incorporated the best that basic education had to offer so as to relate it to the life, needs and aspirations of the students. The curriculum of general education for the upper primary and secondary stages, developed following the directives and guidelines provided in the National Curriculum Framework (NCF), has been quite wide-ranging on all aspects of the environment although EE was not perceived as a separate subject.

Educationists question, the utility of adding an additional subject to an already packed curriculum. The focus according to most environment experts is on the theoretical aspects of the natural life cycle rather than acquisition of practical skills and advice on how to regenerate human and natural environments. As far as the environmental textbooks brought out by various state governments are concerned it is a moot point whether their content will be utilitarian or useful because implementation of every environmental policy programme, project and plan comes down to the same common denominator—environmental education (EE). Effective, timely and targeted EE lies at the core of operationalising these paradigms, especially at the local level. There has been a changing vocabulary in local environment management - from 'simple' concepts such as community participation, to expanded issues such as capacity building, informed consent, public choice, decision-making, awareness building, governance,

decentralisation, local autonomy, information disclosure etc.

Despite widespread water scarcity, deforestation, chaotic cities, pollution and global warming having transformed into everyday realities, environment education in schools and colleges across the country is limited in its content and reach. The sudden information overload on environment conservation has left most well-intentioned school managements perplexed and confused. Though most urban schools have jumped on the green bandwagon, introducing environment education as an academic subject or an extra-curricular activity there is widespread dispute about its contours and content. It cannot be taught in isolation as a 'science' subject. Unfortunately awareness of environment as a holistic discipline is lacking in most curriculums. Environment education has become just another subject to be rote-learned for marks and results.

EE, therefore, is about understanding the causes and effects, of positive and negative aspects, of global and local issues, of immediate and long-term issues, and of direct and indirect impacts. Environment education should not be added as another subject to the already overburdened curriculum. Instead environment awareness should emerge from the subjects under study by infusion, not addition. For instance, in history one could talk about Emperor Akbar's environment policies and its impact on subsequent rulers. Most educationists and school principals are also averse to environment education

being added as a compulsory subject to curriculums. They prefer to introduce it as an extra-curricular activity, supervised by committed teachers and students resulting in the greening of all subjects.

Now consider the following facts

1. The threat to agricultural biodiversity comes mainly from the market advantage to be gained by switching over to modern agriculture and the High Response Varieties.
2. Brahmaputra carries one of the highest sediment loads in the world, about 332 million metric tonnes annually throughout its course due to soil erosion.
3. 50,000 species are becoming extinct each year. The fish supply in our oceans is being critically depleted by widespread uncaring practices. Many of the large fish species (marlin, cod, tuna) are depleted by as much as 80 per cent.
4. Toxic waste, routinely dumped at sites in the ocean, is creating "dead zones" where no life exists in the water from top to bottom for hundreds of kilometres.
5. The remaining rain forest along the Amazon is being cut down at the rate of 1500 sq. kilometers a year. Its importance in oxygen production, atmospheric cooling, and species habitat must be acknowledged and acted upon before it is gone.

6. Developing countries are still in the process of evolving appropriate solutions to handle their environmental problems.
7. Climate change is not just an environmental issue, as too many people still believe. It is an all-encompassing threat and it is a threat to health, since a warmer world is one in which infectious diseases such as malaria and yellow fever will spread further and faster, could imperil the world's food supply, as rising temperatures and prolonged drought render fertile areas unfit for grazing or crops. It could endanger the very ground on which nearly half the world's population lives – coastal cities, which face inundation from sea levels rising as a result of melting icecaps and glaciers. These are plausible scenarios, based on clear and rigorous scientific modelling. A few diehard skeptics continue to deny global warming is taking place and try to sow doubt. They should be seen for what they are: out of step, out of arguments and out of time. In fact, the scientific consensus is becoming not only more complete, but also more alarming. Many scientists long known for their caution are now saying that global warming trends are perilously close to a point of no return. Now, this is not science fiction. The good news is that there is much we can do in response. We have started using fossil fuels more cleanly and efficiently. Renewable energy is increasingly available at

competitive prices. With more research and development – current levels are woefully, dangerously low – we could be much farther along. India is in the grip of a multifaceted crises extenuated by the poor quality of governance and its inability to grapple with the challenges of population explosion, poverty and deprivation, social exclusion, rapid urbanisation, and environmental degradation caused by the very forces of development. Therefore, the above-stated facts amply illustrate that it is essential that a fuller understanding of various issues in the area of EE and particularly those that have bearings on school education and practice are explained and carried out. Thus, there is an urgent need to have a simplified overview of EE, objectives and principles of EE alongwith an understanding of the core issues of EE. This paper attempts to meet this need.

EE Framework

A useful framework for environmental education programmes and projects is the triple foci of education, research and practice. *Education* helps in building awareness among the target audience; primarily using knowledge and information as its resources. *Research* helps in assessment of the environment, using a number of problem issues as starting points. *Practice* helps in developing the appropriate action, using a number of *Skills and Expertise for the Purpose*.

EE Objectives

Participation- to provide individuals, groups and societies with opportunities to be actively involved in exercising their skills of environmental citizenship and be actively involved at all levels in working towards sustainable development.

Knowledge- to help individuals, groups and societies gain a variety of experiences in, and a basic understanding of, the knowledge and action competencies required for sustainable development

Values- to help individuals, groups and societies acquire feelings of concern for issues of sustainability as well as a set of values upon which they can make judgements about appropriate ways of acting individually and with others to promote sustainable development

Skills- to help individuals, groups and societies acquire the action competence or skills of environmental citizenship - in order to be able to identify and anticipate environmental problems and work with others to resolve, minimise and prevent them.

Awareness- to create an overall understanding of the impacts and effects of behaviours and lifestyles - on both the local and global environments, and on the short-term and long-term.

Principles of EE

1. EE should be a part of all education.
2. Environmental problems are interdisciplinary.
3. Direct experience in the natural

world is an essential part of EE. The way education happens is as important as its content.

Core Themes of EE

1. *Lifelong learning:* The potential for learning about sustainability throughout one's life exists both within formal and nonformal educational settings.
2. *Interdisciplinary approaches:* Education for sustainability provides a unique theme to integrate content and issues across disciplines and curricula.
3. *Systems thinking:* Learning about sustainability offers an opportunity to develop and exercise integrated systems approaches.
4. *Partnerships:* Partnerships forged between educational institutions and the broader community are key to advancing education for sustainability.
5. *Multicultural perspectives:* Achieving sustainability is dependent upon an understanding of diverse cultural perspectives and approaches to problem solving.
6. *Empowerment:* Lifelong learning, interdisciplinary approaches, systems thinking, partnerships, and multicultural perspectives empower individuals and institutions to contribute to sustainability.

Communities are increasingly bringing the old adage, "better safe than sorry," also known as the "precautionary

principle,” into practice. When there is reasonable concern that an activity or product raises threat to ecological or human health, the principle assertion is that precautionary measures should be taken, even without complete scientific data by employing the following diverse strategies to support environmental health:

- Identify and promote community actions and public policies to address key environmental health and justice issues in the most impacted communities.
 - Support and strengthen multi-ethnic, community-led coalitions.
- Provide grants, trainings, and technical assistance to help build the capacity of groups engaged in this work.
- Host educational events and briefings.
 - Partner with nonprofits, grassroots groups, business and civic leaders, public health agencies, local governments, and regulatory agencies to develop a coordinated vision and effective strategies for fostering an environmentally healthy surroundings.
 - Increase public awareness of and funding for environmental health and justice issues.

EE: Going Beyond the Blackboard

Despite steps undertaken to incorporate EE in formal education processes, there is still a clear need to ‘go beyond the black board’ to broaden and deepen the experience and involvement with the

environment. Some of the suggestions being made include:

- development of organisational frameworks for student mobility, including work-placement.
- structured exchange of students, teachers, trainers and administrators in various types of educational institutions.
- joint development of innovative curricula, teaching materials methods, and modules, including those that use new educational technologies.
- research internships at university, industry, laboratories, NGOs and community groups).
- intensive programmes such as workshops and training.
- other innovative approaches such as distance learning, computer-based education, etc.

Environmental action at the local level takes several different forms - such as those listed below. Each needs its own brand of EE. Think of what would be necessary for each action type?

Provide

Environmental activity essentially involves providing the necessary services, information, etc. in response to a demand or a need. It is primarily local in nature, in direct relation to the end user of the service. The activity comes at the end of the implementation cycle, but can also include provision of a policy framework, capacity building exercise, etc.

Control

Control involves the minimisation, curtailment or suppression of negative effects. Such negative effects can be at the local/individual level, for example affecting the health of a household, living/work conditions etc., or can be regional or transboundary in nature particularly in the case of pollution of air or water. Control of such negative activities takes the form of laws and legislation, enforcement of rules and regulations, education, public awareness etc. Implementation may also include citations, fines, court orders, etc.

Educate

A key common denominator that underpins all environmental action, education involves information dissemination and awareness-building, in order to bring about a change in attitudes and consumption patterns. It aims to influence overall resource utilisation. Education can be directed either at the individual/household or at the community/region as a whole. Education can be formal, university-based learning and training, but can also be non-formal on-the-job training, continuing education programmes, etc. It can be a continuous process, or a one-time process, providing quick summarised information or more comprehensive information.

Programme

Environmental programmes constitute an umbrella of broad approaches that

aim at preserving, implementing, educating, or controlling environmental effects, both negative and positive. Questions that needs to be asked include: what programmes are necessary? When should such programmes be implemented? Where and at what level should such programmes be developed (in terms of its formulation and implementation)? Who should implement the programmes, and who are the target beneficiaries? How should the programme be implemented?

Legislate

Certain environmental problems are best tackled through legislation - at the local, national and international levels. Legislative action can take various 'stick-and-carrot' forms, where positive action is rewarded and negative action is punished. Laws, rules, regulation, standards, acts etc. are common legislative forms of action. They may call for the setting up of institutions and regulatory bodies, procedures for action, fees, fines, taxes etc. to be paid. Legislation falls under, and is a part of, the broader umbrella of governance systems.

Finance

Most environmental activity, in one form or another, require financial resources to be allocated to operationalise a policy, programme or project. This may come from public funds, private investment, community contributions/donations, or other sources.

The Way Ahead for Environmental Education

EE is as complex and complicated as the term 'environment' itself. It cuts across many disciplines, sectors, realms, ecosystems and spheres. Because of this EE needs to be planned and implemented systematically for which some suggestions are given below:

Distill best practices and lessons: A large number of innovative practices and lessons already exist in the region. They need to be identified and replicated in other countries of the region.

Review and revise the existing curriculum: There is an urgency to review the existing curriculum in order to eliminate the dead woods and determine slots to incorporate environmental concerns.

Reorient the pedagogical approach: There is an urgency to reorient out existing teaching methods from 'chalk to talk' and lecture methods to problem-solving methods, from activity and issue-

based approach to field work and case studies, from 'didactic to advise-based approach, and from rote learning to attitudes and skills, development and learning through participation and educational training.

Encourage traditional non-media: Non-media (such as folklore, folk songs, story-telling, religious institutions, or traditional venue) should be involved to compliment the mass media to raise people's awareness about environment.

Synergise various efforts: Develop a synergy of formal education, media and NGO for promotional activities.

Establish resource centers: Resource centers need to be established to coordinate and support EE activities at various levels.

Develop national policies: Encourage and motivate national governments to prepare acts, policies and national strategies on EE.

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