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NEED OF ENVIRONMENTAL EDUCATION FOR BALANCED ENVIRONMENT

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ABSTRACT

Environment is nothing but the surroundings in which we live. Basically, it is divided into natural and man-made. Natural environment includes air, water, land, mountain, trees etc. whereas man-made environment includes our lifestyle traditions, customs, habits, the way we adjust our life in society etc. Because of man-made environment or human activities our natural environment gets disturbed resulting in various types of pollution like sound, radioactive, soil, air, water etc. So, there is dire necessity to create and children an awareness and sensitivity towards our environment. It can be done in many ways like formal or nonformal through various agencies. But one of the effective ways to make our children cautious about environment is to introduce it in the curriculum through the environmental education right from the childhood stage which will enable them to protect their environment. Students can also be encouraged to take small and realistic projects in schools like water and electricity conservation, plastic free zone, clean green campus, regular medical and dental check-up etc. Many laws regarding Environmental Protection have been made.

KEY WORDS: *Environmental Awareness, Natural Environment, Man-made Environment, Pollution, Environmental Education*

An environment refers to the surroundings affecting human life. There are different ways to classify environment. Some have defined as Micro and Macro, while others define it as Natural Environment and Manmade. Natural Environment is further classified as living or nonliving. Natural Environment includes micro-organism, plants, animals and also various gases and enclosing our surroundings like Carbon-di-oxide, oxygen, nitrogen etc. Manmade Environment is actually the cultural i.e. customs habits, populations, education, industry, agriculture and other practices like sanitation, health and hygiene. So the question is how to protect the environment. For this we need awareness, knowledge and strategies to maintain the ecological balance. We know the whole universe is interdependent there is a very strong food chain which helps to maintain the diversities of the environment and our very existence. But we human are very busy in disturbing or polluting environment through our activities. Human activities day by day is a threat to the environment, which means threat to our life. Pollution is one of the main problems of the environment.

Because of pollution we have been suffering from so many diseases. It is a basic cause for sickness of various kinds. It is defined as the unwanted particles or gases which comes into the environment through different activities like industrialization, urban planning, agricultural etc. Pollution may be of many types like air, water, soil, noise, radioactive, thermal, plastic, drug, electronic, ionic, biological and so many.

Air Pollution is alternation of air quality that contains physical, biological or chemical pollutants i.e. the impurities which are undesirable and contaminate the air. They can be visible in the form of dust or invisible in the form of gases which mix with them. If the combustion of coal and oil takes place than it produces nitrogen and sulfur-di-oxide. Our industries emit every day large amount of Carbon mono oxide, Hydro carbon chemicals and organic compound into the air. When the pollutants like NO_2, SO_2, CO, CO_2 and other hydrocarbon react with sunlight to produce a smog or thick fog or haze, which is known as Air Pollution. When excess pollutants is produce in the air, it contributes to global warming. It also causes acid rain. A significant deterioration is seen in the human health due to pollution causing allergy, heart diseases, respiratory problems, nausea etc. So it is important to control it. It can be control by avoiding fossil fuels and using alternative energies like solar, wind and geothermal. We should also change our ways of living i.e. consumption should be control in order to save energy. Air Pollution is measured by a scale called Air Quality Index.

Water pollution is defined as the presence of any contaminating substance in water which changes

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physical or chemical properties of water. This environmental degradation is caused due to discharge of pollutants from industries, spills during transportation of oil through oceans, seepage of pesticides from agricultural fields to water bodies, dumping of garbage and trash in the water bodies etc. Industries like smelting, tanneries, chemical manufacturing, product manufacturing, dye industry, paint, plastic, paper, textiles etc. cause a lot of pollution. There are three categories of water pollutants. The first is the category of disease-causing agents such as the parasitic worms and protozoa that enter the drinking water supply by discharge of untreated sewage waste into natural water bodies. The second is the category of oxygen demanding wastes which kill marine life by absorbing the much-needed oxygen dissolved in the water. Many untreated industrial effluents lie in this category. The third class is the water-soluble inorganic pollutants, for example the toxic metals such as nickel, lead, chromium etc. and industrial acids and salts.

Soil pollution is caused by the excessive presence of chemicals. It is indicated by the change in the soil PH value of the Soil. The ideal PH is 6 to 8. If PH value is below 6 it indicates acidic character of soil, and if it is above 08 then it is highly alkaline character. In either case soil becomes unfit for crops. The recent increase of metals, industrial wastes, more pesticides have made the soil infertile, and the movement towards organic products is an effort to restore the natural composition of soil by constraining the use of chemical pesticides and fertilizers. Pesticide pollution is caused if the chemicals used for pest exceeds beyond the permissible limit and excess of it causes so many side effects. Some of the pesticides are herbicides, fungicides, insecticides, and rodenticides etc.

Radioactive pollution is caused by mining and processing of ores through nuclear power plants, nuclear reactors, explosion of nuclear bombs and other nuclear weapons which are responsible for the emittance of rays in the form of alpha, beta and gamma rays.

Sound pollution It is caused if the noise created by any object is harmful for the human ear. Human ear is more sensitive to higher frequencies, and it disturbs the ear drum. Noise is basically undesirable loud or high-pitched sound. The unpleasantness and harmful effects of noise depends on intensity, frequency, time or duration of sound.

All these pollutions together are responsible for health problems like hypertension, contract, muscular weakness, stomach disorders, blood pressure, lung irritation, deformities in bones, behavioral problems (due to sound pollution) etc.

Another factor which plays a very crucial role in unbalancing the environment is radiation. Our environment is full of radiations and each of us are exposed to it. There are two types of radiation, one is natural other is by human activities. The natural radiation occurs in the soil, the rocks, the water, and the air we consume and the sunlight we get. The other radiation is produced by use of radioactive material in power generation, military, and industrial application, medical x-ray we use, the home appliances we use, the cell phone we use etc. Radiation is a type of energy that moves through the space at a very high speed. Basically, they are two types ionizing and non-ionizing. If the radiation is capable of producing ions when interacted with matter it is known as ionizing radiation and if the ions are not produced on interaction with matter, it is called non-ionizing radiation. The part of electromagnetic spectrum which exhibits high ultraviolet rays apart from Gamma Rays and X rays are ionized whereas the lower ultraviolet part of the electromagnetic spectrum, visible light, infrared microwaves and radio waves are called non-ionizing radiation.

Human Body and Radiations: If the ionizing radiation bring changes in the cells of human body it effects to the health. Our body is composed of large number of molecules which are formed by number of atoms held together. If the bond between the atoms is broken, then the damage is caused to the body, and it emerges in the form of disease. The degree of damage to the human body depends upon the type of radiation, the route of exposures, the length of time, a person is exposed to. Two types of health effects are seen from radiation one is threshold and other is non-threshold. If the radiation is given in high doses its impact is immediately seen like loss of hair, reduction in thyroid functioning and other types of uneasiness. The symptoms may begin with one or two hours and may last for several months depending of the dose. Radiation is also found one of the major causes for inducing cancer in most body tissues and organs. The tissues organs showing high sensitivity include bone marrow, breast thyroid glands and lungs. Some people are more sensitive to radiation then others. There are various factors which influence a person's sensitivity to radiations depending on person's age, gender, and other genetic or hereditary factors. Generally, children when exposed to radiations are more at risk than adults.

Radiation Protection: It is the science and practice of protecting people and environment for the harmful effect of ionizing radiation. Radiation protection is divided into three one is occupational radiation i.e. protection of workers other is medical radiation protection dealing with protection of patients and third is public radiation protection which is protection of individuals from radiation.

We have seen above the various types of pollutions and radiations which are harming our environment every minute. Actually, it is not possible to

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totally close all the activities but definitely it can be controlled. For making these rights and restoring the natural balance change of attitude is must. **Now in order to teach environmental education a well structure curriculum must be implemented at different levels of education.** The curriculum should make aware the students about problems related to environment and how can they be solved. Problems like conservation of soil, recycling of resources, food and nutrition, pollution control, health and hygiene should be discussed, and students should be asked to give their opinion how can they be overcome. The students are very curious to know about environment and universe, they should be told to take small initiative on their part like feeding birds, switch off lights and fans when not in use, putting garbage in dustbin only, planting small trees, keeping the environment green, using organic product, avoid using plastic etc.

Suggested curriculum for primary and secondary stage

Children should be made aware about clean and green environment which will enable them to maintain healthy life. Knowledge of food chain, dependence an interdependence of birds, animals, trees on each other should be introduced. They should be taught the importance of trees and the role played by them in human existence and how deforestation can cause ecological disturbance and so it should be avoided at any cost.

Knowledge of various sources of energy like solar, thermal, wind and their uses is quite important so it should be introduced in the curriculum. Concept of pollution and its impact, how to minimize it, relation between industrialization and pollution, water, cycle, oxygen cycle etc. can be taught at the upper primary level.

At the secondary stage concept of global warming, greenhouse effect, acid rain, sustainable development and how is it possible, use of organic products and their benefits, kinds of soil and the type of vegetation found on them, ozone layer depletion, water filtration procedure, detailed study of pollution measures to check etc. can be taught to the students.

Many laws regarding Environmental Protection have been made. A few of them can be named such as fisheries act for protecting aquatic wildlife, wildlife protection act for safeguarding animals from hunting, the act for banning the use of explosive substances, insecticide, pesticide act that is using disinfectants not beyond the permission limits, industrial development and regulation act for providing healthy working condition to its employees etc.

Some of these steps which can be taken to maintain the sustainable development and check radiation are as below:

1. Rate of regeneration of resources should be more than consumption.
2. Any type of pollution weather air, water, soil, sound, radioactive should be checked from time to time.
3. Overpopulation should be controlled, otherwise we will fall short of resources.
4. Sustainable development helps in maintaining the ecological balance.
5. X-rays should be done only when it is very necessary because exposure of body to these rays impacts our health.
6. In order to increase the shelf life of food products they are exposed to radioactive rays so consumption of such food products should be avoided.
7. All facilities in gadgets like cell phone, Wi-Fi, microwave, should be used only when it becomes necessary because too much exposure to these can lead to serious health issues.
8. Smoking is injurious to health so it should be avoided.

The small projects can be introduced by the school assessing the capability and interests of students for example banning the use of plastics in school making it plastic free zone, no littering at the campus or cleaning campaign, no wastage of water and electricity, maintaining the school environment green and healthy, tree plantation, regular medical and dental checkup which may help to provide students nurturing environment.

Conclusion: In the end we say it is duty of every citizen to protect our environment. Clean and safe environment impacts our health very much. Government has taken many formal and non-formal initiatives but still effort on individual level will contribute more. Man to man effort is important to minimize the pollution and balance the environment.

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