



The profound importance and influence of Environmental Education to obtain sustainability - - A systematic review

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Abstract

Over the past three decades, there has been a notable evolution in the importance and urgency of Environmental Education (EE). Climate change, widespread pollution in different forms, biodiversity loss, excessive waste generation and other environmental issues are mostly due to anthropogenic activities. EE is alerting people how their actions affect the planet and empowering them to take responsible decisions. In India, National Education Policy (NEP 2020) has bolstered compulsory Environmental Education, incorporating the concept of sustainability into the curriculum. Sustainability, a long term goal to achieve environmental, social and economic balance at present, without compromising the ability of future generations to meet their own. In 2015, The United Nations introduced 17 Sustainable Development Goals (SDGs) to end poverty, protect the planet and ensure prosperity for all by 2030. Education for Sustainable Development (ESD), which is revised form of EE empowers learners of all ages with knowledge, skills, values and attitudes. So that people can contribute to achieve these Global Goals. For the survival of our planet we must learn about our planet—education is the only way to find this learning.

Keywords: Environmental Education, Sustainability, Sustainable Development Goals, Education for Sustainable Development (ESD), curriculum

Introduction:

Environmental Education (EE) holds unconditional relevance. It is one of the effective conservation tools, which can modify and influence the behavior of individuals towards natural world and its resources. The United Nations Educational, Scientific and Cultural Organisation (UNESCO) described “Environmental education is a way of implementing the goals of environmental protection. It is not a separate branch of science but lifelong interdisciplinary field of study.” In an intergovernmental conference in Tbilisi (1977), commonly known as Tbilisi Declaration, UNESCO provided this conceptual framework on Environmental Education for the first time. More recently, the concept is upgraded into Education for Sustainable Development (ESD). It is mainly focused to develop critical thinking and problem solving skills among individuals and practice sustainable lifestyle in society.

Environmental Education in India:

The Supreme Court of India, in 1991, ordered the central and state governments to ensure environmental education in all educational institutions. It was the judgment in the petition titled M.C. Mehta vs. Union of India. Further in the year 2003, EE is established as compulsory, infusive and project-based component from primary to higher education by Honourable Supreme Court of India. The vision of establishing EE programs in school, colleges, universities and technical institutions to build a path towards sustainability. In National Education Policy (NEP 2020) via NCERT and UGC guidelines the concept of sustainability formally

integrated in EE, promoting Mission LiFE (Lifestyle for Environment) and green skills. The National Council of Education and Research and Training has developed a model curriculum of EE and a resource book titled “Towards a green school” on education for sustainable development for elementary schools. It initiatives transform educational institutions into sustainable, eco-friendly environments that reduce environmental impact, save costs and improve health. These schools adopt a ‘whole school’ approach integrating sustainability into the curriculum, infrastructure, and culture--such as using solar energy, water recycling, and waste reduction to foster eco-conscious behaviours in students.

Youth can serve as catalysts for sustainable development. Through them, concerns can be effectively communicated to the policymakers and society. Hence, EE is not merely a component of science teaching, but a vital element of civics, moral and liberal education. It generates critical thinking and problem solving skills among individuals. Climate change, different forms of environmental pollution, biodiversity loss, waste segregation and management -- these issues can be mitigated with sustainability measures.

Aims and objectives of EE:

The Sustainable Development goals (SDGs) are 17 global goals adopted in 2015 by the United Nations as part of the 2030 Agenda for Sustainable Development. These goals are mainly based on three pillars, such as: Environmental sustainability, Economic sustainability and Social sustainability. Social and Environmental sustainability can be achieved through ESD, which will show the path of Economic Sustainability. In addition, ESD aims to help learners—

- Developing sense of awareness among learners
- Understanding global challenges
- Developing critical thinking and problem-solving skills
- Adopting sustainable lifestyles and behaviors
- Participating actively in building sustainable communities.

‘Environment’ –is a term well known to everybody and it is second form of the term ‘Nature’ commonly. But people don’t comprehend the significance of nature and its resources that enable our survival. The growing environmental hazards and their long-term adverse impacts highlight the significance of EE to tackle environmental challenges for a sustainable future.

Levels of Environmental Education:

In the year 2003, the Supreme Court of India mandated Environmental Education as a compulsory subject at every educational level. Over time, EE has been systematically integrated in to the curriculums as a separate subject at school as well as at higher education levels. Environmental Education can be offered in several ways depending on where, how and why learning happens. The three main levels are: Formal, Non-Formal and Informal way to educate learners. All these three levels are aimed to raise sustainability at all levels of society.

A. **Formal Environmental Education:** This method is typically oriented for schools, colleges and universities. The role of formal education sector is crucial as it is the gateway for young pupils to understanding, analysing and interpreting environmental challenges. EE has been introduced in the curriculum in different levels, considering the age and understanding ability of the learners. The subject in formal mode mainly develops skills and values among pupils with an emphasis on practical learning in the real natural world. Starting with the **Primary level**, where child understand his surroundings, the natural world and its components. Gradually, over time he learns do’s and don’ts to keep the balance in natural world and wise use of natural resources by building up awareness. He starts to evaluate real life situations as per his understanding level and realise the necessity of conservation. For example; a child is learning water must be saved, while brushing or bathing he is being conscious about this fact. In this level, audio-visual modes of teaching, nature study, field visits impacts a lot in the mind of a child.

In **Secondary level**, the teaching method should be more prominent towards understanding real life situations, problem identification, and finding out probable solutions. Quiz, debates, poster competition, field trips, exhibitions, role playing—these are some methods to involve learners in

understanding real life challenges. In this level, the curriculum is more science based and action oriented to improve critical thinking.

The objectives of EE in primary and secondary levels are-

- Understanding the importance of science in daily life
- Understanding the concept of natural world and natural resources
- Understanding the concept of various natural phenomena.
- Understanding the interaction between human and natural world
- Understanding the interaction between human and other living organisms.
- Building awareness and sensitivity towards various matters affecting natural resources, for e.g.: pollution
- Understanding social responsibility
- Understanding the concept of sustainability
- Incorporating the lesson of sustainable lifestyle in daily life
- Generating values to live in harmony in heterogeneous society
- Developing the skills in critical thinking and problem solving
- Understanding socio economic aspects influencing sustainable development

Overall, the vision of environmental education in these levels to teach the multidisciplinary approach of environmental studies, to emphasize the importance of the concept sustainability and its fruitfulness in near future for the conservation of nature and natural resources. Natural resources and their conservation, environmental pollution, biodiversity and their conservation in local level, health and hygiene, rapid population growth, waste management and proper disposal – these topics are part of EE in these two levels. Learners adopt the sense of awareness, consciousness and become responsible citizen of country. Not only that, they spread the essence of their learnings in the society and orient others to adopt sustainable practices.

The Supreme Court of India, in 1991, ordered the central and state governments to ensure environmental education in all educational institutions. This was the introduction of Environmental Education in **tertiary level**, that is; college and university level. In this stage, knowledge regarding sustainable development and conservation is vital. Learners in this age group are youth, and can play significant role in society. Field based practical work to understand real life scenario like biodiversity loss, environmental pollution, waste disposal and segregation, ecosystem protection etc. is important to build up sustainable society. Students at this level decide their career option, choose various dimensions of Environmental science, such as Conservation Biology, Environmental Engineering, Ecology, Environmental Impact Assessment (EIA), Waste Management etc. Knowledge they gained in their Primary and Secondary level helps them in their decision. Though, students who are not directly associated with environment related career path, also become eligible to take environment-social responsibility. In graduation level, environmental education is mandatory for all students irrespective of their courses. This tertiary level is significant for understanding student's view on environmental issues and policies. Scope and desire for environmental research work also initiate in this level.

Other than Government, Non-Governmental Organizations (NGOs) play vital role in spreading environmental education in tertiary levels. Certain courses, trainings, and workshops they used to arrange to promote the concept of sustainability. Students learn different skills, such as; eco-friendly packaging, reducing waste through recycling and many more. In this way, their knowledge and understanding used to get a shape. These non-degree programs are very useful after certification for their future orientation.

B. Non-Formal Environmental Education:

It is structured and goal-oriented form of Environmental Education which takes place outside the formal school system. It is flexible, practical and often community-based. It exists alongside the formal educational systems in curricular and extracurricular levels, in vocational training, public awareness programs. For example, in schools, students are learning environmental science as science subject, with this, they are participating in different programs organized by 'Nature Club' or 'Eco-Club' of the institution. The key objectives of Non-Formal EE are –

- ✓ To reach people of all ages
- ✓ To increase environmental awareness
- ✓ To encourage sustainable behavior
- ✓ To promote community level participation
- ✓ To build problem-solving skills for environmental issues
- ✓ To develop positive and protective attitudes toward nature
- ✓ To help local communities for solving environmental problems with training

Non-Formal Environmental Education comes in more impactful way with different audio-visual forms. For example- posters, street-plays, documentaries, seminars, slides, demonstration etc. In India many NGOs are directly associated with environmental protection. Forest, one of the most important natural resource is in the peak of devastation. Deforestation for different reasons is really alarming environmental issue. Many protests, movements, campaigns have happened over the past decades. In these protests, participation of local tribal communities and forest dwellers especially women was very significant. They played crucial role to protect forest wealth. Through this Non-Formal mode of Environmental Education, these local people got trained, aware and conscious. Joint Forest Management (JFM) is a participatory approach to forest conservation in which local communities and government share responsibility for protecting and managing forest. Local communities shows involvement to regenerate the degraded area of forests, get employment through training, and promote sustainable use of forest resources. Even they used to get forest-based benefits like consumption of Non-Timber Forest Products (NTFPs). With JFM, illegal logging and forest encroachment is aimed to reduce. Forest Protection Committees (FPCs) act spontaneously with proper training and guidance by forest department.

c. Informal Environmental Education:

It happens naturally through daily life, experiences, community activities, media and personal exploration. Visiting National parks, Sanctuaries, Museums, Science centers, Zoological parks helps to gain practical knowledge about nature and its resources. People choose to learn as this form of education is voluntary and self-directed. This is the form of learning by doing and observing, such as; participation in community clean-up events, recycling programs etc. not syllabus based or target oriented. Informal form of education can happen at any age, only people's interest matters.

It is essential to provide compulsory courses on environmental issues relevant to their specialization to probationers selected for the IAS, IFS, IPS and cadets of three wings of the Armed Forces. Most of the entrance exam in central and state level featuring environmental science in the syllabus, considering as a vital section within general studies. All Governments in the states, Union territories, universities, schools, colleges, academic institutions and voluntary organisations organise suitable activities on World Environmental Day, i.e., 5th June of each year.

Key audience for Environmental Education initiatives:

The target population for Environmental Education in India is broad and multi-tiered, because environmental issues intersect every sector of society. The key audience are:

- School students: primary and secondary level (age 6-18). Integrated Environmental Studies and Science curriculum, focused to build awareness, values, attitudes, basic skills for sustainable living.
- College and University students: across various disciplines, such as; science, engineering, management, social sciences etc. compulsory form of Environmental Education based on projects, field works to generate problem solving skills.
- Specific community and local people: rural and urban communities for example, farmers, women groups, tribal communities, forest dwellers, youth-clubs for local resource management, sustainable practices in daily life, conservation strategies innovation etc.
- Government officials and Policymakers: Municipal Corporations, Panchayets support informed decision making and policy formulation to find solution for environmental issues. Example: waste segregation and management, pollution control, afforestation and many more.

- Industry and corporate employees: different industries, manufacturing units, factories must have knowledge about Environmental Impact Assessment (EIA) during manufacturing, processing, discharging, mining, energy consumption etc. Their focus should be on corporate environmental responsibility.
- General people: they must be aware about environmental issues around them formally or informally. Their awareness, consciousness and active participation is crucial to understand the alarming situation.
- Specific occupational: agriculturists, architects, scientists, engineers are working on specific environmental problems.

Limitations to implementing environmental education:

Although significant success has been achieved in the implementation of Environmental Education, a gap in motivation remains within a large section of society. Some reasons are mentioned below--

- lack of attitude, skills and commitments towards environmental hazards
- lack of preparedness to tackle immediate environmental problem
- Limited exposure to field-based and experimental teaching methods
- Lack of formally trained teachers for this concept
- Overloaded science curriculum leaving little space for Environmental Education, reducing its significance
- Lack of practical work facilities, equipment to understand the real scenario
- Inconsistent funding for NGOs
- Limited community participation
- Resistance to behavioural changes (waste segregation, water conservation)
- Conflicts between cultural practices and environmental conservation
- Inconsistent monitoring and enforcement for Environmental Education policies
- Lack of coordination between education departments and environmental agencies
- Consumerism and rapid urbanisation generating lethargies to follow sustainable practices
- lack of jobs in environment field
- Environmental concerns may be seen less urgent compared to economic issues
- Technological gaps are prominent in environmental learning resources between urban and remote areas
- Finally, knowledge does not always convert into action

Conclusion:

Environmental Education is a method to familiar people about present and upcoming environmental issues. It is a life-long learning procedure right from the childhood. In Sustainable Development Goals, goal 4 focuses on education “ensure inclusive and equitable quality education and promote lifelong learning opportunities for all”. An integrated part of education system Environmental Education is creating informed, responsible citizens day by day. Gradually, majority of people will practice green habits, support responsible production and consumption and adopt sustainable lifestyle for the future generation. Environmentalists had found positive mind-set and green behaviour among people beyond general nature loving persons. Government, non-governmental organisations, corporate sectors, policy makers, stakeholders are being more concerned and focused to perform environmental and social responsibility. Hence, overcoming all the limitations in the path EE, the dream of sustainable planet will get success one day.

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