

Strengthening Environmental Education in School Curricula

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Abstract: The concept of 'the environment' has changed over time. Early views focused on changing ecosystems and the impact of various forms of pollution. However, the social, economic and cultural dimensions of the environment have been increasingly recognized and the inclusion of sustainable development makes the concept even broader. Environmental education is an approach to acquire the values and clarifying concepts, which aims to develop the necessary skills to understand and appreciate the relationships between human culture and the natural environment vitality, and it is not just the teaching of information and knowledge, but experience in the process of decision making, responsibility, and a law of conduct on issues related to assessment and environmental protection. The importance of environmental education lies when it takes its position between the arts and sciences which are taught, so it turns into a special approach able to take its role in all curricula and in all stages of school and In order to prepare the minds of new generations aware of the concept of environmental education, and work on its application. Therefore, it is through environmental education can make radical changes in ways of thinking and environmental behavior in the society. So that each person is acting like a mature decision maker. This paper highlights the aspects: a) Importance of teaching environmental education in schools b) The approaches adapted to the teaching of environmental education c) Learning strategies of environmental education in school.

Key words: *Environmental education, School curricula, ecosystems*

1. Introduction

During the last three decades the environment and its problems transformed, with the worsening of its consequences severe, to the hot issues that impose themselves urgently everywhere in the world, not only on environmentalists and specialists out, but also to all people, wherever they are and where they are, regardless of their standard of living, and the circumstances of their lives, and their level of education and cultural heritage. Everybody affected, from the deterioration of the environment and its components. However, not all stakeholders interested in the repercussions of environmental problems and seek to address them, although they know that those who wish to live safely, seeking well for his offspring have to protect environment and take care with others who share his life and activity. The protection of the environment and take care of it is a task closely linked to consciously human and his environmental culture. In this regard, the major role of Environmental Education is in creating awareness and environmental culture, and thus in the protection, care, improvement and development of the environment. Environmental education is an approach to acquire the values and clarifying concepts, which aims to develop the necessary skills to understand and appreciate the relationships between human culture and the natural environment vitality, and it is not just the teaching of information and knowledge, but experience in the process of decision making, responsibility, and a law of conduct on issues related to assessment and environmental protection. The importance of environmental education lies when it takes its position between the arts and sciences which are taught, so it turns into a special approach able to take its role in all curricula and in all stages of school and In order to prepare the minds of new generations aware of the concept of environmental education, and work on its application. Therefore, it is through environmental education can make radical changes in ways of thinking and environmental behavior in the society. So that each person is acting like a mature decision maker.

Environment and Education: The term "environment" commonly used in the scientific community, and pleasing to use had been increasing at the general public one day after another. In light of this environment, we find many different definitions, depending on man's relationship to the environment. The school environment, and the university environment, the factory environment, and the institution environment, society and environment, home environment and the world environment. Consideration

could be given to the environment through various human activities, as if to say, environment, agricultural, or industrial, or cultural, or health, or social, or political, or spiritual. Whatever the perception of the environment and its fields, the definitions contained are as follows:

- The environment is the framework in which human live and gets his basics of life of food, clothing, medicine and shelter, and exercises his activities and relations with others.
- Environment means everything that is out of the human entity, and all that surrounds it from the assets, which include air breathe, the water which he drinks, and live upon the land and farmed, and surrounded by objects or inanimate. Short, is the framework which is practiced in which his life and its various activities.
- The scientific sense of the environment Includes three main aspects, the economic and social side, and by the physicist (natural).

By the previous definitions it is clear how the close relationship between man and the environment, it is within his presence, and specific activities and levels of living, and therefore should be for a person to be a positive factor, affects the environment in order to maintain itself and its surroundings. From this perspective, comes the need to develop environmental awareness at the individual through environmental education, The contribution of education in general through the publication of their information in terms of the definition of environmental problems and advocating the use of its resources to good use and non-destructive, is of great importance in the development of consciousness. These resources, but such use is exposed to the problems of fabricated himself. That being the case, we must protect this environment from the man himself. This requires the development of environmental awareness to it, and to instill a sense of responsibility towards the environment. There is no way to that only environmental education through which we can create widely recognized for the relationship between the environment and humans, that are not cognitive, but should be behavioral as well, makes him feel its responsibility to participate in the protection of the natural environment and improve it, and to avoid prejudice, and by adopting the behavior of adequate exercise on a permanent basis at the individual and collective. Based on the importance of the subject , many countries planed to train the necessary cadres which are based on the dissemination and development of environmental awareness among learners, and the satisfaction of prescription practice constructive behaviors of their performance against their resources and their environment. Finally; environmental education , is the educational concept , makes the combined elements of the environment scientifically resource and aesthetically pleasing at the same time, and then it should be used in all branches of education in order to make the learner aware of knowledge about the environment and about his role of its elements.

2. What is Environmental Education?

Environmental education (EE) refers to organized efforts to teach about how natural environments function and, particularly, how human beings can manage their behavior and ecosystems in order to live sustainably. The term is often used to imply education within the school system, from primary to post-secondary. However, it is sometimes used more broadly to include all efforts to educate the public and other audiences, including print materials, websites, media campaigns, etc. Related disciplines include outdoor education and experiential education (Wikipedia, 2012). Environmental education is a learning process that increases people's knowledge and awareness about the environment and associated challenges, develops the necessary skills and expertise to address the challenges, and fosters attitudes, motivations, and commitments to make informed decisions and take responsible action (UNESCO, Tbilisi Declaration, 1978). The concept of 'the environment' has changed over time. Early views focused on changing ecosystems and the impact of various forms of pollution. However, the social, economic and cultural dimensions of the environment have been increasingly recognized and the inclusion of sustainable development makes the concept even broader (Stokes, Edge & West, 2001).

Environmental Education Objectives: the Council of the European Union Ministers in 1988, argued that the objective of environmental education is: to increase the public awareness of the problems in this field, as well as possible solutions, and to lay the foundations for a fully informed and active participation of the individual in the protection of the environment and the prudent and rational use of natural resources (Stokes, Edge & West, 2001).

The objectives of environmental education are:

- **Awareness:** to help individuals and social groups acquire an awareness of and sensitivity to the total environment and its allied problems.
- **Knowledge:** to help individuals and social groups acquire basic understanding of the total environment, its associated problems and humanity's critically responsible presence and role in it.
- **Attitude:** to help individuals and social groups acquire social values, strong feelings of concern for the environment and the motivation for actively participating in its protection and improvement.
- **Skills:** to help individuals and social groups acquire the skills for solving environmental problems.
- **Evaluation ability:** to help individuals and social groups evaluate environmental measures and education programs in terms of ecological, political, economic, social, aesthetic and educational factors.
- **Participation:** to help individuals and social groups develop a sense of responsibility and urgency regarding environmental problems to ensure appropriate action to solve those problems (Chelliah, 1985).

Curriculum Corporation for Environment Australia (2003) designed a detailed map to identify Environmental Education within curriculum outcomes and objectives from the start of school until the end of Year 12 according to the following categories:

- Information about the environment;
- Studies of humans and the environment;
- Skills to investigate the environment;
- Positive attitudes to the environment;
- Investigating and clarifying environmental viewpoints;
- Environmental problem solving;
- Taking environmental action.

How to achieve the objectives of environmental education? Achievement of these objectives requires educational process to be able to:

- Provide knowledge on the relations between the various biological factors, physical and social control in the environment, through overlapping raised, is capable of developing a curriculum of behavior and the development of appropriate activities, through observation, experimentation and study to preserve the environment.
- Develop appropriate attitudes to improve the quality of the environment by real change in the direction of their environment, people's behavior, so that lead to the creation of personal self-disciplined and are acting responsibly in the environment.
- Use a variety of ways to provide people with a variety of skills process and technology that allow for the activities of the rational in the environment. This can be achieved by providing the opportunity at all stages of education (formal and informal) to acquire skills that can gain the knowledge available about the environment, be able already to contribute to in the development of viable solutions to environmental problems.

3. Importance of teaching environmental education in schools

As the international climate, most literally, calls for increased attention on environmental issues. Despite the barriers to environmental education in schools, there are recognizable benefits to integrating environmental education into existing curricula. The environmental awareness is the true measure of the progress of State and civilization, which is a noble mission through its goals, and means toward human rights. Recent years have seen significant development in the premises of intellectual Environmental Education, including the concept of environmental protection, in its narrow meaning on pollution control and minimize it. The growing interest in the environment appear in two prominent directions: The first - calling for the adoption of legislation and environmental laws require the actions of groups and individuals are codified towards the environment. The second - interest in what is known as environmental awareness that must be adopted by the environmental education. Environment for a human being is the framework in which they live, and its components of inanimate and objects come to life. The human being is the most important factor in the events of environmental change in order to meet its needs of food, clothing and housing, and promote self-pleasure. Systems of education play a key role in raising awareness of environmental issues and submit them as a priority in the preparation of the next

generation to deal with the problems of the environment and its future. Education in the world demand more than ever to serve this subject and the effective participation in it. Perhaps some ask: Why is attention and focus on school education? To those we say that all members of society Pass through the school channel, and students make up a large proportion of the community, and spend time of age in school, children are affected quickly and convey what they have learned to the family. They spread health education and follow proper health behavior .Rogers (2004) pointed out that Learning about the environment is often memorable and effective, and can help promote overall academic excellence. Environmental education provides an opportunity to strengthen teaching in many core subjects, especially science, because it is the basis for solving many of our environmental challenges. Environmental education also provides an opportunity to strengthen interdisciplinary teaching because environmental topics can be addressed from many different perspectives, including scientific, historical, cultural, and political perspectives. Finally, environmental education can provide an important opportunity for teachers to bring actual local environmental challenges into the classroom for discussion and problem solving.

Environmental Education approaches: European Commission (1997) pointed out that it is important to note that unlike many other areas of the curriculum, environmental education is not necessarily taught as a separate subject – indeed, it has been recommended that it should not be taught on this basis. Nixon, Sankey, Furay, & Simmons (1999) explained that one of the implications of this, and of the fact that curriculum documents do not necessarily prescribe the content, is that in some countries, there is flexibility in terms of the extent to which environmental education is covered. As noted that the extent of teaching depends on the personality of the teacher, and heavily reliant on the interests and will of a small number of committed teachers. However, there are also examples of it being taught as a separate subject area or via a thematic interdisciplinary approach. In all cases where it is taught as a separate subject it is also taught in some other way, primarily embedded in other subjects (Stokes, Edge and West, 2001). Stokes, Edge and West (2001) summarized examples of two approaches:

A. When environmental education is taught as a separate area its content is variable as shown in the following examples:

- In environmental studies, the content is organized into six domains, which are designed as a frame of reference rather than specific topics. These are: nature, technology, humans, society, time and space.
- Discovering the world: activities are undertaken that help pupils to understand the importance of recycling refuse and to identify pollution...environmental issues with a geographical focus on those faced by the country...a basic understanding of the relationships between human beings, animals and their environment...the study of ecology, initially based locally .

B. The following exemplify the teaching of environmental education using an interdisciplinary approach:

- Proposed themes for study include diversity, individuality and the beauty of nature; the importance, meaning and history of the cultural landscape; personal lifestyle and environment.
- Environmental education is investigated through a number of topic areas such as ‘international education’, ‘consumer education’ and ‘traffic education’.

Environmental education is a compulsory area of the curriculum in primary and lower secondary education. Many of the educational literature noted that there is a group of approaches, which can include environmental education, these approaches provide students, teachers, and other staff members with opportunities to be active participants in the learning process .Some of these approaches are:

A. Integration approach (Multidisciplinary): Where is the integration of certain environmental issues in some of the traditional curriculum or content linked to appropriate environmental issues, and in the framework of this approach can be vaccinated curriculum with concepts of environmental.

B. Units Approach: This Approach addresses the environmental issues as a unit, where the unit is taught in a specific time in all its dimensions: social, economic and natural resources.

C. Interdisciplinary Approach: environmental education is taught as an independent syllabus, like any other study material in any study plan. The integration of environmental education in school curriculum includes three main aspects: Education about the environment, Education from the environment, and education for the environment.

D. Social approach and enrich the curriculum environmentally: The objectives of this approach highlight the relationship between science and technology Society and the environment where the learners are provided the opportunity for training to make decisions for the everyday life And the future of society.

E. The conceptual approach: The concept is stripped of the elements common to several positions or facts, usually this abstraction is given a name or title, and organize the content of the curriculum about general essential concepts to be the column Backbone of the environmental approach.

4. Environmental Education strategies in schools:

Teaching and learning: Curriculum Corporation for Environment Australia (2003) recommended that materials be developed to support the uptake of Environmental Education by:

- Promoting exemplary teaching that incorporates and elaborates existing learning outcomes in State and Territory curriculum documents (including examples of whole school programs and subject specific programs)
- Providing examples of opportunities to consider environmental issues within the more general learning outcomes in curriculum documents
- Introducing aspects of Environmental Education that at present are overlooked or very poorly treated in the curriculum.

These materials may include units of work, readers, inter-active multimedia resources, guidance on how to use existing resources, links to existing Environmental Education initiative and data sources, assessment resources, teacher guides and case studies. The challenge is to provide a wide range of effective learning experiences that promote and support environmental education for sustainability. Some learning strategies are more appropriate than others, depending on the needs of the student. Appropriate strategies place the student at the centre of the learning, are negotiated with students and are highly interactive within and beyond the classroom. (Department of the Environment and Heritage, 2005). Some of these strategies are:

Narrative strategy: Denning explained what Narrative is. A narrative in its broadest sense is anything told or recounted; more narrowly, something told or recounted in the form of a causally linked set of events. Establishing that something is a part of a whole and, usually, that something is the cause of something else creates narrative meaning. To say what something means is to say how it is related or connected to something else. To ask the meaning of an event is to ask how it contributed to the story in which it occurs. It is the connections or relations between events (Roger, 2004). Therefore, it can deal with stories of scientists and their work, especially those dealing with a relationship of love and respect for nature, which leads to the growth of environmental awareness and development of environmental ethic. In Roger, study (2004) explored the role of narrative in developing an environmental ethic by creating narrative-based environmental education curriculum and assessing student response. The findings suggest that an environmental education curriculum strong in narrative is a powerful tool in teaching children a specific environmental ethic.

The use of play, simulation and role-playing strategy: These methods can visualize the nature of belief of environmental problems and interests of individuals that affect them and are affected by. Simulation games area rather informal activity in the classroom in which the players take on roles simulating the real world. Role-play is a form of simulation, which is used for affective learning (values, beliefs and attitudes). Its purpose is to enable people to experience a situation from the past or to prepare for a future environmental situation it involves acting out an episode in which time and space have been compressed. It is a popular method, used particularly with young adults of mixed ability levels. Every role-play should be concluded with a debriefing session for reflection and to enable participant's time to readjust to the normal situation. In a role play situation the problem has to be suitable to the maturity and level of understanding of the participants.

Problem solving strategy: The problem is the state of dissatisfaction or tension, and the reason for the existence of the problem is often Recognized the existence of obstacles to reach the goal. The scientific method steps in solving problems are summarized in: identifying the problem - the collection of data and information about the problem - classification of information and data - calendar information - Selecting a

solutions - Evaluating the solution. Method of problem solving is a strategy for helping students develop skills for analyzing an environmental problem. Working through Steps of scientific method, systematically can help them decide, from a future perspective, what can be done about the problem.

Study cases: Case studies are similar to 'environmental encounters'. Real life situations are chosen and the whole class/group of students/school together with their teacher and local experts focus study/activity on a particular situation. The encounter may last for several days or weeks but the basic idea is to focus the traditional elements of teaching and learning on a particular issue and to thus explore what additional knowledge, skills and attitudes may be involved in solving environmental problems. Methods appropriate to the study of the particular issue or case are to be selected such as survey, field visits etc. For example: the student control of an organism in its natural environment, or energy transformations in one Pasture, or the study of environmental impacts, which allow individuals to opportunities in deepening a topic.

Environmental excursions and visits (Field Trips): Trip or visit to the environmental site is **Purposeful** activities outside the classroom, to provide experience to the student, which is difficult for traditional methods of teaching provided. Field trip resource kits aim to encourage these ideas in the following ways:

- The suggested activities encourage learning **IN** the environment - enabling the development of skills, attitudes and values that students gain from experiences in the environment.
- Background notes and activities assist study **ABOUT** the environment - raising levels of knowledge and understanding and awareness and sensitivity to the environment and environmental issues.
- Fostering the opportunity to participate, take action, and do something **FOR** the environment, as either an individual or a group.

Method of learning to work in the community (Teamwork): Teamwork is defined in Webster's New World Dictionary as "a joint action by a group of people, in which each person subordinates his or her individual interests and opinions to the unity and efficiency of the group" (NDT Resource Center, 2012). Teamwork develops awareness and Environmental ethics Where Student participates in social work directly which leads Self-esteem, as well as personal responsibility. Becoming a model Environmental Education School is a group effort; one person cannot achieve this goal alone. Students' success is due to the combined efforts of their Environmental Education Team. For example: students' participation in the removal of soil or take Care of local Park.

5. Conclusion

The last question comes: Do you offer education environment through school by listing a new subject, teachers, and curriculum dedicated to environmental education, or materials incorporated into the "carrier" which is known as impregnated? Long talk in this regard but the institutions and the most seasoned experts are inclined to the integration of environmental issues and broadcast in the rest of the curriculum, because it involves the largest number of teachers, and reiterates the means of strengthening one another through various lessons. However, there are difficulties impeding the implementation of programs for environmental awareness, including time constraints and the large number of curricula and inadequate training and lack of health information. In addition, many people resist change in the curriculum. In addition, school health workers face similar difficulties to their preoccupation with therapeutic services, which accounts for most of their time. Studies also showed a gap in appropriate pedagogy and curriculum development in teacher training, the absence of a positive vision, and a general lack of conviction that individual teacher efforts will really make a difference. Teachers require greater capacity to undertake the immense and challenging task of implementing a whole-school approach to Environmental Education. Enhanced pre-service and in-service teacher training is urgently required for educators to be able to act as effective facilitators in the Environmental Education process. Finally, I like to note that there must be studies to determine the priorities for environmental education and focus on school and private sector involvement in these programs, as well as voluntary associations and the relevant authorities. I also find it necessary to focus on teacher training, through establishment of a nationally accepted set of criteria for the evaluation of effective Environmental Education resources and programs would assist teachers in their development of environmental education programs. Therefore, that the preservation of the environment understands and application practices, even in the end for us

and for future generations. In addition, to obtain support from school administrators, governments and teachers alike, it is necessary to highlight the importance of curricula integration, rather than the creation of new courses. Leadership challenges, both within schools and within their larger administrative communities, are prevalent in moving toward a systemic approach to Environmental Education in schools.

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