

## Value oriented environmental education in teacher education

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**Abstract:** *Environmental Education has been a part of school curriculum in India. Yet, we see rise in pollution level, be it land, air or water, over consumption and excessive waste generation due to uncontrolled human activities. Environmental education has not been able to show its impact as it should be. Environmental education should be able to instil set of values in future generations which enable them to take responsible decisions for environment. Values, beliefs, and ideals are the real guiding forces which determine the choices people make in achieving their life goals. Teacher is a main source of developing environment friendly values in children. To instil environmental ethics, teacher education should focus on developing environmental ethics in future teachers. The main emphasis of environmental education should be to develop attitude and skills which will make future teachers' environment friendly. Environmental ethics and values cannot be inculcated by making environmental education course compulsory in the teacher education. It needs different approach and methods of teaching to serve the purpose for which it has been included in the teacher education. This paper explores various methods of teaching environmental education which should be employed to instil required values and skills in future teachers and make them responsible citizens.*

**Key Words:** *Environmental Education, Environmental Ethics, Project based Learning, Problem Based Learning.*

### 1. INTRODUCTION:

From the last two decades we have witnessed environmental crises in terms of climate change, excessive pollution, waste accumulation, outbreak of diseases etc. the list is exhaustive. The human beings are facing new problems and challenges related to environment. Efforts to combat the challenges of environment and sustainable development are being made worldwide. There is an urgent and indispensable need to inculcate environmental awareness in the students at all levels for the development of an eco-friendly environment. Environmental awareness started getting momentum after the Stockholm Conference in 1972. For the first time it was felt that the environment has degraded very badly due to excessive human interference. In this conference, it was realized that governments all over the world and all the people should work together to protect the environment. The next world conference on environment was held at Rio-de Janeiro in Brazil in 1992. It brings attention of the world towards environmental imbalance, impact of population growth and measures to control it, control of greenhouse effect, ozone layer depletion, effect of acid rain and measures to maintain ecological balance in nature. The Earth Summit made an action plan for sustainable development which is stated in Agenda 21, Chapter 36 devoted for education which states that "Education is critical for promoting Sustainable development and improving the capacity of people to address environment and development issues." The protocol of the United Nation frame work convention known as The Kyoto protocol aimed to fight global warming. The main aim of the protocol is to stabilise the concentration of greenhouse gases in the atmosphere so that it does not interfere with our climatic system. The Copenhagen Climate Council founded in 2007, aimed to create a global awareness about the Copenhagen UN climate summit and Kyoto protocol, arrange constructive talks between government, business circle and science fraternity and generate a source of awareness among the global business leaders that if we tackle the present climatic change, we have huge opportunities for innovation and economic growth. The Montreal Protocol is a treat which is designed to protect the ozone layer by removing those substances which is responsible for ozone depletion. It is believed that if we adhere to this agreement the ozone layer can be recovered by 2050. The purpose of Earth Summit (2011), was to make environmental data and information access to all communities for the benefit of the society. Earth Summit (2012), laid stress on political commitment for sustainable development, make programmes for sustainable development and review new challenges that emerges. Two specific themes on which the summit focussed are: a green economy and institutional framework for sustainable development.

India incorporated environmental concerns in the constitution through 42<sup>nd</sup> amendment in 1976. After the establishment of full-fledged Ministry of Environment and Forests in 1980s, environmental education got momentum and the subject was introduced in schools and colleges across India. Environmental education thus forms the basic and essential component of our educational institutions. The National Curriculum Framework (2005) also recognized

‘protection of environment’ as one of the basic component of quality education towards quality life concerns. Environmental education has a goal and the goal is to develop a world population who is aware of problems associated with the environment and has skills, knowledge, motivation, attitude and commitment to work individually and in groups to find solution to environmental problems and to prevent new ones coming in the way. Thus, the need of the today is to develop a population who has knowledge of environment and its associated problems.

According to North American Association for Environmental Education, environmental education (EE) teaches children and adults how to learn about and investigate their environment and to make intelligent, and informed decisions about how they can take care of it. The various components of environmental education as defined by the US environmental protection agency may be summarized as acquisition of knowledge, understanding, developing sensitivity, critical thinking and problem-solving attitude towards environment and its challenges. It is also related to development of inquiry skills to identify environmental challenges and finally to participate actively in sustainable development. In the era of information and communication technology, environmental awareness is widespread. In spite of knowledge and awareness, environment continues to degrade at alarming rates. Environmental education provided to citizens or masses could not translate in actions which are environment friendly. Environment education should focus on developing attitude and skills in students which make them capable of realizing and solving the problems related to environment. It should develop a sense of commitment and responsibility towards environment. Thus, environmental teaching with strong focus on values can help to bridge the knowledge and action gap. Ethics or Values that we develop from our experiences and our interaction from the people and society are the guiding force of our actions. Values are the dos and don'ts of behaviour of an individual in the society.

Environmental values/ethics is concerned with issues of responsible personal conduct or our moral responsibility with respect to natural landscape, resources, species, and non-human organisms. Environmental ethics refers to an ecological conscience or moral that reflects a commitment and responsibility towards the environment, including plants and animals as well as present and future generation of people. It also refers to the responsibility to understand the environmental consequences of our consumption, and need to recognise our individual and social responsibility to conserve natural resources and protect the earth for future generation. Environmental ethics is basically a human ethics based on social justice for all without discrimination of race, sex, religion, ideology, caste, region or nation. An environmental ethics should be able to specify what should be expected from the environment and what should be given to the environment. Most of the current environmental problems are essentially resulting of people's activities and their attitude toward the socio cultural and natural environment. Historically, individual and societal values have not always been in the best interest of preserving a high-quality environment. The present-day environment crisis demands a change in attitude, in order that initiatives can be taken to rescue the environment from destruction. This can be done only if value based environmental education is infused in curriculum which should seek to influence and change the attitude of students towards environment and instil a stronger sense of responsibility for safeguarding it. School system provides the largest organised base for environment education and action. Teachers are the important factor who is bound to affect this program. It is only the teacher who can link environmental knowledge, its problems and help the students to find the solution for their problems. The curriculum existing in various primary and secondary schools gives opportunity for the students to understand the environment. It is in the hands of the teachers to integrate and develop the awareness and responsibility towards environment among the school students in a natural way while teaching the syllabus. Teachers are the pillar of any education system. They play a major role in behaviour modification of their students. Therefore, if we produce efficient teachers who are able to deliver their duties efficiently and promptly, with sufficient competency, surely, we will succeed in attaining the objectives of Environmental Education. In spite of global efforts being made, still today, a critical world-wide shortage of teachers is felt in the area of Environmental Education. Teachers are lacking with the necessary competencies to effectively incorporate the environmental dimension in educational programmes. The UNESCO Report entitled, “Education and the Challenge of Environmental Problems” noted that “relatively few efforts have been made in any of the regions to supplement the traditional training of teachers, organisers of educational activities, and educational administrators with a view to producing a competent staff for environmental education”. (UNESCO-UNEP International Environmental Education Programme Division of Science, Technical and Environmental Education UNESCO, Paris, France). The report further observed that the implementation of pre-service teacher training efforts in Environmental Education varies greatly from institution to institution and nation to nation. Progress is being made in terms of the quantity and quality of pre-service programmes, however, a much greater effort in the area is needed.

## 2. LITERATURE REVIEW:

A review of related literature shows that there are researches done in the area of environmental education. Lot of work has been done on school students, teachers and curriculum of environmental education. Derevenskaia, O (2014) studied the effectiveness of project method for teaching environmental education to high school students. Some

studies were conducted on teacher's training and environment education. Shah A. & Jehangir S. (2006) discuss the effectiveness of innovative teaching strategies and learning experiences of a facilitator and learner about the environmental course. Sarkar P.K (2012) discussed the need of environmental ethics to solve environmental issues. Nasrin (2012) suggested various values that can be developed among students through the teaching of environmental education. Mathivanan K & Pazhanivelu G (2013) studied the relationship between environmental ethics and participation of higher secondary students in environmental education. Maria M.C (2017) studied the level of environmental ethics in higher secondary students. However, no study have been conducted yet to understand the role of various methods of teaching in teacher education in the development of environmental ethics.

To develop environmentally literate younger generation, we need teachers who will have the knowledge, skills, and sensitivity to properly address an environmental problem in their professional capacity, and to include the environment as one of the considerations in their day to day life. In order to attain the renewed aims and objectives, we certainly need to modify the way in which environmental education curriculum is implemented in the teacher education. The curriculum should give more weightage to the capacity building aspects and development of attitudes and values in the students. Catering to the needs of developing necessary skills, attitude and values in teacher trainees, a paradigm shift is required in the methods and techniques of teaching. We should shift from mere teaching to training and providing first hand experiences to our students. Individual as well as group projects should be assigned to teachers, both in Pre- service and In-service Teacher Training Programs. Moreover, it is necessary that teacher trainees understand their role in managing the environment and enhancing sustainability of earth resources, therefore, they need such a pedagogy that prepares them for this role.

### **3. DISCUSSION AND IMPLICATIONS:**

Approach to teach environmental education is too 'content' oriented and neglect the value development and emotional aspects. Rather than being confined to the narrow corridors of textbook and examination, environmental education should concern itself with the development of 'affective' areas that can be achieved through participation and attitudinal development. This involves providing experiences to the students in understanding the local environment, identifying problems related to environment and finding solutions for them. At the same time, it gives students opportunities in personal and social development also. Environment education is considered as education in the environment, by the environment and for the environment. So, it should be provided through active learning methods. Active learning methods should be used extensively to provide effective learning and professional orientation to the students. Active methods are the form of interaction between students and teachers where two sides interact with each other in the course of classes; students are not passive listeners, but active participants of the process. Active learning methods includes working within the community to solve local environmental problems through projects, problem solving methods, field trips and case studies. It also includes small group discussions on the case studies and problems in the classrooms. Efforts should be made to include experiences of students in finding the solutions of environmental problems. Approaches which could be used to instil value oriented environmental education are:

#### **3.1. Project based learning:**

Project-based learning keeps students' active mentally and physically. The project is a set of specific actions, documents, pre-texts, and the idea to create different kinds of theoretical products or real objects. It's always creative activity. Project method always presupposes, first of all, solution of the problem, and, secondly, it's directed at obtaining the result. Project-based learning allows to integrate the knowledge of students from different areas for the solution of a problem, makes it possible to apply this knowledge in practice. This method focusses on creative and cognitive work done by students to solve a common problem. Project-based learning involves the use of a wide range of problem, research methods, focused on the real practical result. Project technique forms the ability to work with scientific and academic books, learn to focus on major, substantive aspects of the research problem, propose and test hypotheses, defend someone's point of view, and offer someone's views on the issues under investigation. In addition, the project teaches to present the results of work, which is very important, as far as the success of the project greatly depends on the good presentation. In environmental education, project enables learners to understand their environment theoretically, identify problems and try to find viable solutions for them. Immediate contact with their environment sensitizes them towards their responsibility for it. While identifying the problems and its causes, they would realize that how their actions and activities affect the environment and make them careful in selecting their future actions.

#### **3.2. Problem based learning:**

Problem based learning is a teaching method in which complex real-world problems are used as a vehicle to promote student learning of concepts and principles as opposed to direct presentation of facts and concepts. It

develops scientific and logical way of solving problems in the students. In addition to course content, problem-based learning can promote the development of critical thinking skills, problem solving abilities and communication skills. It also provides opportunities for working in groups, finding and evaluating research materials and lifelong learning. In environmental education, problem based learning connects students with the immediate problems in their local environment and develops skills to solve them with solutions from their local environment. It also sensitizes students of the impact of their actions on the environment.

### **3.3. Experience based learning:**

Experience based learning involves the whole student, meaning not just their intellect but also their senses, their feelings and their personalities. It is an opportunity to learn through one's own lifestyles and actions. In this approach, each student learns from his own life and act as their own laboratory. It allows students to actually live the experiment. Experience based learning in environmental education offer a way for students to apply classroom topics like energy consumption, carbon dioxide emission, water quality, choice of food etc. to their own lives and to realize that although these issues may be global or regional, they ultimately have roots at the individual level. For example, a global environmental issue such as the Kyoto Treaty may not seem relevant to students' everyday lives. However, if we ask them to calculate their carbon dioxide output and then suggest ways by which they could reduce it, they will understand their role in global warming. This will make them realize the effect of individual effort in reducing global warming.

### **3.4. Case Studies:**

Discussion on case studies where individual/ community was able to solve the problems related to environment and achieve sustainability through their actions should be included. This will develop positive attitude in the students when they see or study about positive impact of actions of few individuals on environment.

### **3.5. Reaching to the Community:**

Reaching to the community such as visit to places with victims of calamities, social action or volunteer work, site exposure or field trips are the real methods through which attitudes, values, emotions and behaviours are developed among students and they develop positive feelings to engage in environmental protection.

### **3.6. Workshops, seminars, conferences and group discussions:**

These are extremely powerful methods to understand the real environmental problems and explore the remedial measures by throwing light on various associated aspects of environment. Involvement of the students in workshops, seminars and conferences also develops emotions, attitude and interests among learners through inspiring deliberations by the experts of the field

### **3.7. Cooperative learning:**

Cooperative learning means learning together. We all live in communities and we are dependent on each other. Group work, weather small or large instil sense of togetherness and responsibility towards each other as well as for the assignment. These are extremely effective in encouraging students to learn coordination, collaboration, self-expression, group feeling, social skills, collective decision making, leadership and fellowship values which are essential to address various environmental issues collectively showing sense of responsibility.

All the above-mentioned approaches encourage cooperation and collective effort. It exposes students to the real-life experiences and make them sensitive and responsible for the environment by making them aware about the consequences of their actions on the environment.

## **4. CONCLUSION:**

For students and teachers to promote and practice ethics based environmental education, a change has to occur not just in the pedagogy but in the priorities of teacher education institutes. The departments of education will have to promote independence and flexibility to replace control and compliance. They need the support of the school authorities and the cooperation of the staff so that time and space use become enriching and flexible. A fresh system of evaluation is also needed. Most present evaluation ignores the value inculcation and stress on content driven learning achievement and is reduced to a pen and paper exercise. They must provide incentives and supportive policies to help students become skilled and creative individuals willing to make choices and make a commitment for the health of the earth.

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