



NEED FOR ENVIRONMENTAL EDUCATION IN PRE-SERVICE AND IN-SERVICE EDUCATION PROGRAMMES

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Abstract

One of the primary aims of environmental education is to enable human beings to understand the complex nature of the environment as these results from the interaction of its biological, physical, social, economic and cultural aspects. It must accordingly provide the individual and the community with the means of interpreting the interdependence of these various elements in space and time so as to promote a more considered and cautious use of the resources of the universe to satisfy the needs of mankind. Environmental approach to teaching should have a strong motivational impact on the participants. The present paper encourages teachers to environmentalise their teaching, stimulate them to engage in exploring their personal assumptions, values and feelings about society and the relationship to these in natural environment.

Keywords: *Environment, biological, teachers, training.*

Introduction

“While a term like ecology was almost unheard of in the yesteryears, it is today on the syllabi and the fear is that there may be only concrete jungles in the future.”

---Mr. Alexyz

We are no longer where we stood a decade ago, dazzled by changes whose relationships to one another were unknown. Today, behind the confusion of change, there is a growing coherence of pattern, the future is taking shape but in peril. The concept of clean environment is disappearing in the greed of industrialization. Man's mind is involved in consumerism and it is gaining momentum. A new industrial civilization is up surging. Gloom is descending on the globe. Due to scientific and technological advancement, a new era has been developed where man has entered the age of “Environmental Awareness” or the “Age of Ecology”. Our news media continually report the plight of the environment. The fragile biosphere, that envelope of land, water and air on which all organisms depend, shows signs of serious deterioration. The air around many cities and industrial complexes are laden with dangerous chemicals; vast land areas have been devastated by careless mining operations; unique forest areas are threatened by the encroachment of man and his technology; pesticides are beginning to endanger many beneficial species (including man); major cities face insurmountable problems of waste disposal; enormous quantities of litter are accumulating throughout our landscape. All of these and countless more are symptoms of the environmental degradation that is attracting so much attention.

In the past our environmental concerns were less pressing, merely a matter of aesthetics we now realize that there is something far more fundamental involved in it. The symptoms are indication of changes that threaten the survival of the human species. The chemical, physical and biological changes that we are causing are effectively poisoning our environment thus endangering man and the vast complex of living organisms on which he is both directly and indirectly dependent for his survival.

Although there is much discussion concerning the deterioration of our environment, the underlying causes and long-range implications of the problems but these are seldom dealt directly. Most attention is devoted to the ways of dealing with the symptoms rather than the disease itself. Given the frightening pattern of environmental deterioration and its obvious acceleration, this situation must be rectified immediately. If it is not, we may well have doomed the human race to non-survival. The threat to human survival inter-related problems such as :

1. The explosive increase in human population,
2. An awareness increase in man's ability to alter the environment (largely through the release of vast quantities of gaseous, liquid and solid effluents), and
3. Rapid depletion of resources that are in finite supply.

If man is to survive, it is imperative that all three of the problems are dealt with simultaneously. This dimension can be achieved only when we enlighten our younger generation and impart them proper education in order to develop right attitudes and enlarge the area of commitment towards checking environmental deterioration.

The environment has been the subject of great deal of concern, research and writing over the past few decades. However there is a strong notion that the study of the environmental problems are the subject matter of a study of science and



technology and hence have been treated as something beyond the scope of education where as the study of environment is the inter-disciplinary approach. One of the strong obstacles in the identifying the integrated approach to the environmental problems is the failure to understand the inter-disciplinary linkages of the environment. This resulted in the identification of only the “Curative Aspects” of the environment (encompassing science and technology) which lead to the neglect of preventive aspects. The various social sciences such as Economics, Sociology, Education, Anthropology and Psychology etc. offer preventive tools for proper environmental planning, organizing and management programmes. Of all the social sciences, education offers most of the cause-effect attributes of environmental education.

Environmental Education: Conceptual Framework

The present day’s global environmental problems and challenges make environmental education (EE) as one of the major issues at different levels of education. Environmental education is a practical process for equipping man with the knowledge, skills and commitment to improve the environment. Environmental education is, therefore, forming desirable belief, attitude, value, interest and understanding etc. about the environment so as to preserve it and improve it for survival of the present and future mankind.

Encyclopedia of Educational Research (Mitzel, 1982) states

Defining ‘environmental education’ is not an easy task. Unlike other curriculum areas, the specific content of environmental education has never been well defined. It is universally agreed, however, that environmental education should be interdisciplinary, drawing from biological, sociological, anthropological, economic, political and human resources. It is also agreed that a conceptual approach to teaching environmental education is best. The majority also agrees that EE is the process of recognising values and clarifying concepts related with environment and its problems in order to develop skills and attitudes necessary to understand surroundings. It also entails practices in decision making and self-formulating a code of behaviour about issues concerning environmental quality.

According to the report of a conference of African Educators of Nairobi (1968):

“EE is to create an awareness and understanding of the evolving social and physical environment as a whole, its natural, man-made, cultural, spiritual resources together with the rational use and conservation of these resources for development.”

Environmental Education (EE) emerges to be a comprehensive life-long education, responsive to changes in a rapidly changing world. It emphasises on the interdependence of man, society and nature. It attempts to focus on the highly complex relation between development and natural system. Centre for Environmental Education Ahmedabad defines the term EE as :

“Environmental Education is a process aimed at developing a world population that is aware of and concerned about the total environment and its associated problems and which has the knowledge, attitudes, motivations, commitments and skills to work individually and collectively towards the solution of current problems as well as the prevention of new ones.”

International Union for the conservation of natural resources (IUCN) in 1970 stated that :

“Environmental Education to be a process of recognising values and clarifying concepts in order to develop skills and attitudes necessary to understand and appreciate the interrelatedness among man, his culture and his biological surroundings.”

Environmental Education proposes to develop in an individual a sense of responsibility and commitment to preserve environment for a better tomorrow. While understanding the meaning of environmental education, three of its connotations i.e. education FOR the environment, education THROUGH the environment and education ABOUT the environment. The first, the foremost and a highly relevant aspect today is the development of attitudes, skills and evaluation abilities for the proper use and the development of environment i.e. education FOR the environment; where the environment is used as a vehicle for gathering concepts, knowledge and skills related to specific academic disciplines, it is the education THROUGH the environment; and acquiring and understanding of the total environment constitutes education ABOUT the environment.

Considering the potential of education as an effective instrument in talking environmental crisis, ‘Environmental Education’ can be a powerful instrument in understanding, preventing and solving environmental problems.

Mitryuskin et al, (1980) have outlined environmental education at two levels :

- Education at educational establishment and
- Education outside the educational establishment.



The first starts from kindergarten, primary secondary and goes on to tertiary education bodies and the second is in the family, in cultural gatherings, public activities, press, radio, T.V. etc.

“Environmental education should simultaneously attempt to create awareness, transmit information, teach knowledge, develop habits and skills, promote values, provide criteria and standards and present guidelines to problems solving and decision making. It therefore aims at both cognitive and affective behaviour modifications. Environmental education is an action oriented, project centred and participatory process leading to self-confidence, positive attitudes and personal commitment to environmental protection. Further more the process should be implemented through an interdisciplinary process” (UNESCO-UNEL, 1987).

Approach to Environmental Education

UNEP’s approach to environment education and training is based on two concepts:

Education: For establishing sensitivity to environmental problems, raising the level of awareness and generating commitment, AND

Training: For development and mastery of skills in solving practical problems and for specialised action.

Goals of Environment Education

Environmental education encompasses all aspects of human life such as socio-economic, political, natural, man-built, biological, aesthetics and cultural, and should stress the inter-relationship and the dynamic nature of these component sub-systems.

It should also contribute to the development of a person’s ability to make wise and responsible decisions and take appropriate actions in resolving current and future environmental problems and issues. It should enable people to generate alternative solutions to problems, and to develop skills needed to judge and choose among these alternatives.

One of the primary aims of environmental education is to enable human beings to understand the complex nature of the environment as these results from the interaction of its biological, physical, social, economic and cultural aspects. It must accordingly provide the individual and the community with the means of interpreting the interdependence of these various elements in space and time so as to promote a more considered and cautious use of the resources of the universe to satisfy the needs of mankind.

Environmental education should contribute to an appreciation of the importance of the environment in economic, social and cultural development. It should foster, at every level, responsible and effective participation by the population in framing and monitoring decisions involving the quality of the natural, social and cultural environment.

The goal of environmental education according to Belgrade Conference (1975) was as follows:

“To develop a world population that is aware of, and concerned about the environment and its associated problems, and which has the knowledge, skills, attitudes, motivations and commitment to work individually and collectively towards solutions of current problems and the prevention of new ones”.

The goals of environment education as discussed in the Inter-Governmental Conference on Environment Education, organised by UNESCO in co-operation with UNEP, at Tbilisi, Georgia in the USSR from October 14-26, 1977 are mentioned below:

- To foster clear awareness of and concern about economic, social, political and ecological interdependence in urban and rural areas.
- To provide every person with opportunity to acquire the knowledge, value, attitude, commitment and skills needed to protect and improve the environment.
- To create new patterns of individual groups and society as whole towards the environment.

Basic Issues in Environmental Education

The Inter-Government Belgrade Conference of 1977 highlighted the basic issues concerning environmental education. These are :

Environmental Issues: Environmental education should concentrate on examining major environmental issues from the local, regional, national and international points of view so that the students receive insight into environmental conditions in other geographical areas.



Environmental Situations: Environmental education should focus on current and potential environmental situations while taking into account of the historical perspectives.

Learning Experiences: Environmental education should enable learners to have a role in planning their learning experiences and provide an opportunity for making decisions and accepting their consequences.

Environmental Sensitivity: Environmental education should relate environmental sensitivity, knowledge, problem solving skills and values clarification to every age with special emphasis on the learner's own community in early years.

Environmental Problems: Environmental education emphasizes the complexity of environmental problems and thus the need to develop critical thinking and problem-solving skills.

Diverse Learning Environment and Educational Approaches: Environmental education should utilize diverse learning environment and a broad array of educational approaches to teaching with due stress on practical activities and first hand experiences.

Environmental approach to teaching should have a strong motivational impact on the participants. It should encourage teachers to environmentalise their teaching, stimulate them to engage in exploring their personal assumptions, values and feelings about society and the relationship to these in natural environment.

Teacher Training Programmes in Environment Education at Elementary Level

The present day's global environmental problems and challenges make environmental education (EE) as one of the major issues at different levels of education. Environmental education is a practical process for equipping man with the knowledge, skills and commitment to improve his environment. Environmental education, therefore, must receive adequate importance in India right from the primary level to higher education. Recognising the potentials of education in creating an environmentally conscious society, the National Policy on Education-1986, Government of India stated that there is a paramount need to create a consciousness of environment. It must permeate all ages and sections of the society, beginning with the child. Environment consciousness should inform teaching in schools and colleges. This aspect will be integrated in the entire education process.

Consequent to this, several concerted efforts have been made in the country, both at the national level and individual state levels to recognise the content and methodologies of teaching at the school level to integrate and infuse environmental perspective. These efforts have been intensified with the Supreme Court's Directive (1991) to make Environmental Education (EE) compulsory at the school level.

Surveys conducted by UNESCO-UNEP (1982), Ravindranath and Razak (1988), Meera and Ashish (1992) in ascertaining EE requirements in the country have clearly indicated that the most pressing requirements are in the areas of :

- Developing and distributing quality teaching-learning materials;
- Equipping teachers and resource persons with the knowledge, understanding and skills in imparting EE;
- Conducting action research and experimentation for promoting EE;
- Networking with various institutions for information, resources and expertise.

The goal of any teacher education effort or programme in environmental education (EE) should be to develop environmental education competencies. These competencies take the form of knowledge, behaviours, and skills, which are necessary to effectively incorporate the environmental dimensions in educational programmes.

Numerous strategies have been employed to develop the EE competencies of both pre-service and in-service teachers. These strategies include but are not limited to: required courses in EE for pre-service teachers, infusion of competency developing experiences in pre-service method courses, in-service workshops, courses and diplomas, staff meetings, conferences, institutes, and the development of specialised teacher centres.

While these challenges are being attended to through various institutions in the country (government and non-government), the role of DIETs in effectively implementing EE in schools becomes crucial.

Goals and Objectives of Teacher Training Programmes in Environmental Education

Teacher education is a continuous process. Its pre-service education and in-service education components are complementary to each other. It has been truly said that the quality of a nation depends upon the quality of its schools, the quality of its school depends primarily upon the quality of teachers, and quality of teacher depends upon the quality of training imparted to them.



In the ultimate analysis it is the teacher who would be interpreting and transmitting the message of EE to the students, whatever be the level of education one is concerned with. A teacher properly equipped with necessary knowledge, skills and attitudes, becomes an essential pre-requisite for successfully introducing any programme of EE in schools. Thus proper orientation of the teachers into EE concerns is a matter of vital importance. Considering the importance of this aspect, the Tbilisi Conference recommended to the member states that :

- Environmental science and EE be included in the curricula for training of teachers;
- Necessary steps are to be taken to make available in-service training facilities in EE to all teachers who need it;
- Teachers in training should be given an understanding of the widest possible range of educational materials and opportunities for adaptations and improvisation according to local circumstances.
- Teachers and learners should be involved in preparation and adaptation of instructional materials for environmental education.

Even though the Recommendations were adopted more than a decade ago, not much headway has been made in effective integration of EE into Teacher Education Programmes in a systematic way. Incorporation of environmental education into teacher training programmes may involve three alternative approaches, namely :

1. Introduction of a specific course in EE methods;
2. Infusion of EE methods and foundational components into existing courses in the programme;
3. Addition of EE inputs into the existing courses dealing with foundational as well as pedagogical components.

Suitability of adopting one or the other approach has to be examined in the context of the existing structure of the teacher training programmes. A broad analysis of the existing programmes reveals that the teacher education generally consists of three components. The first component consists of a set of foundational courses dealing with philosophical, psychological and sociological dimensions of education; the second component deals with teaching of school subjects; and the third component involves working with the community.

Conclusion and Recommendations

More specifically, it can be concluded that the teacher preparation in Environment Education should:

...focus on and reflect that man-faceted and inter-disciplinary nature of EE. In so doing, teachers should be provided with opportunities to acquire and apply the knowledge, skills and attitudes inherent in environmental education. At the very minimum, this should include:

- Basic training in ecology.
- Field and/or laboratory experiences for teachers in the area of environmental science.
- Knowledge of environmental issues and problems or resource management.
- Competencies in environmental problem identification, investigation, evaluation and citizenship action.
- Opportunities to develop value clarification skills and knowledge of the roles of human values in environmental issues.
 - a) ...provide instruction and experience with multidisciplinary (infusion) curriculum as well as instructional activities and methods similar to those they might use in their own classrooms.
 - b) ...provide an opportunity for pre-service teachers to experience a multidisciplinary or infusion model in their own training, i.e., be a receiver in a tertiary infusion model of EE.
 - c) ...provide instruction on the philosophy and goals of EE and the nature of interdisciplinary and multidisciplinary (infusion) EE curricula. Further, teachers should be trained in the implementation of these models.
 - d) ...provide specific training-particularly at the elementary level – in the use of EE content as a vehicle for teaching basic general education skills, e.g., in language arts, reading, and mathematics.
 - e) ...provide opportunities for teachers to develop skills in identifying, inventorying and evaluating local resources for use in environmental education.

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