

Environmental Education in School System - Overview and Challenges

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Introduction:

Since the 1972 Stockholm Conference, it has been realized that the responsibility of protection and conservation of the environment and educating people for it does not lie in governments alone. Everyone is a stakeholder to our planet Earth and hence individuals, citizens groups, institutions and the various governmental and non-governmental organisations have a direct role to play. Environmental Education (EE) is therefore, critical to any comprehensive environment management strategy and must be a continuing process in all areas of education - be it formal, informal or non-formal. It is therefore, all the more critical in school education and hence EE must be accorded a critical place in the school education system.

India is home to 17% of the world's total population in just 2.4% of the world's total area. It is also estimated that there are about 325 languages that are effectively used in India and thousands of other local dialects that change in India almost after every 8-10 Kms. Given such a challenging situation, the educational development in India has attained much - both in quantitative and qualitative terms.

Historically, Indian tradition has upheld the need for sustainable lifestyles. The Upanishads more than 2800 years ago spoke of the need for restraint in resource use in order to protect the interests of future generations. People in India, over the centuries have had a fascination and respect for their natural heritage. This has also been expressed in the Ishopanishad as: "All in this manifested world, consisting of moving and non-moving, are covered by the Lord. Use its resources with restraint. Do not grab the property of others - distant and yet to come."

India is one of the very few countries in the world where a commitment to environmental protection and improvement is enshrined in the constitution. The Constitution of India endorses the concept of sustainability in its concern for the conservation of environment and enjoins the state and citizens to protect biodiversity. Article 51-A (g) expects every citizen of India to "protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for living creatures." Such concerns have been further emphasized following the 1972 Stockholm Conference on Human Environment through numerous legislations, policies and programmes.

The presence and activism of the Supreme Court of India - the highest court of appeal in the land - as further strengthened India's commitment towards achieving a sustainable and green world. The provision for public interest litigation specially empowers citizens to fulfil their constitutional obligations to protect the environment.

This preliminary report/presentation is by no means comprehensive or exhaustive. It is in fact a blend of the author's experience of working with both the formal and non-formal education systems and the review of numerous books, articles and reports got from various sources and institutions - both government and non-government.

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A Historical Perspective

The movement of Basic Education launched by Mahatma Gandhi in 1937, was perhaps the first serious attempt at relating education in schools to local environmental needs. The essential elements of the Basic Education movement being:

1. productive activity in education;
2. correlation of the curriculum with productive activity and the social environment; and
3. intimate contact between the school and the local community.

The best of the issues raised in the Basic Education were incorporated in the Report of the Education Commission (1964-66) so as to relate it to the life, needs and aspirations of the nation. In 1967, the Study Groups constituted by the National Council for Education, Research and Training (NCERT) incorporated critical environmentally-relevant components in the experimental editions of biology textbooks and teachers guides for the middle and secondary levels.

The need for Environment Education was further underlined after the documents "Curriculum for the Ten-Year School: An Approach Paper (1975)" and "Curriculum for the Ten-Year School: A Framework". According to these documents, environment education needed to cut across the entire school education curriculum through relevant subject disciplines. The NCERT then in 1974-77 developed syllabi, textbooks and other instructional materials and many states in India have over the years incorporated this environmental orientation in their efforts.

The National Policy on Education, 1986 states, "There is paramount 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"

The National Curriculum Framework for school, 2000 too recognizes the importance of EE and addresses issues, including minimum levels of learning, the use of information and communication technology, and the management and accountability of the system.

Judicial activism for the cause of the environment, especially for environment education is very significant. The Supreme Court of India in response to a public interest litigation in November 22, 1991 passed an Order directing that amongst others:

"We accept on principle that through the medium of education awareness of the environment and its problems related to pollution should be taught as a compulsory subject. Learned Attorney General pointed to us that the Central Government is associated with education at the higher levels and the university Grants Commission can monitor only the under graduate and post graduate studies. The rest of it, according to him, is a state subject. He has agreed that University Grants Commission will take appropriate steps immediately to give effect to what we have said, i.e., requiring the Universities to prescribe a course on environment. They would consider the feasibility of making this a compulsory subject at every level in college education. So far as education up to the college level is concerned, we would require every State Government and every education Board concerned with education up to the matriculation of stage even intermediate college to immediately take steps to enforce compulsory education on environment in a graded way. This should be so done that in the next academic year there would be compliance of this requirement."

Overview of Educational System in India

There are about 888 thousands educational institutions in the country with an enrolment of about 179 millions. Elementary Education System in India is the second largest in the World with 149.4 millions children of 6-14 years enrolled and 2.9 million teachers. This is about 82% of the children in the age group.

In 1976, a Constitutional Amendment (42nd) brought education on to the Concurrent List otherwise it was always a State subject. Since then education in India is the joint responsibility of the government at the Centre and the States with each having their own role and responsibility. The Central Government however, maintains an overall responsibility regarding the quality and character of education. On the other hand, decisions with regard to the organization and structure of education are largely the responsibility of the states. While the department of Education in the Ministry of Human Resource Development (MHRD) shares with the states, the task of educational planning, school education in India is basically under the direct control of the respective states.

The constitutional amendment in 1993 on Panchayat Raj (local bodies) prescribes for the decentralization of planning and administration of school and teacher education and this is now being implemented in a number of states in the country. Another constitutional amendment initiated in 2001 now makes primary education a fundamental right to all children in India.

This amendment further empowered the National Policy on Education (1986) which had advocated for free and compulsory education up to all children up to the age of 14 years. A significant trend in the school education system is also the move away from simple enrolment to retention and achievement. This therefore, not only provides admission to children but also ensures their progress and continued education.

Environmental Education in India

The National Policy of Education visualizes a national curricular framework, which contains a common core including several elements having direct bearing on the natural and social environment of the pupils. These core areas are expected to occupy a place of prominence not only in instructional materials but also in classroom and out-of school activities.

Environment Education is education that is intimately connected with the environment. EE being education not merely through the typical books, lectures or talk and chalk method but education through direct exposure to the environment, it is hands-on learning, exploring and problem solving. Issues about how environmental education is being implemented in the country remains to be debated but nevertheless, the efforts and achievement of India in propagating environment education in all stages and sectors of education cannot be ignored. Both government and non government players have either jointly or in their own way continue to contribute to the growth and give direction to environment education in India.

On the governmental side, the Ministry of Environment and Forests (MoEF) and the Ministry of Human Resource Development (MHRD) of the Government of India, has made major contributions to environmental education at various levels. While the MHRD works towards greening of the formal curriculum, the MoEF focuses on non-formal educational programmes and strategies to reach the larger community that includes children, youth, urban and rural communities, industry, decision makers etc. many of the programmes and schemes of the government are implemented with the active participation and support of NGOs.

In addition to the efforts of the government a large number of voluntary organizations are also involved in promoting

EE in both formal institutions and non-formal settings.

The main sources of the educational institutions and NGOs for EE activities are the government (Central and States), independent trust, donor agencies, etc.

Integrating EE into curriculum: The Big Questions

"Should there be a separate discipline called 'environment' or should environmental concerns be infused in the curriculum through other subjects?"

"Should 'environment' be taught as an alternative to the basic disciplines or be taught through them or be taught as an additional subject?"

With growing awareness and continued pressure from various sectors, including the judiciary environment education is not only being adopted as an out-of-class extra-curricular activity but a growing number of schools have begun to introduced it as a compulsory academic subject. Some state level education boards like in the state of Maharashtra have made environment education

compulsory while national boards like the CISCE and CBSE have introduced it as an optional subject, in their curriculums.

EE in the formal school system

EE in the formal educational system in India is usually handled at three levels. At the primary school level it is a composite subject called Environment, at the middle and secondary school level it is infused into environment in regular school subjects, and is a separate subject at the college level.

A number of specialized institutions like the Centre for Environment Education (CEE), India quite rightly advocate that all three functions need to be done simultaneously rather than sequentially. There is therefore a strong move for the introduction of an environmental studies programme at all levels of education.

The proposed model is for the integration of all three approaches of infusion approach, additional subject approach and the non-formal activity approach. These three separate learning approaches have to supplement and reinforce learnings from each other.

Bharati Vidyapeeth Institute of Environment Education and Research (BVIEER), an NGO in Pune, Maharashtra, did a two-year content analysis of more than 1,800 textbooks from all over the country, studying their handling of environmental subjects. After two-years research to identify gaps and anomalies in environmental education in India the study has brought much light to the whole issue of how green school curriculums are and how they should be rectified. Today about 800 schools now have a new and improved syllabus that promotes an understanding of environmental issues. More than 100 schools in the state of Maharashtra, and 700 more around India, now have a syllabus that aims to improve children's understanding and knowledge of the environment. This change stems from a World Bank-aided study, undertaken by the Indian government since 1999, with the objectives of strengthening environment education in the formal school system. A number of states have been selected for the pilot implementation of this project and much progress is already being made towards greening of the school text-books.

Who delivers EE?

- State and local governments
- Local communities
- Non-governmental organizations
- Universities, colleges, schools and technical training institutes
- Central government
- Business, industry, and the media
- Foundations and funding/donor agencies

Policy and programs

(Excerpts from Greening Formal Education: Preliminary Report by CEE for MoEF, Government of India, 1998)

The two very important ministries of Ministry of Environment and Forests (MoEF) and the Ministry of Human Resource Development (MHRD) of the Government of India champion environment education in India. An overview of their policies and programmes are highlighted below:

Ministry of Human Resource Development (MHRD)

- National Council for Education, Research and Training (NCERT)

Since the 80's, the NCERT has not only developed textbooks and teacher's guides but has also prepared guidelines for various textbook boards to develop textbooks related to EE. Emphasis on the new textbooks is now more on making teaching and learning more environment-oriented and socially-relevant.

During the last 10 years, the NCERT has facilitated a network of curriculum development centres both in the state and voluntary sectors. These projects mainly assisted by UNICEF are:

- o Science Education Programme
- o Primary Teacher Curriculum Renewal Project (PECR)
- o Comprehensive Access to Primary Education (CAPE)
- o Nutrition and Health Education and Environmental Sanitation (NHEES)
- o Development Activities in Community Education and Participation (DACEP)
- o Children's Media Library (CML)
- o Early Childhood Education (ECE)

Under these projects, almost all state governments in India have been engaged in developing instructional materials for experimental schools and in organizing in-service training programmes for elementary school teachers.

- National Policy on Education

The National Policy on Education, 1986 states that 'Protection of the Environment' is a value, which along with certain other values must form an integral part of the curriculum.

The Policy visualizes a national curriculum framework that contains a common core including several elements having direct bearing on the natural and social environment of the pupils. Such core areas are expected to be central not only in the instructional materials, but also in the classroom and out-of-school activities.

The popularly known Socially Useful Productive Work (SPW) is also being reorganized to introduce systematic

gradation in the programme with the provision of direct participation of children in environment related field programmes, like planting and nurturing of trees, environmental sanitation, etc.

- NCERT and the NPE

The National Council for Education, Research and Training's model syllabi for schools strongly recommends the adoption of innovative teaching and learning techniques. For example, for grades I to V, the strategies recommended are:

- o Learning about the environment;
- o Learning through the environment; and
- o Learning for environment.

Facilitating EE in school curriculum

Grades I to II: The child is introduced to the environment as a whole without making any distinction between the natural, physical, social and cultural aspects of the environment.

Grades III to V: While retaining the environmental factor, the social and scientific aspects of the environmental are introduced as two separate curricular areas: Environmental Studies I and Environmental Studies II.

The NCERT's new curriculum guidelines in the subject areas of geography and civics indicate a significant orientation to environmental problems and issues.

Greening Formal Education: Concerns, Efforts and Future Directions
CEE-India, 1998

- Environmental Orientation to School Education (EOSE)

This is a scheme supported by the Ministry of Human Resources Development based on the concept that a compact area having the uniform ecosystem should have similar environmental concerns. Therefore, such a compact area can form the unit for designing one set of programmes for implementation in the schools and the community in that area. Such compact area would then constitute a project for the purpose of the scheme.

The overall aim of the scheme being to promote experimentation and innovation and to complement in diverse ways the schemes being implemented by the state governments for the achievement of goals spelled out in the National Policy on Education for promoting environmental consciousness amongst students. The scheme provides financial assistance to suitable voluntary organisations for development of locale specific teaching-learning materials, undertaking action-research, training etc.

Ministry of Environment and Forests (MoEF)

The Ministry of Environment and Forests (MoEF) interacts with the University Grants Commission (UGC), the NCERT and the MHRD for introducing and expanding environmental concepts and issues in the curricula of schools and colleges. While the MoEF also have a number of schemes and programmes, a lot of their interventions are in the awareness and non-formal EE sectors. The MoEF's Centres of Excellence have been extensively working in this sector as well as with the formal sector.

The MoEF accords priority for the promotion of non-formal EE and awareness among all sections of the society through diverse activities using traditional and modern media of communication. Some of the MoEF's activities in this

direction are:

- The National Environmental Awareness Campaign (NEAC)

Initiated in 1986, the NEAC's basic objective is to create awareness in all sections of society. Under this scheme a large number of NGOs, educational institutes, community groups and even the army from all over the country are financial assistance for organising environmental awareness activities. Since its inception, nationwide school programmes have been organised by the MoEF's Centres of Excellence.

- Eco-Clubs in Schools

To facilitate environment education in schools and to encourage the participation of school children in conservation activities, the MoEF provides financial assistance for setting-up Eco-Clubs in government schools. Each club has about 20-30 members belonging to Classes VI to X. Usually a group of 20 to 50 Eco-Clubs are then facilitated by a coordinating agency, which may be an NGO, professional body or even an educational institute.

Example of a national EE program

To support the many government policies and programmes, the role of the non-governmental sector in expounding and implementing environment education in India both at the formal and non-formal education systems is significant. A major initiative aimed at building networks and developing synergies between various organizations is a programme called National Environmental Education Programme in School (NEEPS). NEEPS is a national network of NGOs, schools and the State Departments of Education, facilitated by National and Regional institutions. Both the Ministry of Environmental and Forests and Ministry of Human Resource Development partially support this initiative.

How does NEEPS work?

- The MoEF provides financial support to institutions like Centre for Environment Education (CEE);
- Schools are grouped into clusters and networked with trainings, materials and monetary support;
- Each cluster is an autonomous unit comprising of an NGOs with 20-25 schools in an area;
- The capacity of the facilitating NGOs on EE approaches and methodologies are provided for by CEE;
- The trained NGOs then train and support teachers to incorporate EE into classrooms and other school activities;
- Besides being in constant contact with their respective clusters, some NGOs also facilitate the development of locale-specific programmes and materials.
- The NEEPS model has the advantage of decentralization where the responsibility is shared by a number of institutions and also in achieving a multiplier effect to reach greater numbers of teachers.

Today the NEEPS network includes over 50 NGOs and 1500 schools across the country. Several other NGOs such as World Wide Fund for India (WWF-India), CPR Environmental Education Centre, BVEERI have been organizing teacher orientation programmes for many years.

Adapted from Status of EE in India - Mamata Pandya, CEE

The other national programs being undertaken in schools across the country is the National Social Service (NSS) scheme where students are exposed to some issues and elements of the environment through field activities like plantation programmes.

Non-governmental organizations

Like in many other fields, even in environment education, the non-governmental organizations (NGOs) have been leaders in environmental education initiatives both in the formal and non-formal sector. Some educational activities are directed more toward the solution of specific environmental challenges or increasing awareness about national or global issues such as deforestation or habitat loss. A number of the national NGOs and even smaller local NGOs and CBO are now involved in research, curriculum development, teacher training, and evaluation.

School curriculum and environment education: The challenges

In 1991, a landmark order of the Supreme Court of India in response to public interest litigation ruled "through the medium of education awareness of the environment and its problems related to pollution should be taught as a compulsory subject." The court directed the University Grants Commission to prescribe a course on environment in the graduation and post-graduation level and consider feasibility of making this a compulsory subject at every level in college education.

The court further directed all state governments and every education Board concerned with education up to the matriculation or even intermediate college to immediately take steps to enforce compulsory education on environment in a graded way by the next academic year 1992-1993.

While a number of state education boards and universities did make amends to introduce environment as a subject, many fail to do so even today. The Supreme Court therefore again intervened in September 2003 and slapped monetary fines on 10 States for their failure to respond to the court notice to implement an earlier order directing the introduction of "environment" as a subject in school and college curriculum.

Issues and Challenges

The various policies of the government coupled with the judicial activism has of course generated much eco-enthusiasm but the question still lies as to how is EE or for that matter 'environment' as a subject effectively being integrated into classroom curriculums? The responses vary - while one school of thought opines that in spite of widespread water scarcity, deforestation, chaotic cities, pollution and global warming becoming everyday realities, environment education in schools and colleges across the country is limited in its content and reach.

A very important matter is that despite all the hustle and bustle of EE, it still does not seem to be a priority in the country. Funding is still lacking and even in educational institutes it remains a low priority.

The preparedness of the educational boards, school administration and teachers is another issue that must be addressed simultaneously if EE is to be effectively taught. The sudden information overload and varied activities around the 'environment' 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.

EE within the school system:**Constraints:**

- Curriculum load
- Shortage of time
- Pressure of examination system
- Large classroom sizes
- Lack of relevant teaching learning materials
- Limited access to reference materials and teaching aids
- Lack of support of school management and parents
- Overloaded teachers

Opportunities:

- Importance of EE being recognized by all concerned
- Environmental concerns are already a part of curricula and textbooks
- Co-curricula activities such as eco-clubs and nature camps are becoming increasingly popular

CEE India

There also is a strong need for more locale specific teaching and learning materials both for teachers and for students. There are of course a number of good resources developed by NGOs like the Center for Environment Education or the Bharati Vidyapeeth Institute for Environment Education and Research. A number of state education boards have also been not only developing educational materials but making them available in various local dialects. In some states, the State Council for Education, Research and Training (SCERT) has also been active in developing EE materials and programs. The lack of a comprehensive inventory of such materials is also not helping the matter.

Environmental issues must be intimately connected with the social, political and economic policies of the nation. It cannot be taught in isolation only as a 'science' subject. On the other hand, it must enable the creation of consciousness of the environment across all sections of the society. It must be linked to real issues that enable one to such as the relation between poverty and natural resources. The contents of EE materials must therefore, be developed in such a way so as to inculcate appropriate knowledge, skills and attitudes.

EE must be linked to the 'roots' of the respective societies and their well-being. It cannot just be about primary species or recycling of plastics or planting trees. It must reach out to bridge the urban-rural divide through a spectrum of issues supported by multidisciplinary inputs. For this a consultative process of all stakeholders is important and their involvement encouraged.

For environment education to be made holistic, it must move away from the 'nature' focus to other areas of development and social issues of environmental conservation. For this, it is important that practitioners, educators, locals and students network and learn together.

The process and methodologies of infusion of environment education into the school curriculum needs to be strengthened by building synergies between the various approaches and setting respective learning goals.

There need to be special programs that support and look at teacher training for effective environment education.

The use of non-formal methods must be further explored and infused into the normal school teaching methodologies. NGOs and other non-formal institutions and organisations are way ahead in this sector and both the government and educational institutions should capitalise on it by building healthy relations and networks.

The greening of school curriculum should adopt strategies that highlight environmental concepts, information and issues that are of importance to the region or area where the text-books are to be used. The examples, case-studies and activities together with action plans must be locale specific otherwise there is a danger that these green books become

just another set of books that are used to grade students knowledge and memory. The contents must in a way be able to inculcate an ecologically conscious way of thinking and living amongst the learners.

The approach to thinking or defining environment education must also be revisited so that EE is about a systematic approach that responds to manage rather than react to solve.

EE must also bring about the whole issue of social equity that facilitates mainstreaming by realising the linking of the non-formal and the formal systems. This therefore would require a form of systems thinking that brings hope, creates options and identifies the elements of the system be it bottle-necks or opportunities to development.

While it is important to have green policies and text-books, it is even more important that the institutions and organised in these complex process have consistent funding sources and an enabling environment. Teachers, for example, should be constantly supported through a series of orientation trainings, pre-service trainings, in-service trainings, evaluations, refreshers courses etc.

Despite many exemplary efforts in environment education, the lack of long-term consistent support and commitment at different levels has created a field that is often fragmented, inefficient, and duplicative. Much work still needs to be done at national, state, and local levels to institutionalize environmental education.

In many regions, the responsibility for environmental education rests mainly with nonprofit organizations, community educational institutions, and motivated educators scattered throughout the country. The government must supply the amount of funding needed to support the field or leverage support from various other sources.

While environment education in schools is being pursued with much zeal, we must not forget that there is a larger audience outside who probably need EE as much or more than the children. These could be adults, low-income or other deprived groups.

There needs to be a national accreditation panel to evaluate environment education programs and determine their effectiveness. This will not only help maintain the quality of the programs but also help in improving the content, quality and design of the materials, training programs and even projects.

There is a dearth of baseline data on the subject matter of environment education or on skills that may be required. This must be supported with research on materials, outcomes or effectiveness and more importantly skill competencies of the teacher/trainer.

Conclusion

EE is as complex and complicated as the term 'environment' itself. It cuts across many disciplines, sectors, realms, eco-systems and spheres and hence EE needs to be planned and implemented systematically. There are a large number of innovative practices and lessons already available. These need to be identified and replicated or adapted for similar regions.

Despite numerous definitional and implementation flaws, the contribution of the environment NGOs and activists need to be recognized for creating a nation-wide awareness on issues of environment and development. This has been one of the major elements that has pushed environment education in India where it is today. Quality structured formal and non-formal environment education syllabuses are urgently required so that these can be smoothly assimilated in to existing education systems. That should n A society cannot survive if its natural resources are rendered unfit for use by its people. The only hope of salvaging this grave situation is by making the young aware that they need to proactively begin to protect the environment they will inherit.

Education should not be thought of packing ill assorted and unwanted information into the heads of the students. It should not become a dead weight crushing all originality in them and turning them into mere automata as Mahatma Gandhi has put it.

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