

## Moulding the Young Minds: India's Attempt to Establish Concepts and Execution of Environmental Conservation and Sustainable Development at School Level

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### Abstract

*The present study has emphasized on the role of School Education in environmental conservation and sustainable development. Man plays a vital role in environment and human beings are totally dependent on environment for their existence. But sometimes various activities of human being led to degradation of nature. Thus, schools have to take up the imperative roles and responsibilities in order to help students to develop their knowledge, skills, attitudes, participation and values relevant to conservation and sustainable development. The major thrust of this study has been focused on the essence of environmental conservation and sustainable development, role of school and role of teachers in environmental conservation and sustainable development, different practical work and project activities undertaken by the school. The study also attempts to review the different programs for Schools organized by Govt. of India on environmental protection on focal themes chosen every year for sustainable development. The authors have relied on Secondary data/information to transcribe into the aim of the study. These information/data have been collected and mobilized from the existing research papers, newspaper, books, journals, periodicals and online resources. The authors have also streamlined to identify some of the relatable environmental laws and some of the recent eco-friendly steps taken by Govt. of India for environmental protection and sustainable development that the schools may translate into knowledge and awareness of young minds to develop into responsible citizens.*

**Keywords:** Environmental Conservation, Sustainable Development, School Education, Government Initiatives, Environmental laws.

### Introduction

Environmental degradation indicates an adverse qualitative change in the environment. We know human beings meet most their needs from their immediate environment. Their inventions in science and technological development lead to a sophisticated life for him on the earth which in turn becomes responsible for various environmental problems like disposal of wastes, pollution of air, water and land, deterioration of the habitat, contaminations of rivers, lakes and seas and radioactive pollution. Thus the relationship between human beings and the environment is interconnected in nature. For addressing the various environmental problems, Environmental Education for Sustainable Development (EESD) is emerging as an essential tool to change student's commitment, motivation, stewardship, behaviour and attitudes (UNESCO, 2011). To achieve the goals EESD, the active teaching learning approach is widely recommended by several earlier workers who have found that traditional class room lecture based teaching learning approach have limited effectiveness in helping students to retain information, become self-learners, and develop skills in transferring knowledge and solving problems (McLeish 1968; Davis and Alexander 1977; Saunders 1980; Bonwell and Eison 1991; Gardiner 1994; Fink 2003). Further research demonstrated that when students are involved in active teaching learning process, retention of knowledge is significantly increased (Mackenzie and White., 1982; Grant 1997; Nundy, 1999; Cooper et al. 2000), there is

enhanced motivation and higher-order learning (Kern and Carpenter., 1986) and development of practical skills (Kent et al, 1997). Field based education is one component of active environmental education. There is a strong agreement that fieldwork is advantageous for learning in the biosciences (Davenport, 1998; Baggott and Rayne., 2007), and nature studies has traditionally had strong connections with fieldwork, dating back to early naturalists such as Gilbert White, Charles Darwin and Wallace (Davenport, 1998; Baggott and Rayne., 2007). Experiential learning theory (Kolb, 1984) suggests that students learn more effectively by 'doing' than by 'listening' (active rather than passive rote learning) and this is a major strength of learning in the field where students are involved in environmental projects, data collection and analysis. In addition to the direct educational benefits, fieldwork has been reported to increase confidence and motivation (Smith, 2004; Boyle et al, 2007). The environmental philosopher John Muir (1901) emphasized that the People will act on behalf of the natural world if they have exposure to it, therefore knowledge about it. It is now well established that knowledge about the natural world will influence attitudes regarding the natural world, which will in turn impact one's actions on behalf of the natural world (Goralnik and Nelson, 2011). Therefore, environmental education should be taught to the child at their school stage, so that the environment can be protected from degradation. Children should be given direct experiences in the real environment so that they may develop an awareness and appreciation of the factors and interrelationships operating in the environment, leading to an ecological understanding of man's oneness with their environment (S.S.Ravi, 2011).

### **Objectives of the Study:**

The objectives of the present study are:

- To establish the importance of Environmental Conservation & Sustainable Development amongst school children.
- To lay importance and popularize the concepts in the National Scenario
- To introduce the school children to National Legislative and Judiciary initiatives related to Environmental Conservation & Sustainable Development

### **Method of Study:**

It is a review-based exploration. The study is entirely based upon secondary data. Data have been collected from the existing research papers, books, journals, websites etc., to validate the objectives taken into account. In order to fulfill the objectives of the present review, Schools under West Bengal Board of Secondary Education were scrutinized to find out the roles and actions of the administration and teachers. The strategic vision actually led to accrue into the in-vogue principles and practices of school education in promoting environmental conservation and sustainable development. Recommendations on future prospects are also highlighted.

### **Meaning of Environmental Conservation and Sustainable Development:**

"Environmental conservation" means "the activities that allow individual or commercial benefits but not the excessive use, leading to environmental degradation". Environmental conservation means that the environment and its resources should be used by human and managed in a responsible manner. According to the Dictionary of Environment (McMillan, 1994) "Environmental conservation means the planning and management of resources so as to secure their wise use and continuity of supply while maintaining and enhancing their quality, values and diversity". Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

### **Features of Sustainable Development (SD):**

- SD needs cooperation amongst people from various societies, communities and countries.
- In SD, preserve the productive natural systems that support mankind.
- In SD, people should be encouraged to use renewable resources of energy.
- It is a continuous process.
- SD adopts recycling and reusing technologies to treat waste materials.
- It helps in developing eco-friendly global culture.

- SD adopts environmentally friendly techniques like crop rotation, mixed cropping and bio-fertilizers and manures.

### **Role of School in Environmental Conservation and Sustainable Development:**

Based on different studies as discussed briefly in the Introduction part, it was found that schools are perfect venues for capacity-building and training the next generation about environmental protection and sustainable development. Educating students about environment and the link between energy efficiency and the environment, empowers them to make real differences. Students can make a difference in environmental protection and energy saving at their school and help their parents and communities to protect the environment and save the energy. In school they have the opportunities to learn about the environment, climate changes and relation between energy uses. Schools also have to take up the new role and responsibilities in order to help the students to develop the knowledge, skills, attitudes and values relevant to conservation and sustainable development. Based on several studies researcher suggest that school is expected to discharge the following functions in relation to the conservation of environment and sustainable development. (S.S.Ravi, 2011; Kumar, A. 2015;C. Bangey, 2016. ). These are:

- Developing awareness about environmental problems.
- Organizing seminars, group discussion on environmental issues.
- Organizing environmental awareness programmes in surrounding areas.
- Celebrating “Environmental Day” and others environmental related programs.
- Ensuring cleanliness and healthy school areas.
- Developing good habits among students.
- Organizing tree plantation programs in surrounding areas.
- Formation of “eco-club”.
- Organizing scientific exhibitions on environmental conservation and sustainable development.
- Organizing community surveys on issues related to environmental conservation.

In order to protect and improve the environment, the following instructions should be given to school students:

- Dispose the waste after separating them into biodegradable and non-biodegradable.
- Recycle waste food and biodegradable materials and reuse them.
- Reuse carries bags.
- Do not burn any plastic bags as the smoke contain several gases that affect our environment.
- Send different waste product to specific area specified by local authorities.
- Always use dustbin.
- Avoid unnecessary or wasteful packaging of products to minimize the use of plastics and tins.
- Plant trees to remove, transfer, stabilize and destroy contaminants in the soil and ground water by phytoremediation.
- Observe World Environmental Day on 5<sup>th</sup> June. Students should inform their parents, relatives and friends about environmental problems and develops awareness about it.

### **Role of Teachers in Environmental Conservation and Sustainable Development:**

The teacher is the key to the whole teaching learning process in educational sectors. The most effective and interactive period is the first two stages of education i.e. primary and high school. It is the most receptive stage which can influence, to bring a desired change. The responsibility of doing this lies with the teachers who teach at these levels. A properly planned syllabus and activities appropriately calculated and executed will bring the desired change. Hence all teachers in the school are expected to play a significant role in environmental conservation and sustainable development. Based on several reviews researcher suggests that a teacher should play the following roles in the

conservation and sustainable development of the environment (Kumar, A. 2015, Ravi, S.S. 2011, Chaturvedi and Kumari 2014):

- Encourage awareness about environmental pollution.
- Organize public awareness programs
- Recommend to use of herbicide and pesticide in minimum amount.
- Provide information about the current environmental problems.
- Develop interest among students in the natural environment of their region, state and finally country and create motivation among students about environment.
- Make students aware of the several disease and consequences of air, water, soil, nuclear and chemical pollution.
- Explain environmental issues in simple way to the student through which they understand the importance of environmental resources.
- Organize seminar and workshop on environmental issues like pollution, population explosion and deforestation.
- Correlate different environmental topics while teaching the subject.
- Organize field trips to zoological garden, botanical garden, national park, different polluted rivers and deforested sites.
- Using current theories of learning in selecting, developing and implementing curricular materials and teaching strategies to achieve the goals of environmental education.
- Motivate the students to spread knowledge and skills that would help the society to solve interrelated environmental problems.
- Last but not the least teacher can evaluate, clarify and change the environmental position in the light of new information.

#### **Practical Work and Project Activities Undertaken by the School for Environmental Conservation and Sustainable Development:**

Practical work and project activities undertaken by the school help to acquire knowledge and skill of solving environmental problems and to develop sense of responsibilities regarding environment (Singh 2007, S.N. Pandey 1990). Such activities are-

- Field trips to zoological garden, botanical garden and wildlife sanctuary.
- Organize tree plantation programe in surrounding area.
- Preparing charts showing different common flora and fauna.
- Preparing poster on different types of pollution and different diseases occur by that pollution.
- Preparing charts on global warming and its effect on our earth.
- Drive to keep school premises clean and green.
- Organizing different quiz competition related to various aspects of environment.
- Conducting survey of animals and their modes of living.
- Motivating to create different types of project regarding environmental issues.
- Celebration of Environment related important days
- Creating sustainable habits among stakeholders

#### **National Children Science Congress:**

National Children's Science Congress (NCSC) is a nationwide science communication programme started in the year 1993. It is a programme of National Council for Science and Technology Communication (NCSTC), Department of Science and Technology, New Delhi. It is a forum where children of the age –group of 10-17 years, from formal school system participate to exhibit their creativity and innovativeness and more particularly their ability to solve a societal problem experienced locally using method of science. For instance, this year the theme was Science for Sustainable living, a State Level Congress, West Bengal under the auspices of 28<sup>th</sup> National Children's Science Congress 2020 through virtual mode. Such initiatives are impactful in developing skills and will for eco-friendly environment.

#### **Environmental Laws:**

Environmental protection needs suitable legislation at all levels- local, national and international. Since most of the acts aimed at preventing pollution or cleaning the polluted environment entail costs, fixing the responsibilities and implementation of laws is necessary to combat these problems. In this paper, the authors tried to point out some of the major environmental laws because it is very essential to aware the young minds with these so that they inculcate the environmental values and have the conviction and responsibility towards a safe and sustainable environment. As the Schools host frequent events on environment protection and related celebration, the information on environmental laws during such events would certainly will bring about positive change in the students and transform them into responsible citizens. Some examples of such laws are:

- National Environmental Policy, 2006
- Environmental Protection Act, 1986

Some of the important rules framed under these acts are:

- The Environmental (protection) Rules, 1986
- The Hazardous Wastes (Management and Handling) Rules, 1989
- The Hazardous Micro-Organism Rules, 1989
- The Recycled Plastics Manufacture and Uses Rules, 1999
- The Noise Pollution (Regulation and Control) Rules, 2000
- The Ozone Depleting Substances (Regulation and Control) Rules, 2000
- Air (Prevention and Control of Pollution) Act, 1981

Besides the above-mentioned procedural rules framed under the parent Act, there are various quasi laws such as:

- Emission Standards for Automobiles for Prevention and Control of Pollution.
- Guidelines for Environmental Appraisal of Industrial Projects.
- Guidelines for Environmental Impact Assessment.
- Environmental Guidelines for Formulation of River Valley Project
- Environmental Guidelines for Thermal Power Plans.

The following are some other important Environmental and Pollution Control related laws:

- Air (Prevention and Control of Pollution) Act, 1981
- Water (Prevention and Control of Pollution) Act, 1974
- The Forest Conservation Act, 1980
- The Environmental Protection Act, 1986
- National Forest Policy, 1988

#### **Some of the Recent Eco-Friendly Steps taken By Govt. Of India:**

1. *Swachh Bharat Abhiyan*: The Swachh Bharat Abhiyan is India's biggest cleanliness drive ever. The campaign covers as many as 4041 towns and aims at cleaning streets, roads and infrastructure. It was officially launched on October 2, 2014 at Rajghat, New Delhi.
2. *Clean Ganga Mission*: This is a wonderful initiative taken by govt. of India to clean Ganga.
3. *National Air Quality Index*: Focusing on bringing down soaring pollution levels in the country, present P.M launched India's first national air quality index (NAQI) in April 2015. The Indian Institute of Technology in Kanpur, will house the main server of the NAQI which will monitor air quality levels in 10 cities throughout the country. The NAQI will simplify air quality rendition and will help raise awareness about alarming levels of air quality across the country (source: [www.pib.nic.in](http://www.pib.nic.in)).
4. *Shauchalya Yojna*: It is a part of Swachh Bharat Abhiyan. Present P.M has claimed to make India an Open Defecation free country by 2019 by building 12 crore toilets in rural India.
5. *Mount Everest Ascent*: Although the Mount Everest cleaning drive is essentially an Indian Army undertaking, authorities have made clear it that that draw inspiration from Swachh

Bharat Abhiyan by India Govt. A team of Indian Army climbers have set off on a mission to bring back at least 4000kg of non-biodegradable waste from the world's highest peak.

6. *Bijli Bachao*: It literally translates into 'save electricity'. This project encourages using home appliances that consume less of electricity and contribute more towards conserving it.

### Discussion

From this review, the authors posit that school and teacher play an important role in dissipating environmental protection and sustainable development. While teacher teaching the subject and involving in different co-curricular activities, he or she can highlight the negative impact of environmental degradation. Students should be made to understand that small birds, insects and plants have also a role in healthy environment and ecological balance. In this way the teacher becomes an effective and powerful means in preparing the students, their guardians and the members of the community to maintain a healthy environment for the benefits of the present as well as the future generations. It is also asserting that National Children Science Congress plays an important role for nurturing creativity and innovativeness of the young minds and relates the learning of science to the environment around. It can be supplemented with hands-on activities and also stimulate scientific temper through use of internationalization of the method of science i.e. observation, collection of data experimentation, analysis and then arriving at building own value system. The pertaining laws discussed above should be articulated in simple languages in the science/environmental studies curriculum for effective outcomes. The future of science education and school curriculum has to more strengthened in view of transcription of environmental laws and protection acts. It is perceived that there is a dearth of information of articulating basics of environmental issues in the grassroots level, i.e., among school children. Notwithstanding, promotional and participatory activities on environment conservation forms a regular and integral practice in schools. Thus, Schools must promulgate and mould young minds towards environmental conservation and sustainable development, as it is said, 'catch them young'.

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