

Environmental Education: Need and Role in Addressing Current Environmental Problems



Education

KEYWORDS :

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Education, one of the major and important human endeavours has been going through seminal changes. For sure, it is no longer a process of systematic acquisition of knowledge of natural and cultural worlds for the character building of the citizens and the nation. It is now being pursued largely as a means of livelihood- business for an individual as well as for the institutions. Knowledge and skill acquired, and sometimes purchased, are used for a sophisticated living as far removed from nature as possible. Towards this objective, science education is even more useful because science has indeed helped in the production of goods, services and technology. Together with technology, science has certainly helped in the growth of population, urbanization, economy and in meeting the greed of population. The same science especially that of environment tells us that the blooming growth factors have adversely and irreversibly degraded the critical resources of life sustenance such as air, water, land/soil, climate and bio diversity. Therefore, there is a growing concern as how to maintain the earth as a sustainable habitat. The only way this concern can be translated into action is to educate the citizens about the realities of the mother earth in terms of its materials and processes, and how they work to sustain life. A conscious participation to save life on earth calls for a conviction arising out of an understanding of the term nature (Earth). This can come from religion or science, or more practically from **Environmental Education**.

The ongoing environmental degradation has a positive contribution to our knowledge of natural environment with its four components such as solid earth (lithosphere), the hydrosphere, the atmosphere and the biosphere. We have not learnt to some extent as to how the component parts are complexly and inter-dependently inter-connected with the fluxes of materials and energy to sustain life and to evolve together. The complex and interesting interconnections are illustrated by taking water as an example as water is life on earth. The technological evolution, act of evolving brains is a need of hour to meet out our demands and therefore, will continue to evolve. The evolution is primarily all about changing raw material or one from of product to the other more useful product. This can never happen with 100% efficiency and bound to produce/generate some by-products (not needed by us) that are harmful to our environment. Therefore, making people aware about their action and developing attitude of "to act" in them can reduce the production of waste by-products and provide large scale solution for sustainable development on this living planet.

Our planet "Earth" is unique in the entire solar planetary system in terms of the presence of Biosphere/life forms since 4.6 billion years. The habitable aspect of Earth's Environment, to allow the presence of diverse life forms to flourish and evolve, can be traced in geological time scales i.e. billions of years to the evolved life forms of the present day. Natural processes/Nature has maintained the physical attributes of our environment crucial for sustenance of life on planet Earth for example, 1) Average Temperature of the planet has not changed much (17.5 ± 5 °C) over last millions of years, 2) atmospheric composition of the Earth (21 % Oxygen and 78% Nitrogen) has stayed almost invariant, 3) presence of naturally driven food chains and 4) stratospheric Ozone layer for protection from incoming solar Ultraviolet radiations. These entire phenomena are vital for the survival of life on the Earth. Any change in these natural interactions between Biosphere and Physical Environment, e.g. its absence, will decrease atmospheric Oxygen (thousand times less) and substantial increase in Carbon dioxide (hundred times more). The survival of the life on Earth under such conditions will be unattainable or even unthinkable. Change in the environ-

mental conditions is an inherent feature on geological time scale. But with the concoction of industrialization and large scale human centric developmental activities, the magnitude of change has increased and time span has been shifted from geological to human scale. Fuelled by fossil fuel energy, these perturbations, classified as anthropogenic, have become more frequent and they extend over much shorter time span. Inability of the Natural environment to absorb these anthropogenic perturbations have unfolded multitude of local, regional and global environmental challenges to the forefront: (i) Environmental Pollution of air, soil and water (ii) threat to biodiversity and ecology (iii) Global warming, glacier melting, depletion of ozone layer. These manifestations have local, regional and global dimensions which arise on varied temporal scale, depending on the physical environment linked factors of the location. Therefore, it becomes imperative that we protect the vital traits of the Natural Environment for the survival of life.

Earliest records that can be traced, tell that in India, it was realized even by pre-Vedic man, who identified at-least four major components, the Mittra- the Sun, Agni- the Fire, Prithvi- the Earth and Dyu- the Sky, that sustained life and therefore, worshiped them as deities. As the culture advanced to the Vedic age, man expressed importance of environment by singing hymns in its praise and a deep sense of communication with nature. Nature is to be understood as a friend, revered as mother, obeyed as father and nurtured as a beloved child. According to the Indian philosophy all that exists in the universe, whether organic or inorganic, have five constituent elements i.e. Air, Water, Fire, Earth and Space. Everything comes from varying combinations of these five elements and everything ultimately returns to these. These together create nature. Mahatma Gandhi has rightly said, "I need no inspiration other than nature. She has never failed me as yet. She mystifies me, bewilders me, and sends me to ecstasy". Our environment is a set of natural and social systems in which man and other organisms live and derive their sustenance. The environment though invisible has no geographical and ideological frontiers and it is common to all living organisms-man, animals and plants.

The rapid degradation of natural environment is the most dangerous problem of the present day that mankind is facing. Basically, we are here because there is an environment. Every mortal totally depends upon it. From birth to death all our deeds are influenced by nature. It is time to think, how much we take care of it. It's a threatening factor to human being. Ever growing population is one of the basic causes behind this problem. Needs are growing, caring tendency has vanished. Environment provides resources to us, but many are limited and possibly near to cease off. Excessive use of pesticides and fertilizers, fossil fuel burning, biomass burning, destruction of biodiversity, decline in the forest areas, water pollution, water scarcity, air pollution, waste disposal, coastal zone depletion, ground water contamination, human health, wild life conservation as well as melting of glaciers are some of serious issues ahead of nation in the current times. Lack of environment awareness is a major causal factor for rapid environmental degradation as spelled out above.

It is felt that no single step solution exists for such problems rather there can be collective way to first understand these problems and to address them so as life continues on the planet Earth. People have felt the need of such initiatives and the concept of environmental literacy followed by formal environmental education programme were proposed during last century. The potential of environmental literacy as a vehicle to realize the concept of sustainable development cannot be over

emphasized (Knapp, 2000). Environmental literacy is essential pre-requisite for maintaining and improving the quality of natural environment and life as such (Disinger and Roth, 1992). The development and fostering of environmental literacy need, therefore, to be a key in any general education programme. Since its inception these terms have been or is being rethought, redefined and evolved to a considerable extent.

Teachers - more than any other professional group - can probably promote environmental literacy, by virtue of their interaction with society (more specifically learners, parents and colleagues). Teachers at all levels and subject areas have a role to play in this regard i.e. contribute to the development of citizens who possess the basic understanding and skills to make informed decisions in matters affecting the environment and whose personal lifestyle supports sustainable development. Teachers can, however, hardly assist learners to become environmentally literate if they themselves lack environmental literacy. Despite the important role, teachers play in educating students, research into teachers' level of environmental literacy has been extremely limited. The few studies conducted in this aspect have indicated a relatively low level of environmental literacy. An example is a study by Beuthe and Smallwood (1987) which stated that the environmental literacy of Indiana teachers is far from optimal. In addition several researchers, for example, Schreuder (1995), Braus (1995) and Papadimitriou (1995), mentioned that most teachers are not trained to do justice to environmental education. Now the question is; "do our teachers in India have been trained for such teachings"? Very limited research information is available to address this question. Previous studies (Sundarajan and Rajashekar, 1993; Patel and Patel, 1994 and 1995; Patel 1999; Pradhan 2002; Nagra, 2010) on the environmental literacy of teachers in India indicated that environmental literacy level of teachers is not good and vary widely depending upon their level of teaching (elementary or secondary), level of their education (graduate, post graduate), living (urban or rural), sex (male or female) and same is true for the young children. Incorporating EE in teacher education involves deliberating several issues relating to content, learning and teaching methodologies, materials development and capacity building requirements for its effective implementation. Efforts have been made to develop curriculum and other support materials for introducing EE at all four levels of teacher education in the country but results are yet to come. It is time for all of us to understand the concepts of environmental education and realise its aims and objectives for our survival

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