Environmental Education at School Level : Issues at Glance

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Abstract

Environment related problems being complex need complete understanding of social, ecological as well as economic factors of all resources, their short and long term advantages/disadvantages and analysis of the problems and issues arising out of that in order to protect the environment along with taking care of the needs of all living beings through sustainable development. Sustainable development, which is the need of the hour, can be very strongly boosted through Education. A paradigm shift can be provided to it through Environmental Education (EE) which should neither be restricted to water tight compartments of the subject streams nor be dealt in isolation as a separate subject. Emphasis should be on holistic learning with a multi-disciplinary approach. This article explores various issues, dimensions and scope pertaining to environmental education and its implementation at the school level.

Our Environment

The environment, literally, means everything that surrounds us i.e. it includes natural as well as man made elements in it. It is often confused with ecology, which is the study of different processes and phenomena occurring in the natural world.

Ecosystems tend to remain in a state of equilibrium and posses self-regulating mechanisms for maintaining their balance. Thus, they become the source as well as the sink of all human activities. They lose that capacity to do so, because intricate connections that exist between various components of nature get disturbed by different human activities, which are a result of development in technological terms i.e. different activities carried out in our environment impact the ecological aspects causing an irreparable loss to ecology by technology.

Receding glaciers, swathes of deteriorating forests, unpredictable monsoon, global warming and vanishing tigers are a few examples. Hence, the environmental problems of the world today are largely a consequence of the course of development and lifestyle of

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modern human society that endangers health and well being of all the living beings, degrade environmental stability which faces a threat of its destruction (Gore, 1992, 1994).

On one hand, we come across incidents which reveal a growing awareness about environmental hazards among all the stakeholders, as is evident from the public interest litigations and protests filed by the citizens, like cutting of the trees in the Delhi University campus for creating sports complexes for 2010 Commonwealth games, residents of Vasant Kunj in Delhi protesting for construction of a wall granted without environment clearance, introduction of Compressed Natural Gas (CNG) fuel for public transport etc. However, our efforts are still proving to be insufficient to deal with global change in climate, loss of biodiversity, loss of soil fertility, soil erosion emerging global diseases etc. The so called educated but environmentally illiterate society still needs to be awakened about living in harmony with the environment as depicted in our ancient literature and culture.

One of the biggest challenges to society is to find a balanced relationship between human and natural environments. An amicable solution to this was introduced by the World Commission on Environment and Development (1987) by introducing the concept of sustainable development i.e. development at the cost of finding a balance between providing the needs of the present and future human society and protecting the environment. According to our common future 1987 "Sustainable development is using, conserving and enhancing the community's resources so that ecological processes on which life depends are maintained and the total quality of life, now and in future, can be increased." For this social, ecological as well as economic factors of all resources (living as well as non living) and their short and long-term advantages as well disadvantages must be taken into account. Thus, environment and development problems are complex and need a multidisciplinary approach to their solutions which requires a complete understanding and analysis of the problems/issues from all angles so as to protect the environment along with taking care of the needs of all living beings especially. humans. To check the problem, there needs to be not only aware but action oriented people who keep rational thinking and the skill of problem solving.

Education is a crucial agent for achieving sustainable development and creating an environmentally literate society- a society motivated and equipped to influence decision making (orr; UNESCO- UEP' 1976, 1978, 1992,1995). To communicate the idea deep into the minds of the individuals, school education is an important medium and a paradigm shift can be provided to it through Environmental Education.

Environmental Education — The Background

Out of the initiatives at the global level, the intergovernmental conference on Environmental Education, held at Tbilisi in 1977, has a special significance as it aimed at nurturing the following in individuals:

- An awareness and sensitivity towards environment and its problems;
- Basic knowledge and understanding of the environment and its relationship with man;
- Social values and attitudes and concern for the environment which are in harmony with the environmental quality;
- Skills to solve environmental problems;
- Ability to evaluate environmental measures and education programmes;
- A sense of responsibility and urgency towards the environment so as to ensure appropriate actions to solve environmental problems.

In India, the concept of EE has its existence since ancient period, however, if we look at the preindependence period where the Basic Education Movement launched by Mahatma Gandhi, in 1937 was a serious endeavour to develop linkage between school education and local environmental needs. Later the report of Education Commission (1964-1966) incorporated these ideas and recommended that education be related to the real life around to develop proper understanding of each curricular area. However, the implementation process could be initiated only in 1977 through The Curriculum for Ten-Year School: A Framework (1975) developed by the NCERT. Based on NPE 1986(modified in 1992) 'Protection of Environment' is stated as a common core around which the subsequent curriculum frameworks were woven. In other words EE has always been a priority area, in all curriculum development programmes.

Status of Environmental Education at different stages of School Education

At the primary level, EE has been introduced through a subject Environmental Studies (EVS). Before implementation of National Curriculum Framework for School Education (NCFSE)- 2000, it was considered to be disciplinary in nature and was being introduced in two parts i.e. EVS-I and EVS-II in Classes III-V. However, in Classes I and II, it was introduced in integrated form through the use of Teachers' handbook. Integrated approach for EVS curriculum at the entire primary stage was adopted by NCFSE-2000, wherein, it recommended that in Classes III-V, children would be introduced to the environment in its totality with no clear-cut distinction between natural and social environment. In Classes I and II, it was not kept as a curricular area and environmental concerns were addressed through language, mathematics and Art of Healthy and Productive Living. The content at that stage has to be drawn from the immediate environment of the child and it would be integrated with language and mathematics. *NCF–2005* while supporting the continuation and further strengthening of the integrated approach for Environmental Studies during the primary years, envisages integrating children's experiences of the world around them with the school knowledge.

For the stages higher than primary, EE was introduced through infusion approach. At the upper primary and secondary level EE is transacted through

infusion of environmental concerns and issues through textbooks mainly science, social science and languages having small projects and activities on environmental issues. At the higher secondary level majority of concepts related to EE are found in the textbooks of biology, chemistry, physics, geography, economics, sociology and political science. However, since at the higher secondary stage students can opt for different electives, a project based compulsory environmental education is recommended. The challenge lies in choosing the suitable objectives of teaching EE in school education, so as to translate these appropriately into syllabus and finally into the textbooks and various within/out of the classroom activities/processes in order to emphasise emotional and attitudinal aspects of the learners' personality along with the requisite cognitive component.

Right from the pre-primary stage at the school level children should be exposed to a variety of situations through the process of teaching–learning so as to enable them develop their minds towards sensing the problem, analysing it from different angles, taking rational decisions and developing appropriate strategies to solve these problems. This establishes the fact that EE should be regarded as a process rather than a subject (NCF-2005).

Issues, Dimensions and Scope of Environmental Education in School Education

Keeping in view its aims and objectives and the fact that EE should be regarded as a process rather than a subject the strategies for its effective implementation need a critical review.

However, one cannot be oblivious about the ground realities where, large teacher-pupil ratio, lack of resources and a number of such other constraints causing hindrance in its effective transaction. These can be addressed with the passage of time but more importantly in addition to these, the teaching learning process needs a drastic change which is highly teacher centered having rigid evaluation system which forces students to cram and reproduce the gained information in examination and get indulged in malpractices like buying readymade projects to score more and more marks.

The National Focus Group on Habitat and Learning (NCERT 2006) also recommends to bring a massive improvement in our system of education which till now had been going more or less in the traditional way of treating knowledge as a piece of information and making the students acquire it only for the sake of passing examination. Further, it says to achieve this, a curriculum based on the principles of learning of, for and through the environment should be designed which facilitates a meaningful learning of EE to promote the pursuit of sustainable development and fulfill the objectives of EE through a variety of pedagogical means. Being a multidisciplinary area of study its scope is broad based and includes natural, social and cultural dimensions, which are very closely, related influencing one another. One of the issues is to take up EE in the context of school curriculum through a suitable approach.

Keeping in view the holistic nature of EE and also the fact that an environmental issue cannot be dissected into different streams of different subjects, one of the ways of learning EE is through an integrated approach wherein environmental issues are integrated with basic disciplines. Indeed a thorough understanding of science, social studies and mathematics is required to completely understand/ comprehend different environmental issues. The students must be exposed to the tasks wherein they are able to connect various aspects of an issue through the knowledge in their basic disciplines. For example, the recent decision of the Delhi government to cut the trees for developing sports complexes for the Commonwealth Games 2010, could be a problem before the students and they must be able to rationalise it from different dimensions such as; the extent of the loss of the bio-diversity that can be assessed through a thorough understanding of the biological as well as geographical concepts. To carry out various estimations, they need the mathematical skills. Besides that they could also analyse the economic aspects of holding the games such as financial implications in terms of generating revenue, more jobs, loss of flora and fauna. Similarly, mining in the Aravalli Hills and the Supreme Court order to stop it (Hindustan Times, dated 9 May, 2009) could be taken another issue and to analyse this problem, one needs to understand the chemical, geological, mathematical, economic and political aspects of the problem to arrive at some sound conclusion.

Hence, being holistic in nature, EE includes everything around us, thus involves a complete understanding of different processes happening, how different systems function in the world and interdependency of things on one another. Therefore, through integrated approach the teaching learning of EE requires to draw the basic knowledge of each discipline and integrate it suitably in the context of EE so as to address the issues/problems. Looking at this, it becomes obvious that such an approach could be followed only when students acquire the necessary minimum knowledge in each curricular area so as to develop a cross curricular linkage.

For the last several years, in India, the approach of infusion was being followed not only at school but also at higher levels of education as well. This issue was taken up seriously after the Supreme Court order in 2003. It was limited to an extent so as to introduce a paragraph or a chapter in the textbooks in order to make them as green. However, every teacher will teach the particular concept with a different concern and it becomes difficult for children to comprehend and integrate from more than one discipline on their own so as to understand and address a particular issue at their level. For example, in one of the chapters of a Hindi textbook (Class VII, NCERT), a poem 'Hum Panchii Unmukt Gagan Ke' offers questions such as 'How caging of birds affects environment? , What problems can arise in a world without birds? Now, only a competent teacher, aware about the ecological and biological aspects of the problems can deal with such questions

effectively which could be a rare case. The same issue might be dealt differently by a language and a science teacher (especially. biology). Moreover, if the language teacher is unaware then she may leave the questions as being irrelevant or let children explore the answers.

Having an additional subject on EE is another approach. However, EE being multidisciplinary in nature would require drawing of content from all disciplines and teaching it with a different context. To be more precise, EE is having a concern about the environment so as to observe, identify, analyse an issue through critical thinking, and address the issues and concerns by the skill of problem solving. One can even say that EE is not a discipline in itself but it is about the issues and concerns pertaining to the environment and addressing those using a holistic and thorough knowledge of all other disciplines. Moreover, treating EE in a compartmentalised form or as a separate segment of study will not help addressing the issue but will lead to burdening children with an additional subject. It will further lead to creation of another period in the school timetable and another tool to make children cram the factual information and teachers assess it through oral/written tests, thus, defeating the purpose of EE. This will also require trained teachers in EE exclusively for which we are already struggling as there is not only a dearth of teacher training institutes in the country. But also only a few universities/ institutes are offering a course in Environmental Studies and Environmental Sciences. Hence, it will be difficult to address the issue in the present circumstances.

It may be concluded that objectives of learning EE cannot be achieved if we restrict its learning only up to the textbook at the classroom level.

Till now environmental education has been more or less a kind of nature education focusing on issues related nature appreciation, revival of depleting bio-diversity and protecting endangered species etc. and thus, ignoring the social and environmental issues affecting the poor and underprivileged. Many issues such as poverty, educational and social equity and environmental justice are very closely connected to their day-to-day survival.

For example, in an effort to cut down the greenhouse gases emission, the use of bio-diesel has been encouraged in many countries. Many of the developing countries have started to plant crops like Jetropha. This led to profit for a class but affected a number of people who were dependent for their livelihood on the forests. In addition to this, it led to loss of soil fertility, loss of biodiversity and loss of the forests which were otherwise a good sink for the greenhouse gases and thus lifeline of the living organisms including humans. Also, the issues related to mass suicides by the farmers in Andhra Pradesh require an attention to be paid towards many environmental factors such as deforestation, water scarcity, water logging, and reduced fertility of the soil and misuse of power by a class to exploit the natural resources and many other social issues. Malnourishment is an important issue prevailing in almost all the developing countries. It is also very closely related

to various environmental issues as well as social issues.

Thus, it is obvious that environmental education fails to address the issues in a way that how environmental problems arise or what is their origin. The picture cannot become crystal clear without being honest with industrial capitalism, colonial exploitation, issues related to poverty, superstitious customs/beliefs. An environmental educator should create opportunities where students can have a direct experience with what is for many of them, a separate reality. Through the process of environmental education students will develop a critical mind to analyse the problem/issue from all dimensions in order to identify its origin. They need to recognise the wider connections between environmental concerns, social and economic justice. In order to make the environmental education curriculum relevant it should be inclusive of the issues related to global justice, social justice and environmental justice to enable children to be efficient in the skill of decision-making and problem solving.

Another important issue in the multicultural context like India is the issue of diversity. Diversity is critical to strong and healthy environment. Just as diverse ecosystems are healthier, diversity in teaching learning of EE will help in better understanding of the related issues and concerns. Diversity in various aspects e.g. in terms of local specificity, giving learning opportunities to the children and also in terms of textbooks and teaching learning material needs to be addressed. Especially at the primary level children should be exposed to the environment /the world they live in. They should be allowed to interact with their surroundings giving them opportunities within as well out of the classroom giving emphasis on various processes of observation, classification, interpretation and draw inferences. Even the textual material that is provided to them should contain the content, examples, activities and illustrations with which they are already familiar from their surroundings.

Traditionally, it was believed that making them more aware about their environment and concerns related to it could change people's behaviour towards environment. The approach was based largely on the 'Hines' model of responsible behaviour. It was thought that increased knowledge leads to favourable attitudes which in turn lead to action promoting better environmental quality (Ramsey and Rickson, 1977). The situation is comparable to case of a medical practitioner being aware about the disease yet is unable to treat it till she is equipped with the skills to diagnose the disease, its origin, choosing a suitable method to treat it and applying the method successfully. In addition to skills equally important is the attitude towards it. The problem of the menace of pollution arising from the crackers during the festival of Diwali in Delhi could only be addressed by sensitising children through school education. Our efforts till now focused a lot on the awareness part instead an equal focus should be to expose students to the actual world they live in so as to familiarise and sensitise them against the environment related issues and problems. The need of the hour is not only to create awareness but also develop the favourable attitudes and skills of

rationalising and problem solving. Children must be sensitised towards the environmental problems and concerns and equipped with skills to enable them analyse, evaluate, draw inferences and resolve them.

There is a need to introduce environmental education through problem solving action oriented approach in order to empower children to take an action on issues, which directly affect them. This would not only increase their awareness about environmental issues but also it would let them acquire a variety of tools that they could use to effect change. Thereby, it could be one of the powerful means to bring an effective change through them in a positive manner. Working on this approach the multidisciplinary and interdisciplinary nature of environmental education will automatically become apparent.

Considering the above-mentioned aspects, NCERT (2006), has tried to address these issues and promote the pursuit of positive environmental actions towards sustainable development through school education. A new paradigm for the process of teaching and learning has been proposed to bring about the desired change. It lays emphasis on:

- Learning rather than teaching
- Building capacity for critical thinking and problem solving.
- Locale specificity in the context of global vision
- Multidisciplinary Approach
- Participatory with broad involvement of peers and other community members
- Life long and continuous in character
- Sensitivity to diversity, equity and gender
- Knowledge generation
- Empowerment rather than indoctrination.

Emphasis has been given on a process/skill based education at all levels. At the primary level, emphasis on providing an enabling environment for children that is rich in stimulation and experiences and allows children to explore experiment and freely express themselves. Considering the holistic nature of learning, environmental studies has its syllabus based on integrated aspects of natural, social and cultural environment. The content has been chosen for not only creating awareness but also on sensitisation of the young minds towards exploitation of natural resources, social inequalities and cultural diversities through diverse learning opportunities involving processes of EE. For example, the theme 'water' includes the concepts related to its availability, quality, contamination, purification, discrimination on its distribution, conservation, as an energy resource and other aspects related to health and hygiene have been incorporated. Further, the physical, chemical and mathematical aspects related to its state and properties have been thoroughly dealt with. Learning opportunities where children are not only trained in different skills of EE but also exposed and sensitised towards the real life problems pertaining in their surroundings have been selected. At the upper primary, secondary and senior

secondary level the environmental component is being taken care through different subjects (mainly through science and social science). Problem solving approach is central to all curricular areas with emphasis on skills through a variety of means. Lot of projects, activities has been suggested by which children will be trained in skills to make them action oriented.

However, revising the curriculum, syllabi and textbooks needs to be accompanied by the capacity building programmes for teachers, who need updating not only in the content, pedagogical and evaluation practices so as to strengthen the emotional and attitudinal aspects of children in addition to the awareness and skills of EE. A mutual interaction between teachers teaching different stages and disciplines is very essential so that the integrated or infused concepts of EE could be effectively taken up by them in their respective subject areas.

Above all, if we really wish to practice environment education and inculcate a favourable attitude and the desired skills among the learners, we must practice the sustainable behaviours in a true sense. Sustainable concepts being taught quite often conflict with unsustainable behaviours that schools model to their students. Inconsistency between teaching and practice has confused the students (Berryman and Breighner, 1994). Though a lot is talked about on incorporating greening and sustainability into the school curriculum yet a little is done when one could adopt and demonstrate sustainability through the entire school system and its community. The gulf between what we preach and what we practice should be narrowed. In other words, practicing or modelling sustainability can help a lot in achieving the desired objectives of EE.

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