CHAPTER 1

INTRODUCTION
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Education for environment has been identified as a lifelong process of multi-disciplinary mode of learning, meant for assisting people in order to comprehend as well as appreciate environment and its impact. Such education develops knowledge, awareness and understanding about environment, awareness, balanced and positive attitudes towards it along with skills enabling students to assess environmental conditions. It is subject to prepare us for a future that is predictably going to demand for ecologically sustainable life. The approach empowers people in terms of maintaining as well as restoring natural systems of Earth. It further support for the wellbeing of generations in future through the provision of promoting sustainable mode of lifestyles. As a result, it needs enough understanding about the balanced state of social, environmental and economic developmental structures. The concerns are about respective and offering right value to the past achievements and then support the process of preservation of environment that is related to the past achievements. The entire community is responsible for these proceedings and is not just a matter of curriculum and management schools for handling resources. People in general should not cause environmental damages and must consider the life related basics of the future generations.

Environmental Studies (or the EVS) are integral part of school education for last forty years. Problems and issues about the environment are integrated under diversified disciplines or relevantly are introduced as a very important subject. As for instance, at primary stage, the education about environment gets introduced in the form of EVS. At upper primary and further at secondary level, it gets incorporated in the form of different subjects, especially the sciences and social sciences. The current thesis is looking into those methods that can assist in the teaching process of EVS in the primary classes. Since, environmental education originates from various proceedings on a long term basis; there are many approaches that are followed within the nation school level.

ENVIRONMENTAL EDUCATION: MEANING

It is the means to promote comprehensiveness and awareness about the relationship of man and all his life related activities with nature. The basic concern is about developing necessary sense of responsibility for conservation, preservation and environmental improvement managed ‘from’ and ‘for’ the entire environment of Earth. The process is a kind of learning
meant to ‘form the environment’ as the environment gets used in the form of a toll to collect knowledge, conceptions and skills about determined academic disciplines. There is the need to develop skills, attitudes and right evaluation of capabilities to manage property and develop environment gets identified as ‘education for the environment’.

WHAT IS ENVIRONMENT?

“Environment” has been derived from French word ‘Environner’ that stands for encircle or surround. The term environment gets defined as:

1. Surround conditions of an organism or relevantly a group of organisms, or

2. Complex cultural or social conditions effecting particular individual or respective community, in general.

"Environment" illustrates "natural" condition that is comprised of both non-living and living things that are all around and got the factors, elements and conditions with impact over development and growth of some organisms. Environment comprises of biotic as well as abiotic elements influencing observed organism. The factors identified as abiotic like temperature, light, water, air (gases) in combination with biotic factors (living species). In general, environment changes in due course of time and so many organisms can adapt these changes. Still, the range of tolerance of all species and environmental exposure are the elements that limit tolerance range of the organisms that are representing stress of environment. Surroundings as a whole for any living organism have got forces of nature and all the other living things, offering conditions for growth and development and to manage damages and dangers.

ENVIRONMENT: DEFINITIONS

Some of the important definitions for environment are:

‘The term environment is used to describe, in the aggregate, all the external forces, influences and conditions, which affect the life, nature, behaviour and the growth, development and maturity of living organisms.’ - Douglas and Holland

‘The environment is everything that affects the individual except his genes.’ - Anastasi
‘A person’s environment consists of the sum total of the stimulation which he receives from his conception until his death.’  -- Boring

The aforementioned definitions specifically notes that contents of environment are of diversified forces like intellectual, political, economic, physical, cultural, moral, social and emotional. Environment has been identified as the amalgamation of external forces, condition and influences affecting nature, life, growth and behavior, maturation and development of living organisms.’ All these environmental definitions are part of environmental education that appears as the foremost reaction towards superficial and simplistic modes of improvements. However, the same has in-depth and comprehensive entity in the educational approach. It remains as multi-disciplinary life process and is in relation with entire biosphere.

Environmental studies is identified as a multi-disciplinary science as it holds different studies such as physics, chemistry, medical science, agriculture, life science, sanitary engineering, public health, etc. as a whole it is about physical phenomena happening with the environment and research over reactions, sources, effect, transport, and physical fate of biological species that are affected by human activity. It is a lifelong approach for learning multi-disciplinary domains that can assist in appreciating and understanding environment and determined connections of the same along with their impact. The entire approach develops knowledge, awareness and understanding about the balanced and positive attitudes towards environment. It adds skills in students for being able to assess environmental conditions.

Environmental studies prepare human for an ecologically sustainable life in the future and further empower us in restoring and maintaining natural systems of Earth. The basic idea is to foster enough support in the creation of wellbeing for the upcoming generations through the mode of promoting a sustainable lifestyles. It demands the knowledge to attain a balanced state among social, environmental and economic developments. It includes the act of valuing and respecting past achievements and supports for the preservation of environment.

ENVIRONMENTAL STUDIES: IMPORTANCE

The proceedings of environment studies are subject to enlighten human beings in particular and deals with concerns of conserving and protecting indiscriminate pollution released by us into environment. Currently, there are innumerable issues that are creating complex environmental situation. These are increasing every day and are threatening mankind’s existence on earth. These are the issues that are analyzed with derivation of effective
suggestions related to Environment Studies that turns up significant and can be noted under following categories-

1. Environment Issues: International Concerns:

Environment issues such as global warming and depletion of ozone layer, marine pollution, acid rain and biodiversity should not be considered as just a concern to an individual nation, but are global issues that should be tackled with cooperation and efforts from all over the world.

2. Problems led by Developments:

The consequences of development are showing positive results by Industrial Growth, Urbanization, and Agriculture and Housing, Transportation Systems, etc., but at the same time is creating havoc to nature and ecology all over the world. The Northern countries are managing to move all their industrial and urban garbage and ‘dirty’ to the Southern hemisphere. With the development of western countries, enough ignorance has been noted towards the impact of environmental pollution, which is not practical or every desired, even though developing world are following the same.

3. Pollution with explosive increase:

According to world census 1 among 7 people is from India. This leads to the estimation that 16% of total population of the world and just 2.4% of total land area are facing heavy pressure over currently available natural resources. For the experts of agriculture, identification of soils under health problems such as deficiency of organic and micronutrients content, salinity and destruction of the structure of the soil are significant aspects.

4. Alternative Solution:

Developing countries in particular must derive some alternatives for handling environment related issues through:

(1) The goal of ultimate development with environmentally sustainable and sound development.
(2) The common goal of citizens of earth.

(3) The distant goal from developing countries for over-consumption of wasteful societies in the “developed” countries.

5. Save Humanity or Extinct:

In the current situation, it is the sole responsibility of humans to save humanity from getting extinct. Due to human activities for constricting and harming environment and further participating in depletion of biosphere, there is the need for recovery strategies.

6. Wise Developmental Planning:

Human sustenance and survival are interrelated. Resources are subject to withdraw, get into relevant proceedings and finally the use of the product under proper synchronization with cycles of ecology in any developmental plan by human. Concentration should be on ecologically factors for environmental sustenance and development.

7. Report by Misra

Misra (1991) identified four ecological principles. These are holism, ecosystem, succession and conversation. Holism is the real base meant for ecology. Within the structure of hierarchy levels, these principles appear with interacting ecological units that are discussed as:

Individual<population<community<ecosystem<biome<biosphere.

Further, Misra (1991) identifies four demands related to environmental management. These are impact of our actions on environment, value system, sustainable developmental design and environment education. Under the proceedings of such planning, India made contributions to UN Conference on Environment and Development (UNCED) or the “Earth Summit”, Rio de Janeiro, Brazil on the 3rd to14th June, 1992.

GLOBAL ENVIRONMENTAL: MAJOR PROBLEMS

- Global Warming

It is a kind of process where the average temperature increases in the atmosphere as well as
oceans of Earth. This difference has been noted since later part of 19th c. and gets projected on a continuation approach. From the early part of 20th c., average temperature of Earth's surface has risen 0.8°C (or 1.4 °F), along with about 2/3rd increase since the year 1980.[2] The climate system is getting warmer without any interruption. The scientists are assured of 90% and more about this instance as the result of increasing mode of greenhouse gases under concentrations that is caused by the activities of human, especially those of deforestation and burning of all kinds of fossil fuels. The derivations as attained by national science academies in various industrialized countries.

Global temperature is increasing and is leading sea levels to rise. This will change pattern and amount of precipitation, with an expansion over subtropical deserts. The trend of warming turns up strongest in the Arctic and is continuing the mode of retreat of glaciers, sea ice and permafrost. Moreover, there are frequent conditions of extreme-weather, such as heat waves, heavy rainfall and droughts, species extinctions caused by regimes of shifting temperature and changes within crop yields. The process of warming varies in different places in different ways, with projections getting robust in some of the places. In case of increase in mean temperature of the globe to 4°C (or 7.2 °F) over preindustrial levels, limiting human adaptation might exceed in many places of the world, yet limits meant for adaptation that is for natural systems, probably will exceed. Thus, ecosystem services related to the livelihoods of human must be preserved.

- Depletion of Ozone Layer

It has been identified as a layer of Earth's atmosphere that has higher mode of ozone (O₃) concentrations. Still, "relatively high," turns up very small against ordinary oxygen, and less than the amount of 10 parts/million. Average concentration of ozone is just 0.6 parts/million. This layer is basically in the lower part of stratosphere from 20 to 30 km (or 12 to 19 ml) approx., above Earth. Still, there is the state of variation in the thickness on season as well as geographical basis. Though ozone layer concentration is very small, still it is significant for life as the same absorbs Sun’s ultraviolet (UV) radiation that is biologically harmful. Breaking down of ozone within stratosphere, turns into ozone molecules that cannot absorb these kinds of ultraviolet radiation. As a result, dangerous and unabsorbed ultraviolet-B radiation is reaching the surface of Earth. Levels of ozone
over northern hemisphere are decreasing by 4% every decade. An estimated approximate range of 5% of the surface is in north and south poles with declination with ozone holes. In the year 2009, it was nitrous oxide (N₂O) that gets identified as largest ozone-depleting chemical that is emitted by human activities.

- **Acid Rain**

Acid rain is a popular term referring to the deposition of wet (rain, snow, sleet, fog, cloud water, and dew) and dry (acidifying particles and gases) acidic components. Distilled water, once carbon dioxide is removed, has a neutral pH of 7. Liquids with a pH less than 7 are acidic, and those with a pH greater than 7 are alkaline. “Clean” or unpolluted rain has an acidic pH of over 5.7, because carbon dioxide and water in the air react together to form carbonic acid, but unpolluted rain also contains other chemicals. The problem of acid rain not only has increased with population and industrial growth, but has become more widespread. The use of tall smokestacks to reduce local pollution has contributed to the spread of acid rain by releasing gases into regional atmospheric circulation. The principal cause of acid rain is sulfur and nitrogen compounds from human sources, such as electricity generation, factories, and motor vehicles. Coal power plants are one of the most polluting. The gases can be carried hundreds of kilometers in the atmosphere before they are converted to acids and deposited. In the past, factories had short funnels to let out smoke but this caused many problems locally; thus, factories now have taller smoke funnels. However, dispersal from these taller stacks causes pollutants to be carried farther, causing widespread ecological damage.

- **Deforestation**

Deforestation is one of the most potent factors at work in emerging and re-emerging infectious diseases. Through the process of clearing forests and subsequent agricultural development, deforestation alters every element of local ecosystems such as microclimate, soil, and aquatic conditions, and most significantly, the ecology of local flora and fauna, including human disease vectors. The effects of deforestation on ecosystems and human health are diverse and have taken place for many decades, though both the rate and geographic range have increased markedly over the last 30 years. Deforestation is driven by a wide variety of human activities, including agricultural development, logging, transmigration programs, road construction, mining, and hydropower development.
• **Loss of Biodiversity**

The concept of biodiversity refers to Earth’s foundation towards life. It is about the critical functioning of ecology and ecosystem. It includes all those dimensions through which human beings get services and products for their livelihood. Elements like oxygen, fresh drinking water, food, medicines, fertile soil, protection from natural disasters, stable climate and related environmental recreations, are all integral to the ecosystems. However, biodiversity offers much wider domains and as such we rely on it to attain health and security. Any adverse condition can affect social relations of human and can offer freedom and scopes of diversified selections. Some of the basic causes attributing towards the loss of biodiversity and are noted below:

- **Invasive Species** – All those plants/animals that switched over their habitat for successful survival are called invasive species.

- **Habitat loss** - Housing, agriculture and industry are regularly spoiling the current habitats of natural lives. Human developments are more inclined with decreased and destruction of natural ecosystems. There are many animals that are noted within some range, which is subject to get maintained to live. In case they lose the access, they will get significantly altered.

- **Pollution** - Rivers, oceans, lakes, air and lands are getting rubbish bins for getting rid of wastes collected from industries. Plastic dominates this category of garbage and causes excessive troubles. It is subject to kill/injure innumerable marine lives and in many cases birds by accidental entanglement/ingestion of content with mistaken belief of seeing plastic as food. As for instance, sometimes plastic bags get misidentified as jellyfish by many birds and even human.

- **Climate Change** – there are innumerable biotic lives that are unlikely to exist under climate change, yet for others there will be no place for their habitat.

- **Exploitation** – Human has reduced the population of fish, drastically, hunted and killed many whales. This has led to the verge of extinction as well as destruction of many forests along with severe harm to ecosystems. The practice of blast fishing reduces coral reefs in sea. It is the way hereby the whereby dynamite gets placed to catch large amount of fish. In general, coral reefs get devastated through this activity and remain prominent in all the underdeveloped countries from years.

• **Pollution of Water**
On a global assessment, 1.9 million numbers of children are attaining deaths. These deaths are caused by diarrheal diseases that are from the unsafe drinking water, having not enough provision for sanitation and poor hygiene. This has been estimated as the 2nd largest cause for the mortality of children, after the infections of respiration, as in the case of 15% deaths noted globally and 18% are from under-developed or developing countries. Instances of chronic diarrhea during the early childhood phase contributes towards decreased intake of food as well as absorption of nutrient, state of malnutrition, reduced mode of resistance towards infection and condition of physically impaired and development of cognition with long-term consequences meant for the income and attainment of education.

- **Desertification**
  The approaches through which the forests are lost are leading to deforestation and thus erosion of soil and its capacity to hold water.
  Deforestation is a man-made phenomenon for personal reasons such as agricultural land, furniture, selling trees or get charcoal for fuel, etc. Thus, civilization stands as the chief reason for encroaching woodlands and forests. Cutting timber remains as the basic matter of concern. Vast tropical areas under forests are lost almost every year.

- **Waste disposal**
  "Hazardous waste" poses substantial/potential threats towards environment and public health. These wastes are from different fields of physical states like liquids, gaseous or solids. These are special kinds of wastes as that same is not liable to get disposed by common such as other by-products in daily lives. Physical state of waste, process of solidification and treatments are of great significance.

- **Rapid Growth of Population**
  The rapid increase in the population all over the world in last century is due to different kinds of birth and death rates among different human communities. Human population is subject to increase by a billion in next 10 years. This will be a summation of the entire world’s population with that of China. Increase of human population will affect every single human being and his environment and economy. Current population growth rate
is already a burden and restrictions to the factors are liable to affect the pattern of this
growth for a better future.

Rapid increase in population leads to diversified consequences. The poor countries are
actually contributing a lot to it. Rates of high fertility are historically strong in
correlation with poverty, and as such higher count of childhood mortality. Falling of rate
of fertility get connected to developed living standards, increased expectancy towards
life and lowering mortality of infants. Poverty and overpopulation are connected
integrity with diseases and deaths. 25 Tightly packed populations are living in houses
with no sanitary and are on the edge and risk of natural disasters and various diseases.

- **Depletion of Non-renewable Energy**

  Non-renewable resource has been identified as natural resource that are restricted from
  being grown, reproduced, generated or implied as per scale with sustainability of rate of
  consumption, as these resources get depleted, it will lessen in terms of availability for
  future. These resources are consumed faster than the way nature can actually create the
  same. Nuclear power (uranium), fossil fuels (petroleum, coal and natural gas)
  and aquifers are such examples. Metals in particular are the most important example in
  this context. As against these resources, timber (harvested sustainably) are renewable
  resources

- **Water and Food Shortage**

  The concern food security is meant for availability of accessibility of food. A family is
  noted as food-secure as the members are not living in hunger or are with the fear of
  starvation. World Resources Institute states that global per capita production of food is
  increasing in terms of substantially meant for past few decades. In the year 2006, a
  report by MSNBC stated that overweight people have surpassed the count of
  undernourished population. 1 billion and more population are with overweight and 800
  million are undernourished. BBC (2004) stated that China is the most populous nation
  and got epidemic of obesity. In case of second-most populated nation, India 30 million
  suffer from hunger during mid1990s and a total of 46% children were underweight.

**PUBLIC AWARENESS:**

Public awareness is necessary for the attainment of formidable results attained through
Environmental Degradation. In case the same is not retorted and reformed through considered measures, life extinction will get ensured. Amidst diversified challenges of the environment, the need is to get acquainted with all these challenges for an eco-friendly status.

**DETERMINED CHALLENGES CAN BE NOTED AS:**

1. **Population Growth**

   Thousands of millions of population is further is growing at the rate of 2.11% every year. More than 17 million are adding up every year and is offering excessive pressure on the availability of natural resources, reducing developmental gains. Thus to have control over population is being the greatest challenge of the time. Though many proceedings are followed to control population, there is still room for developed status with relevant contribution of women in particular.

2. **Poverty**

   India has rich land, yet got poor people. Environmental degradation and poverty are interrelated. A huge amount of the population depends directly on natural resources for basic living needs, like fuel, food, shelter and even fodder. Almost 40% people are BPL (below poverty line). Instances of environmental degradation affects adversely over poor population for the resources with immediate environment. The basic challenge is to balance poverty with environmental degradation with two facets of the same coin. Growth of population is a reason for poverty. Therefore, very poor child turns up to be an earner and also a helper related to global issues with little relevance to earn his livelihood.

3. **Growth of Agriculture**

   People should get acquainted with sustainable methods and increase growth of agriculture, along with environmental damages. There are high yielding variations are causing salinity of soil and damaging physical soil structure.

4. **Ground Water**

   Groundwater must be used in a rational way. Wastes of community, industrial effluents and above all chemical fertilizers, such as pesticides are polluting the surface water. This is affecting quality of groundwater. Ground water must be well restored with quality maintenance of the rivers and all the other water bodies, such as ponds and lakes. It is a
definite challenge and thus implication of suitable strategies for the purpose of consecration of such water, for safe drinking water and cleaning water bodies.

5. Impact of Development on Forests

Forests are catchments for rivers. However, due to increased demand for water, harness plan for mighty river by means of large projects of irrigation are made. This actually will submerge forests; relevantly displacing local people and damaging vegetation and wildlife. This is the reason the dams of Narmada, Bhagirathi and similar places are of scientific and political debate.

Indian forests are shrinking for many centuries, pressurizing agriculture and related sectors. Huge vegetative areas are now wastelands. Many tribal communities are living in forests and offer respect to vegetation and wildlife for sustenance. It is important to understand the roles played by these people in the process of restoring as well as conserving forests. Modern skills and knowledge about forest department must get integrated with traditional approaches and experiences led by local communities. Determined strategies in this concern are about the joint management of vegetation must get evolved in a planned way.

6. Land Degradation

Current estimations show that from a total of 329 mha area of land, 266 mha are right for production and 143 mha are agricultural land and 85 mha suffers from different levels of soil degradation. A total of 123 mha, are completely unproductive and 83 mha is forest land, with half of it denuded under different degrees. 406 million livestock must get supported by 13 mha or a minimal of 4% land that is pasture land, with overgrazed status. Therefore, 226 mha, with 175 mha or 66% gets degraded in different degrees. Wind and water erosions lead to degradation of 150 mha that must be prevented.

7. Institutions for Reorientation

Enough awareness should be generated toward oriental institutions, infrastructures and attitudes in order to suit current demands. These changes must follow traditional resource structures of India, especially for managing and educating the population. Change must be followed by education, in terms of developing proper attitudes, administration and institutions as it affects views towards technology related resources as well as developments.

8. Reduction of Genetic Diversity

There need to be suitable techniques that need to be adopted to conserve genetic diversity.
Currently, majority of the wild genetic stocks are vanishing from nature. Several wild life species including the Asiatic Lion have to deal with the loss of genetic diversity. The populace is being segregated due to sheltered location networks including sanctuaries, national parks and biosphere reserves. Hence, the scope of one group reproducing with another is reducing. To lower the reduced genetic diversity several corrective steps are being undertaken.

9. Ev1l Consequences of Urbanization

The Indian urban areas are being inhabited by almost 27 per cent people. Several environmental issues that need immediate notice are the result of rapid urbanization and industrialization. Indian slums are inhabited by more than 30 percent urban residents. A mere 21 out of 3,245 towns and cities in India have the presence of mere partial or total sewage and treatment services. Thus, dealing with this rapid urbanization is a major issue.

10. Air and water Population

Majority of our industrial plants are using outdated and population technologies and make shift facilities devoid of any provision of treating their wastes. A great number of cities and industrial areas that have been identified as the worst in terms of air and water pollution. Acts are enforced in the country, but their implement is not so easy. The reason is their implementation needs great resources, technical expertise, political and social will.

Again the people are to be made aware of these rules. Their support is indispensable to implement these rules.

Hence, it can be recapitulated that:-

- It is crucial to comprehend the fact that there is a symbiotic relation that is shared by the natural environment and the man-made environment.

- It is crucial to inform the public of the daunting results of the Environmental Degradation (at both domestic and international levels)

- There is a possibility that life would become nonexistent if remedial steps are not undertaken

- Every person and liable and responsible for protecting the environment.

Thus, one needs to spread the message to protect and conserve the environment at all levels.
RATIONALE FOR ‘ENVIRONMENTAL EDUCATION’ AS DISCIPLINE

A discipline is generally accepted in sense of the word means a field of study which has a well-defined content and a technique of its own together with a unique system of values. It is implicit in this concept of a ‘learner discipline’ that it constitutes an important part of man’s cultural heritage and that it pursuit results in a specific enrichment of the human mind.

Environment education is a powerful instrument to maintain ecological balance that equips human beings with awareness, knowledge, skills, attitudes and commitment to improve the quality of environment.

Academically ‘Environmental Education’ is unquestionable related to and can be assigned a place under the comprehensive discipline of Education. It has been shown to be an independent entity, however it can only to a limited extent be described, understood and explained but it appears to have wide relevance for the recent problems.

Rationale related to environmental education in early childhood is based on two determined premises. These are – a) children need to develop respect as well as care for nature and environment in the first few years of his/her life or remain at risk for not developing these kinds of attitudes (Tilbury, 1994; Stapp, 1978; and Wilson, 1994);

b) newly-emerging early childhood is about the environmental education that is subject to reflect increased note of awareness as "environmental experience in the critical phase of the early learning years can determine subsequent development in environmental education" (Tilbury, 1994, p. 11) and preschool should "prove to be critical for the environmental education of the child" (Tilbury, 1994, p. 11).

Rationale for initiating environmental education in the time of early childhood follows positive interactions along with nature as integral to healthcare of child (Cobb, 1977; Carson, 1956; Patridge, 1984; Miles, 1986/87; Crompton & Sellar, 1981; Wilson, 1994; Sebba, 1991), enhancing knowledge and lifestyle (Wilson, 1994). Children being close to nature relate their
lives to natural sources and feel the joy, wonder and awe of nature. They get nurtured by nature and gain "sources of human sensibility" (Wilson, 1992, p. 348).

As stated by Plato, experiences with nature foster emerging sense of wonder in the child for knowledge and (Cobb, 1977) for imaginative sources. Cobb states that through wonder we can understand the world better. It helps in gaining impetus and direction for environmental education during early childhood. This offers special education to the child and turns as a power tool for the development of environmental status and quality.

E.V.S. GENESIS: PRIMARY LEVEL

Conditions In India

Environmental related education in the school education gets organized as well as identified in India, since 1970. The document—"The curriculum for the ten year school-A framework developed by the national council of educational research and training (NCERT ") , New Delhi, 1975; notes environmental education as integral to school education. It enumerates this issue under instructional objectives as well as content.

It states, “In the primary classes the science should be taught as environmental studies, in classes I and II as a composite course including both natural and social environment and later on as two subjects viz, environmental studies I (natural sciences) and environmental studies II (social science). The purpose should not be to stuff the minds of the children with facts and information, but to sharp their senses, to enable them to observe their environment and to enrich their experience.”

Introducing environmental studies at a tender age aims in creating a backbone of entire educational system. In case quality related to primary education gets bound to development besides primary stage with the provision of being trained teachers and teaching methods with updated results. For the developmental features and to meet the educational need of the child at primary classes (with 6 to 11 years) have major recommendations like schemes, to be implied at school level.
ENVIRONMENTAL POLICY

Environmental policy is deliberately implied or restricted for managing human activities for preventing, reducing or mitigating harmful effects over nature and its resources and assures changes led by man-made tools without harming humans.


Education is definitely an honored system in Indian society. Great freedom movement of India realized the need for education and in managing struggle for independence, with emphasis on its unique importance towards national development. It was Gandhiji, who formulated basic educational scheme for the establishment of harmonized manual and intellectual works. It was a great development in making education relevant to everyone’s life. Other national leaders offered enough contributions to the process of developing national education prior to independence.

National Policy on Education, 1986

According to National Policy on Education, 1986, environmental education must be an integral part of education system. This policy is meant for the protection of environmental conditions and to understand its value, and so should be part of the curriculum at every possible level of education.

The parliament approved the National Policy on Education (NPE) in May 1986. In May 1990, a committee was established with Mr. Acharya Ramamurti as the Chairman to reconsider the NPE and make suggestions to alter the same. The report was submitted by the Committee in December 1990. Another committee was set up in July 1991 at the behest of the Central Advisory Board of Education (CABE) with Shri N. Janardhana Reddy, Chief Minister of Andhra Pradesh as Chairman, to study the alterations in NPE after studying the Ramamurti Committee report and other pertinent developments that impacted the Policy, in addition to making other pertinent suggestions to the NPE. This report was submitted by the committee in January 1992. The CABE acknowledged the report in its meeting that took place on 5-6 May, 1992. The CABE has made some suggestions in the policy while overall supporting the NPE.

Despite adversities, the NPE has met with success. It articulated a wide structure to direct the advancement of education in totality depending on a comprehensive appraisal of the entire range of the educational scenario and being framed on the guidelines of a national agreement. This structure is extremely pertinent. On the other hand, the advancements during the past some years and experience in the execution of the Policy have led to the requirement of few alterations. The necessary changes have been detailed in the article "National Policy on Education, 1986 - Revised Policy Formulations" put forth on the Table of the House. The report made by the CABE Committee on Policy has also been tabled.

**NPE 1986 (as modified in 1992)**

It states that the “protection of the environment” is a value which along with certain other values, must from an integral part of the curriculum at all stages of education.

The policy states:

“There is a paramount need to create a consciousness of the environment. It must penetrate all ages and all sections of society, beginning with the child. Environmental consciousness should inform teaching in schools and colleges. This aspect will be integrated in the entire educational process.” (Govt. of India, Dept. of Edn.; Ministry of HRD, New Delhi-Published in 1998)
MEANING OF E.V.S.

Amalgamation of words such as environmental literature in environmental content and educational approaches are used for E.V.S. however, for semesters, Ed, ES (as per national curriculum E.V.S.) and E are also considered. ‘A’ stands for diversified meanings, yet remain synonyms and relevantly interchangeably, at times. As per our considerations, EE, ES and EA will be checked for relevance as well as importance in the domain of teacher training. Haque states:

“Environmental studies is an approach through activity based on the child’s physical and social environment, which leads to the progressive development of attitudes and skills required for the observation, recording, interpretation and communication of scientific, historical and geographical data.”

Many scholars like Helliman and Saxena, Evans and Young, used E.S, E.V.S {or the Environmental studies} synonymously. Concepts related to Es, E.V.S remains prevalent in reference to the content as considered in the school education. Determined curriculum meant for environmental studies gets developed by NCERT, New Delhi. For a course of class III to class V, the syllabus of E.V.S. follows basic skills of computation, knowledge and communication related to environment. Core relevance is on learning by enquiry. This is way through which physical and social environments are noted within the resources.

E.V.S.: AIMS

Aim of E.V.S. (or the Environmental Studies) lays relevance on the developing the global population aware and get concerned about current issues of environmental loopholes and problems offer scopes to develop skill, knowledge, motivations, attitudes and commitment towards work on an individual as well as collective ground for the attainment of solutions and preventing the world of any new problem. Thus, Environmental Studies must remain as an integral portion to entire process of education and practical problems should be dealt with core concern and remain in the interdisciplinary or multidisciplinary feature. Notable EVS goals are-

1. Fostering clear understanding about social, political, economic and ecological inter-dependence in both rural and urban areas.

2. Offering people with the scope to attain value-based knowledge, attitudes, skills and commitment to improve and further protect environment.
3. Creating innovative behavioral pattern for people and society for environment.

**E.V.S.: OBJECTIVES OF CURRICULUM**

Students are subject to develop:

- **Understanding and Knowledge of:**
  - Ecosystems’ nature and function and the way it gets interrelated,
  - Environmental impact on people,
  - Roles played by politics, community and market forces in the domain of decision-making,
  - Ecological principles for sustainable development, and
  - Scopes of career with environmental conditions

- **Attained Skills:**
  - Implementation of technical expertise in the context of environment
  - Assessing and further recognizing problems of environment
  - Communicating about these problems and creating awareness
  - Resolving such problems
  - Adoption of practices and behaviour towards environmental protection

- **Attitudes and Values:**
  - Life on Earth
  - Appreciating cultural heritage
  - Committed to environmental conditions with long-term solutions

**E.V.S. objectives are categorized under –**

- **Awareness:** assisting people for creating awareness and sensitively towards entire environmental condition and related problems.
- **Knowledge:** assisting people in gaining varied experiences as well as acquiring preliminary understanding about the environment and related problems.
- **Attitudes:** assisting people in attaining feelings and values for environment.
- **Skills:** assisting people in gaining skills in terms of recognizing environmental problems and resolving them.
- **Participation:** offering scopes to people in making active participation at every level while resolving environmental problems.
E.V.S.: IMPORTANCE

EVS enlightens human about the need to conserve and protect the environment and be aware of:

- Issues of environment with international relevance
- Problems that cropped due to continuous developments
- Explosive pollution growth
- Emergency for alternative solution
- Saving humanity from the state of extinction
- Wise planning to attain development

E.V.S.: BENEFITS

- Conserving energy and rapid depletion of natural resources
- Increasing economic productivity
- Imparting enough knowledge for managing waste, disposal and treatment
- Developing social responsibility for protecting environment
- Managing enough awareness in order to control population
- Developing values and attitudes about the interdependence of man on nature manage sustainability.

E.V.S.: GOALS

- Developing teaching materials and further aiding the sector of formal education.
- Encouraging non-governmental associations for improving state of awareness
- Promoting environment education by current scientific/educational/research institutes.
- Ensuring development of manpower and training in environmental education
- Mobilizing awareness to preserve and conserve environment.
ENVIRONMENTAL EDUCATION PROGRAMMES

Global socio-ecological issues:
Some of the key global socio-ecological issues that brought about environmental awareness and influenced policy processes include: inadequate supply and availability of fresh water, rapid population growth, poverty and inequality, food shortage, depletion of tropical forests, loss of biodiversity, pollution, desertification and many more. Scoffham (2000: 2005) has summed up these issues as follows:

All over the world the environment is in crisis. The issues are complex and varied. They include pollution, urbanization, acid rain, and loss of wildlife, nuclear waste, the ozone hole and global warming. Whether we are well informed or not, we are all aware that something is amiss. The message is beamed to us via television documentaries and news bulletins; it appears as headlines in daily newspapers and is chronicled in detail in books and journals. The problem is how to respond. These problems came about as a result of human impacts on the natural environment as activities were carried out to make a living or secure more resources for the future, economic growth, leisure and recreation. Human activities resulted in increased threats to the earth’s resources and to the health and stability of its societies. Due to technological advancement, industrialization, improvement in health facilities for some nations, and globalization, the human impact upon the environment and its resources has become not only significant but rapid and extremely serious, justifying the need for informed decisions and education policies (UNEP, 2002). The rate, scope and approach to 16 developments with associated environmental impact have brought about escalating risks and threats to humanity. The scale of human responses relating to responsibilities and accountability for ecological sustainability needs to increase, and education has been identified as a tool for such response (Smyth, 1999). The environmental impact of human activities on Earth has brought about increased public concern and a demand for caring about the future of the planet. The global community is increasingly displaying pro-environmental behaviors in the face of complex interrelationships among issues affecting the global environment. This global environmental awareness has been characterized by debates about what to do and how to do it for over three decades. One of the solutions seems to be centered on transforming education to address the growing socio-ecological injustice, as almost all impacts are too linked to human behaviors and social and economic practices (UNESCO, 2005). Environmental education policy is one area of possibility for transforming education
Global and Regional historical events influenced environmental education policy discourses worldwide including in southern Africa.

GLOBAL EVENTS INFLUENCING ENVIRONMENTAL EDUCATION POLICY DISCOURSES

The history of global environmental education policy-making processes could be traced back to the 1972 Stockholm Conference. The purpose of the conference was to create a playing field for both the rich and poor world to act collectively to address the socio-ecological crisis. The Stockholm Conference did not only put the issue of environmental education policy on the global agenda, but shaped international opinion and resolved to enhance cooperation through the formation of the United Nations Environmental Programme (UNEP) which together with UNESCO (UN Education, Scientific and Cultural Organization) founded the UNESCO-UNEP International Environmental Education Programme (IEEP) launched in January 1975. Since its inception the IEEP has sustained its publication project, Connect, an international newsletter promoting discussion and the elaboration of policies and strategies for the development of environmental education at local, national, regional and global level (UNESCO, 1977). However, despite the fact that the Stockholm conference came up with outstanding declarations, events were limited particularly in Africa and other parts of developing 17 worlds. Most of the events and gatherings were in Europe and America. Africa, however hosted a number of meetings dedicated to environmental concerns and education in 1974 in Kenya and Egypt to promote an understanding and active involvement in environmental education processes (Pace, 1996).

Environmental education policy statements emerged from both the 1972 Stockholm Conference and the 1975 Belgrade Environmental Education international workshop. The Belgrade workshop which came as a follow-up to the Stockholm Conference formulated the Belgrade Charter (1975). This was a milestone international event that acknowledged global collective efforts to combat socio-ecological injustice and reiterated environmental concerns associated with rapid development and its negative effects on the natural environment. The Charter framed environmental education aims, objectives and guiding principles that continue to be points of reference today in environmental education policy discourses. It has been observed that The Charter rejected the fragmentary approach to environmental problem
solving and advocates a ‘new global ethic’ necessitating a change in priorities and behavior of individual citizens. This change in behaviour and value systems can only be achieved successfully through environmental education addressing, through formal and informal channels, all the different sectors of the population. (Pace, 1996:6). The Belgrade Charter recommendations symbolized another phase in the development of environmental education and influenced global environmental education policy processes. Instead of leaving the recommendations to the conference delegates to implement, plans were put in place to make regional follow-ups after the workshop. As a result five regional meetings were held following the Belgrade workshop. Four meetings were held in 1976 in Congo (Africa), Thailand (Asia and Oceania),

The United Nations Conferences on Environment Stockholm June, 1972:

This conference laid emphasis over the concern of environmental quality and created the UN Environmental Programmed. The core emphasis was on international programmers for environmental education.

RECOMMENDATIONS WERE MADE IN REFERENCE TO GOVERNMENTS, UN SECRETARY-GENERAL AND UN FOOD AND AGRICULTURE ORGANIZATION. THESE ARE NOTED BELOW:

1. Identify conservation as the major instance for any programme on genetic resources, especially being treated separately as:

   a) They belong to different subjects under different priorities and programme;
   b) They serve all kinds of different purposes;
   c) They need different expertise, facilities and techniques;

2. For plant germ-plasmas (as in Agriculture and Forestry), there is the need to equip and further organize regional and national conservation centers for genetic resources:

   a) Centre as National Seed Storage Laboratory, USA and Vavilov Institute of Plant Industry, former USSR;
   b) Establishment of separate working collections from basic collections; as in plant as well as breeding stations and get widely distributed;
c) Three specific classes conservation of genetic crop resources are:

   i. High-yielding varieties, in current and superseded course;
   ii. Primitive varieties as in traditional pre-scientific phase of agriculture (plan improvement’ genetic treasuries);
   iii. Mutations being induced through radiation/chemical sources;

   d) Species improving environmental conditions, as sedge for the stabilized sand dunes, that must be conserved;
   e) Wild/weed crop species and wild species with potential use, especially in rangelands, new crops, industry, etc. must be added;

3. For plant germ-plasmas (as in Agriculture and Forestry), there is the need to maintain gene pools as noted among wild-plants in natural communities. Thus:

   a) Primeval forests, grasslands and bush lands with essential forest genetic-resources must get recognized and further protected by right legal and technical provisions; reserve systems in many countries, strengthening international way of protecting and making materials and tools available as desired;
   b) Conservation of all those species related to aesthetic, medical or with research value;
   c) Biological reserve Networking as declared by UNESCO (as in Man and the Biosphere Programme) must get feasibly designed to protect natural communities;
   d) Protection of nature might turn impossible or uncertain. In such cases seed storage or collection of living in provenance trials/botanic gardens should get adopted;

4. Full implementation of FAO Panels of Experts’ programme over the resources of forest gene in 1968 and plant-exploration as well as introduction, 1970;

5. For Animal germ-plasmas, feasibility and desirability of international way of preserving breeds of animals:

   a) Such endeavor can constitute major effort over the scope of a single country. Adoption of FAO turns up to be a logical executor. Close assistances and cooperation from Governments will be mandatory. However, IUCNNR (International Union for Conservation of Nature and Natural Resources) can take over the responsibility for
the available wild species, with assistances from FAO, Man and the Biosphere Programme and Governments;
b) Such aspects must include methods of research in terms of storing, preserving and transporting germ-plasmas;
c) Determined approaches to maintain gene pools over aquatic species must be developed;
d) FAO Working Party Meeting recommendations over Genetic Selection and Conservation of Genetic Resources of Fish, 1971, must get implemented;

6. For micro-organism germ-plasmas, there is the need for proper fund and support of some large selected regional collections.

**Un-Energy, Knowledge Network: The UN Environmental Programmes, 1972**

In current scenario, environment is on political map, as U.N.E.P or United Nations Environment Programme, came in action in the year 1972. It turned up to be the main caretaker and voice for highlighting environmental issues in the UN and promoted wise application and sustainable improvement of global environment. Contributions of UNEP are noted even catalyst, educator, advocate and facilitator in the environment related concerns. It aimed in offering leadership as well as inspires partnership to care environment. It laid emphasis on the collection of data, creating awareness informing and further enabling nations as well as peoples in terms of developing life quality without compromising the environmental conditions of future generations. On a worldwide basis, UNEP programme include – assessment of local, regional, national and international conditions and further follow the trends; improve environmental instruments; offering strength to institutions for attaining wiser modes of environmental management; offering facilities to transfer technology and knowledge for sustainable mode of development; and further developing newer ideas, mindsets and partnerships in private and public sectors of the current society. UNEP acts in accordance to the partners’ breadth. His helps in gaining effective results. Concentrations are led on UN entities, national-level governments, various non-governmental and international organizations, civil and private sectors of the society.

**International Workshop on Environmental Education, Belgrade (1975),**

EE attained international recognition in UN Conference on Human Environment by the year 1972, Stockholm, Sweden. As per the points of Recommendation 96, EE is the base to deal
with environmental issues on international periphery. In the year 1975, it was emphasized in International Environmental Workshop, Belgrade, Yugoslavia. Participants at the workshop of UNESCO (United Nations Educational, Scientific, and Cultural Organization), proposed a specific global structure for initiating environmental education, through Belgrade Charter. This charter with the proposal for environmental education gets generally accepted by professionals from respective fields. According to the Charter,

*Environmental education, properly understood, should constitute a comprehensive lifelong education, one responsive to changes in a rapidly changing world. It should prepare the individual for life through an understanding of the major problems of the contemporary world, and the provision of skills and attributes needed to play a productive role towards improving life and protecting the environment with due regard given to ethical values.*

Basic aim of the environmental education is to improve international population about the concerns of environmental education and related problems. It aimed in the expansion of skills, knowledge, motivations, attitudes and commitment towards individual work and further act collectively to attain solutions and prevention of new hurdle.

**Newman**

According to Newman (1981), there is a three-fold categorization of programme related to environmental education that follows following disciplines:

1. **Environmental Studies**- it deals with environmental disturbance and the aspects that minimize the relevant impacts by means of social changes (as in social science).
2. **Environmental Science**- it is about the way soil, air, water and organisms are harmed or damaged by human and follows scientific standard for safe, clean and healthy human life, along with natural ecosystem (as with natural and physical science)
3. **Environmental Engineering**- it is about the technical approaches for minimizing pollution and further assessing environmental impacts (as in Engineering Sciences).

**International Conference on Environmental Education, Tabilisi, USSR (1997)**

On a specific note, this conference considered a land map in relation with environmental education. It has been declared that there will be proclamations in order to defend as well as develop environmental conditions for current and upcoming years. This is a very imperative goal led upon mankind. Conferences adopted illustrated environmental educational programme.
Fourth International Conference on Environmental Education or Tbilisiplus30

This conference held in Centre for Environment Education, in the city of Ahmedabad, in India, from 24th to 28th Nov. 2007. It was 4th conference for environmental education, after the 1st international conference of Tbilisi (USSR); 2nd conference was in Moscow in the year 1977; and 3rd was in Thessaloniki, Greece, in the year 1997. UN declared the entire decade from 2005 to 14 as "Decade of Education for Sustainable Development" (or DESD). This conference played the basic role in attaining sustainable development in the field of education for environmental reasons. Delegates and participants from all over the world tried to connect relevance of environmental education and the importance of Education for Sustainable Development. They actually examined developments related to environmental education from the 1st conference that was 30 years back, and established global agenda for DESD. It turned up to be the base of sharing practices as well as ideas over the process of initiating environmental education in the world.

Enough interested participants were noted in the workshops about the topics like "Teacher Education" and "Education for Sustainable Development" research at DESD, "ESD and Media," "DESD Monitoring and Evaluation," "World Heritage Sites" and "Man and Biosphere Reserves" in the form of learning sites for all round development of environment, "Education for Sustainable Consumption" and "Floods and Disaster Reduction".

EFFORTS OF NCERT, TOWARDS E.V.S.

The NCERT, an autonomous institution of the M.H.R.D has been one of the pioneer institutes in the country actively engaged in developing model curriculum and instructional material for all stages of school education major Initiatives taken by the NCERT as follows.

Development of Syllabus and text book for different stage of school education. The idea of introducing Environmental Studies at the primary stage was conceived by the council for the first time in 1977 and since then the syllabi and text books have been revised during 1987-89 and again during 2001-2004. The NCERT developed a national curriculum framework for school education. The framework raised major curricular issues related to quality improvement at all stages of the major shifts in this regard is to create environment studies as one area where Science and social studies are not compartmentalized into components rather
presented in an integrated manner.

The NCERT has developed modules for the pre-service training by districts institutes of education and Training (DIET) in the form of four modules, one each for the northern, southern, eastern and western regions of the countries.

All the journals, especially the quarterly journal school science published by the council frequently includes articles on topics related to environmental and environment education.

The NCERT in collaboration with international agencies like UNESCO, UNICEF, UNEP, World Bank, Common wealth secretariat has organized a number of international, regional and national level workshops, seminars, conferences and meetings on various dimensions of environmental education during the last four decades. The NCERT has also developed pre-service and in-service training modules for school education under contact with UNESCO.

As per the directives of the Honorable Supreme court, the NCERT has developed a model syllabus on EE {Environmental Education} for all stages of school education and the same has been published under the title environmental education in schools. (June 2004).

**E.V.S. IN OTHER COUNTRIES**

An environmental study is a new and an integral component of school education in almost all countries in the world. However, there are large variations in the form and format of E.V.S. its content and approaches in different countries. In a majority of cases, the environmental component have been infused with the curriculum of different subjects of study in schools except at the pre-primary and primary stages where it is taught as a subject in most of the countries .These variations are largely due to the system of education and control mechanism arising due to differences in prevalent political and administration structure in different countries. In spite of these variations there are many similarities as may be evident from the brief resume have presented on the salient features of programme concerning EE (Environmental Education) schools of some countries.

**USA**

As environmental education is considered to remain in an integrated form in the curriculum, there are results of positive impact over the students in achieving the tasks in science and in reading (very effective), social studies and mathematics. It is the same research that derived
that schools that are actually teaching environmental studies as core elements within the integrated context, further demonstrates:

- Reduced mode of discipline as well as problems related to classroom management;
- Increased in the sense of enthusiasm and engagement for learning; and,
- Attaining greater amount of pride and accomplishments among the students.

There are researchers who consider that environmental education can enhance and employ critical thinking and relevantly basic life-skills among the students. In their report (2000) Environmental Science and Engineering for the 21st Century, National Science Board, and National Science Foundation established the significance of environmental education in the process of learning among students. According to the 2005 Report to Congress by National Environmental Education Advisory Council about environmental education in the USA, “Environmental education with its emphasis on critical thinking, interdisciplinary teaching, and learner achievement is also helping to meet educational reform goals.”

**Environmental Studies is a Critical Tool for 21st c. Workforce:**

Huge American population believe that environment will turn to be a dominant issue and a common challenge by 21st c. The reason is the increasing global population, pressurizing the resource margins of Earth and its ecosystems.

The National Science Foundation’s Advisory Committee for Environmental Research and Education confirmed this in a 2003 report, noting that “in the coming decades, the public will more frequently be called upon to understand complex environmental issues, assess risk, evaluate proposed environmental plans and understand how individual decisions affect the environment at local and global scales. Creating a scientifically informed citizenry requires a concerted, systematic approach to environmental education…”

**CHINA**

E.V.S. has been a significant component of education system in china but it is not an independent courses. Chinese languages as extra curriculum. Teachers often make more use of books, newspaper and pictorials rather than video programme. It is difficult to get good quality books on environment.
COUNTRIES IN THE EUROPEAN UNION
Eleanor strokes and others in London school of economics and political science have conducted a study on the status of E.V.S.in the school system of the countries of the European Union in 2001. The study was commissioned by the environment Directorate general of the European commission. These statics include Belgium-Flemish and French Communities, Germany, North Rhine Westphalia, Thuringia and U. K –England, Whales and Northern Iceland and Scotland.

The study encompassed various dimension of E.V.S. for different stages of school. Education is being practiced in the number of states. Apart from other issues, it also focused on the approaches being followed for the teaching learning of E.V.S. to the study, at the primary level, in 14 out of 19 countries/regions. E.V.S. is taught as embedded in other subjects, at the lower secondary level E.V.S. is taught as embedded in other subjects and countries/regions.

ENVIRONMENTAL EDUCATION AT PRIMARY LEVEL

Environmental education starts at home and in its immediate neighborhood. Manipulative skills are developed through helping in the home and at play, regarding personal hygiene and problems of food and water contamination. In rural areas it is easy to develop sensitivity to the cycle of seasons and the elements of nature. A child’s perception of the environment develops into a hybrid consisting partly of formal schooling in nursery schools, temples, churches and other pre-primary institutions and partly of informal education at home.

In the past two decades some nursery and kindergarten schools equipped elements of social interaction, hygiene and nutrition and introduced it through organized play and co-operative activities. Formal environmental education was introduced as a subject in primary school in India through National Museum of National history (NMNH) - Ministry of Education of Ministry of Environment, forest and wildlife. It was also introduced as an added component or existing subjects0hygiene, nature study and population education. Jain (1976) described the incorporation of social ethical and environmental values into Biology in India’s elementary and secondary schools. Likewise, a number of authorities grappled with the problems of developing curricula for primary schools and several studies took the module approach to introducing environmental collection into primary schools.
At the primary level, integrated general science curriculum is offered, and one of its variants covers, eleven themes, Houses, Land and People: Who live in them, things we eat and drinks, ‘Clothes we wear’. Things which help us work, ‘How we live and mix in communities’. Who help us’? ‘Over school and its neighborhoods’. ‘The people who help us’. ‘How we travel and communicate’ Our earth and sky above it’ and ‘things we hear and see’; Moral education and religious education also find room in the primary school curricula in so far as they bear on the environment. In the primary schools, emphasis is placed on the gradual evaluation of values and behavior favoring the protection and improvement of the environment. This integrated with in-Schools and our-school environment educational activities, making maximum use of the community school environment.

The role of the teacher among others, i.e. to
(a) Arouse the student’s interest in their environment and to raise challenging problems in connection with it.
(b) Discuss the approach to problems to topics. It is to be noted that the diversity of the environment required each for teacher to frame his teaching to suit local conditions.

TEACHING LEARNING STRATEGIES OR METHODS BEING ADOPTED FOR TEACHING E.V.S AT PRIMARY LEVEL-

Operational Definitions of the Study

TEACHING METHODS

The processes that are employed to attain information of the truth are known as the teaching methods.

“In scientific language the term method is used to designate the road that must be followed to lead the discovery of truth.”

- According to Charles Guide

The teaching techniques employed by the early childhood teachers either individually or mixed with other techniques to improve the learning by the children in different scenarios to ensure their total development are the teaching techniques or teaching policies.
To ensure that the subject matter teachers have total knowledge pertaining to their subjects, they need several teaching abilities to be successful; the teachers can be receptive to their students’ requirements if they employ reflective customs and associations (Jangua 1995) while they enhance the development of the students development (Learman, Saxena, Singh and Gupta 1995).

Off late, the focus of teaching has moved from official oration to social populace of the students in the educative procedure. Contemporary psychology had highlighted the significance of the institutional character of the learning procedure and this has resulted in both learning and teaching being distinguished as social actions. There has been innovation of novel methods which are produced in modern schools and colleges. These methods allow students to study in a socialized setting and provide them chances to create and master their capabilities, aptitudes and outlooks essential for social engagement.

So as to fulfill the challenge of E.V.S and to attain its aims the initial objective for the teachers will be to comprehend the teaching learning policies extremely evidently.

TEACHING STRATEGIES

We as teachers give efforts for creating a kind of environment, where the students get the chance to participate at the most and can use their best abilities. Among all the challenges, a notable one is that of offering positive mode of environmental learning within the classroom. As every student has unique intellectual and physical abilities, their perceptions and demands are all innovative in initiating the learning process.

- Focus is led on theories, concepts, ideas, relationships and generalizations.
- Students offer ideas in various ways, like drawing, acting and creative writing.
- Arranging gifts for students in order to work over independent kinds of projects.
- Arranging gifts for students in order to select and take subjects at an early stage.
- Encouraging the act of gifting among students to get wide-ranged independence and enrichment practices to come in contact with "real world" people and observe routine practices for success.

The teaching techniques or teaching learning policies employed in E.V.S. are as different aims in different themes are one of the chief causes for this appears to be the difference in environmental settings; the resources comprise of matter and teachers available, different
environment issues and educational systems. The teaching learning policies including class discussion, small group projects, field trips, outdoor studies, and employment of displays, simulation and graver material guides, debates, inquiry and guest lectures are extremely beneficial in several instances.

**DIFFERENT TEACHING METHODOLOGY’S OR TEACHING LEARNING STRATEGIES USED IN E.V.S. ARE AS UNDER:**

**GROUP DISCUSSION:**

GD or Group Discussion, in general refers to strategic formulation through which the students are offered with some room to express their ideas, justifications and opinions about a specified topic or issue of environment. Here, the teacher can guide and assist for a proper moderated as well as topic-oriented thinking. GD actually facilitates exchange and motivational perception of ideas. This can include entire class or groups of a determined size. Students get the scope to express all their ideas, reasons and opinions in a gathering and in front of his peers. It explores values, helps in clarifying values and further in developing the sense of individual responsibility and selection. However, the technique demands relevant selection of the topic that should be of vital interest for all those people are participating in the GD. There will be time limit and further determined goals.

The issue or theme and its linked facets are outlined comprehensively. At times, students are permitted to consult sources or read comprehensively to have a complete notion related to the issues and to debate it in the classroom thoroughly. The class teacher is also engaged in the debate in varied stages of the debate to provide further details, to develop new queries to cite recommendations and perspectives to witness the debate in a correct manner and to provide recommendations to ensure that all class students are engaged in the debate and so on. The benefit to all students is that it allows students to different aspects of environmental studies.

**SMALL GROUP PROJECTS:**

Small groups of people or individuals can initiate projects for the collection of necessary data
or investigate the some environmental hurdles that exist close to them. Some suggestive project can be related to data collection from resource books. The pattern of investigation can be over agricultural practices among rural communities. There can be appropriate preparation for the creation of a scrap book on different animals or birds. Model can be prepared highlighting water pollution, blocked drainage, etc. Teachers can guide students in terms of selecting, structuring, planning, executing and at the end in evaluating respective project for a purposeful activity.

In this method, the total class can either divided into small group or work at a total unit depending on the nature of the project to lookout. Sometimes the project is also divided into small units. Each student or small group of students are given a work for which the students take responsibility of completing it successfully. At the end of the project all the students or groups of students are given a work for which the students take responsibility of completing it successfully. At the end of the project the activities of all the students or groups are presented to the total class in the form of reports and displays. The explanation of their experiences, data, conclusions and recommendations. If we take the problems of mosquitoes as a project a small group will identify the causes of mosquitoes another will map the ditches another will look into the eradication techniques and another group will apply the selected techniques to eradicate the mosquitoes.

FIELD TRIPS:

Visiting places that have environmental issues, offers best possible scope to learners for experiencing and experiencing real environmental conditions. It offers room for creating awareness about the environment, stimulating active participation and further improving investigating skills. This is a kind of approach that can be used effective if emphasized over diversified components. As for example, visit to a field arranged for the development of a factory will make the students understand sources and kind of raw materials that will be consumed in the process of production, working conditions and above all the concerns of employees’ safety. The provision to dispose wastes and relation of the factory location with social and natural environment will open up minds of the student. The activities that are to be followed can get planned in order to identify environmental consequences, interrelationship of environment with life and attaining suggestive activities. Still, this approach demands for meticulous mode of planning, relevantly painstaking cooperation from respective
organisations.

“Field trips are much educative and they create great curiosity in students and also bring out their creativity.” - Keown (1984).

1. Those concepts that are integral part of the student’s environment are best learned in the outdoor environment.
2. The concept has a better chance of being understood and retaining it, if parts of the concepts can be related to student’s environment.
3. Critical thinking is enhanced in the outdoor environment.
4. Investigation in the outdoor environment increases the student’s desire for that environment.

The selected places for field trip should be relative to environmental problems. Before the execution of a field trip, the teacher has to plan the trip, including the teaching learning strategies to be followed. It is better if the teacher visits the place earlier and plans the field trip according to the resources available at the place. After the successful completion of the trip, based on the experiences and observations students may submit their work in the form of reports, drawings, stories, poems etc. More field trips a teacher arranges, more awareness comes in the students towards environment. Field trip is an important method for clear cut cognitive and effective gain in the eyes of teachers and educators. The choice of environmental and its setting play an important role in the formation of right attitude and behaviour.

OUTDOOR STUDIES:

Students may study different aspects and objects of environment. They can study a village, a river, a lake, some specific problems of an area which include pollution aspects, Inter-relationship of living beings, etc. The outdoor studies also require a detailed planning like field trips, but these studies may be limited to the local environments. The study team has to plan the objectives of the study plan, execute and submit a report to take necessary action and for the benefit of the other students.

Backman and Cromtion (1984-85) felt that-
“The effectiveness might be greatest if the outdoor experience is preceded by an indoor experience which provides a cognitive framework into which pieces of information likely to be encountered outdoors can be fitted”.

Kirk (1980-81) felt that-

1. The activities which focus the attention on the use of nature of study and field activities help the students to learn about countryside and conservation.
2. The activities, which develop skills and interest in rigorous physical activities, help in outdoor education.
3. The activities related to the study of manmade environment and social environment help students to learn urban traditions.
4. The activities related to the study of rural environment focus the attention of students to learn about agriculture, horticulture, forestry and other forms of land management.

EXHIBITS:

Exhibits also serve as an important media of environment education. Exhibits or exhibitions can be arranged to show the project work of the students or the highlights of the environment problems in order to get suitable remedies. Different exhibits explaining various concepts of environmental education can be displayed in collaboration with various environmental organizations. Students will take part very actively in these exhibitions and show their abilities. They also explain to the observers about the environmental problems and solutions.

SITUATION ANALYSIS:

This has been noted as another mode of effective tool to make the students capable to recognize or identify determined variables like opinions, values and objects that interact for the creation of a newer situation. It can be derived as an useful approach in terms of creating awareness related strategy and develop comprehensiveness about a specified effective acquisition towards analytical skills, provision of comparing, predicting, prioritizing and evaluating. The following situation can be created:

You get the designation of a manager in a factory. You need to make a decision between the use of coal and solar energy for a respective plant. By the use of coal, you are capable to raise necessary target of production. However, the same can lead to pollution and remains non-
renewable. On the contrary, the use of solar energy is cheap and relevantly inexhaustible. Still, the technology is yet to get developed and its application can decrease the targeted production.

Students might face questions like:

(a) Which power source will be preferred by you?

(b) What kind of criteria you will use making decision?

ROLE PLAY:

The approach aims in offering contrived experiences to all students simplified under real situations and obscured reality. Students are offered with diversified roles to act and dramatize real life instance with the scope for personalizing actions within determined set up. The approach is subject to assist the learners in understanding offered role within social situation and develop skills of communication. Interrelationship among others’ expectations and identification of self within social system is noted hereby. Students will be made to understand that conflicts are actually inevitable, yet can be resolved by mutual modes of understanding. It sensitizes learners about social needs and ethical issues related to the concerns of making decision in the respective role. The below noted sample situation should be considered for better understanding. In a vacant land area, marked "park land", some influential community members with political affiliations managed to attain land in terms of installing small-scale industry over it. In a meeting conducted for the residents of that particular area, it has been decided that selected five members group, inclusive of senior citizen, housewife, social worker, educationist and even a schoolboy will meet the authorities for a reversed decision. The teacher might get assigned with the students with different roles and initiate the activities of role-play. Discussions followed thereby.

SIMULATION AND GAMES:

Most students like to play games. This technique can be used effectively to arouse interest and developmental skills in students. Word puzzles, Crosswords, quizzes, Chinese cheques and many other games related to concepts on environment can be created and used for improving awareness and developing understanding. Simulation and Games can be used to focus attention on both attitudes and content. The advantage of games and
simulations, according to Troost and Altman (1972) is that “they have intrinsic potential for motivation”.

DEBATES AND PANEL DISCUSSIONS:

Panel discussions and debates can clarify controversial issues as well as disputes. These are subject to get organized effectively in order to assist students in expressing their opinion over environmental concerns and problems. Representatives from students and teachers can take the judging position for offering subject viewpoints.

Few suggestive topics for panel discussion and debate could be noted as:

(i) Animals should be free of cages inside the zoo.
(ii) Construction of river dams should be stopped?
(iii) Industrial units producing pollution should be closed.
(iv) Man than other living being has more right over natural resources.
(v) Who is for whom?

Arrangement for debates led by the teacher can create awareness among the students about environment, grievous problems and feasible or possible solutions.

READINGS:

A teacher can ask the students to get further information through additional readings. This will help to grow individually.

INQUIRY:

On finding a problem or else by a student of any occasion a student can take up inquiry to problem into it. Or a teacher can also assign inquiries into various aspects of environmental education. The teacher should develop inquiry guides for the benefit for the student.

GUEST LECTURE:

Guest lectures given by eminent personalities will motivate the student in many ways and help the students to participate in environmental activities.

MATERIAL GUIDES:
Many material guides are available on environmental education. They will enhance the teaching learning activities.

COMMUNITY RESOURCES:
Community Resources can also be used as effective means in environmental studies.

OTHER STRATEGIES:
Teacher can independently develop his or her own teaching learning strategies depending on the demand of each situation. They can also imbibe the concept of environmental education in their routine teaching.

NEED AND SIGNIFICANCE OF THE STUDY

Demands for more local area learning and teaching provisions are increasing. Many state level education boards are developing materials for education and making the same available in local dialects. Few of the states, educational research and training or council of state are being active in developing materials for E.V.S. programme and education. Educational framework initiated by NCERT perceives EVS as a very important component in the process of school level education.

Instructional Aims and Contents: Due to the lack of comprehensive inventory related to these materials, the problems are yet to get resolved effectively. Issues of environment must remain connected intimately with national policies for political, social and economic domains. This cannot be learnt or taught as an isolation science. There’s the need to create environmental consciousness across all social sections. The same should get connected to real instances, enabling connection between natural resources and poverty. E.V.S. must get connected to the particular societies and wellbeing. It is not only about primary species or planting trees, but also recycling. The same should be able to teach the relevance of the connection between rural and urban areas. The concerns should be noted under multidisciplinary inputs. In reference to this consultative process meant for all stakeholders should be encouraged.

Adding environmental education in school level curriculum must get strengthened through the means of building synergies among different approaches as well as setting meant for learning goals. Special programme should be initiated in order to support as well as
investigate modes of training for teachers in the path of attaining an effective environmental education. Implication of non-formal methods should get explored and further infused in teaching methodologies of the normal school.

Methods play a significant role in the process of teaching to make it effective one. It is composed of several steps, which are important as well as are systematically and logically arranged. Many of steps used in one particular method may also be used in another method also. Method is one of the most fundamental aspects of the education and the central problem of teaching. An effective teacher can hope to direct her pupils towards the aim and objectives, if and when she follows the correct method.

According To The Secondary Education Commission-

“Every method good or bad related the teacher and taught depending upon their interaction. This not only influences the mind of the pupils but affects his personality and also determines the value of the standard of their activities. This further influence emotional and intellectual sources and values also.”

NPE (1986) National Primary Education and DPEP (1994) District Primary Education Programme stress on primary education teaching through different methods-play way, excursion. After it SSA (2001) - Sarve Shiksha Abhiyan 2001, emphasizes on - different methods will be included in each and every subject at primary level.

To see all its effects the topic has been chosen. With all this background the investigator felt the need to study the methods being adopted for imparting environmental education at primary level in her city because methods decide whether the goals will be achieved or not.

STATEMENT OF THE PROBLEM

“A Study of Teaching Methods being Adopted for Teaching of E.V.S. at Primary Level.”
Operational Definitions Of The Term Used

Methods of teaching
The methodical manner or procedure which allows interaction between the students and subject theme for achieving the educational methods is known as method of teaching.

Charles Guide has said that, “In scientific language, the term method is used to designate the road that must be followed to lead the discovery of truth.”

Environmental Studies (E.V.S.)
NCERT has introduced the subject environment studies (E.V.S) as a compulsory subject by NCERT in all primary schools.

Teaching Of E.V.S at primary level in urban and rural area.

Primary level
It includes classes I to V.

OBJECTIVES OF THE STUDY-

The research intends to attain the following -
1. To investigate the teaching techniques being implemented for teaching of E.V.S. at primary level in Govt. school of Delhi.
2. To investigate the teaching techniques implemented for teaching of E.V.S. at primary level in public schools of Delhi.
3. To investigate the variation amongst the teaching techniques implemented for teaching of E.V.S at primary level in govt. schools and public schools of Delhi.
4. To investigate the teaching techniques being implemented for teaching of E.V.S at primary level in urban area schools of Delhi.
5. To investigate the teaching techniques being implemented for teaching of E.V.S at primary level in rural area schools of Delhi.
6. To investigate the variation amongst the teaching techniques implemented for teaching schools of Delhi.

HYPOTHESIS
1. There is important variation amongst the teaching techniques between the teaching methods being adopted for teaching of E.V.S. in govt. & public schools of Delhi.

2. There is a crucial variation amongst the teaching techniques being implemented for teaching of E.V.S. in urban and rural area schools of Delhi.

**DELIMITATIONS**

1. The study will be confined to E.V.S only.
2. The study will be delimited to Delhi.
3. The study will be delimited to primary class only.
4. The study will be delimited to teachers of V class only.
5. The study will be delimited to 160 teachers.

**CONCLUSION**

Environmental education can be considered to be a lasting multi-disciplinary methodology to realizing that assists individuals to comprehend and value the environment and their link to and influence on it.

It is a procedure that enhances the grasp, consciousness and comprehension of the environment, affirmative and balanced approached towards it and abilities that would allow students to engage in evaluating the environmental condition.

There is global significance attached to environmental concerns and require an astute preparation for advancement. There are several international environmental concerns and it is crucial to inform the general public of the difficult results of environmental pollution and if reformative techniques are not adopted it would result in disappearance of life. There is immense need to develop environmental awareness. Thus, Environmental studies or EVS needs to be a crucial part of the curriculum at all phases of the education procedure.