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ADDRESSING ENVIRONMENTAL ISSUES THROUGH THE SCHOOL CURRICULUM: THE ZIMBABWEAN EXPERIENCE

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ABSTRACT

This paper seeks to contribute to a better understanding of the environmental crisis by examining the nature and extent of the environmental crisis and then exploring, in detail, how environmental education, in general, and a re-conceptualized environmental education, in particular, could, within the framework of schooling, be made a potent weapon in the war against an environmental crisis, similar to what has happened in the war against HIV/AIDS pandemic. While the paper readily acknowledges that the environmental crisis is a global crisis, it focuses quite specifically on Zimbabwe's school system and thus gives the paper a much-needed developing world perspective. It is also a reaffirmation of the fact that developing countries cannot be spectators to the environmental crisis. It establishes that Zimbabwe has responded to the environmental crisis by incorporating an integrated subject in the name of environmental science at the primary school level. However, environmental education becomes fused with other disciplines at the secondary level. It is recommended that a revision to the handling of environmental education at the secondary school level to establish a continuum from the primary school. In that way pupils will constantly be reminded of the need to care for the environment throughout the school system

Keywords: Environment, sustainability, environmental crisis.

INTRODUCTION

The environmental crisis poses one of the severest threats to the existence of humanity today. It has jolted societies all over the world to ponder and rethink the role that education could play in the fight against it in order to ensure the survival of humankind. This development underlies two critical facts about education, which are also its defining hallmarks. First, at the heart of education is the concept of "caring" and 'nurturing', as illustrated graphically in the Latin word "educere", which means "to bring forth" and from which the term education is derived. Second, education cannot be indifferent to and a spectator in crises that threaten the very existence of humankind. The environmental crisis is, in many ways, analogous to the HIV/AIDS pandemic of which many countries, including Zimbabwe, have made it an integral part of the school curriculum as a way of enhancing awareness among school children.

The environmental crisis looms large and ubiquitous with far reaching repercussions for not just the present generation, but for the future generations. At its heart, the environmental crisis re-echoes the age-old question of how people interact with their environment, their role in civilization and, above all, their responsibility and care in ensuring the sustainability of the bounties, which nature has made available for the present and the future generations. At the same time, the crisis

rekindles the basic tenets of education, namely to "care" and to be "involved". For this reason, the environmental crisis becomes essentially an educational matter. This view is aptly expressed by Arendt (1972), when she says the essence of education is natality, the fact that human beings are born into the world. It is against this backdrop that it becomes imperative to ask how responsive has our education systems been to the environmental crisis and in what ways can school curricula, especially, be made more responsive to this crisis, whose devastating impact is potentially greater than that of the other crises.

AIMS OF THE STUDY

The following aims guide discussion in this study: examining the nature and extent of the crisis with particular reference to its causes and repercussions and the contribution of humanity to the crisis and its possible resolution; interrogating the tenets and values that underpin Environmental Education with a view to determining how these could individually and collectively be the answer to the environmental crisis; and discussing the status of Environmental Education as presently practiced in the Zimbabwe school system and how a re-conceptualized Environmental Education can be made an integral part of the school curriculum in ways akin to HIV/AIDS education.

CONCEPTUAL FRAMEWORK

The broad theoretical framework of the study is to be found in the reconstructionist philosophic school of thought. According to reconstructionism, society is bedeviled with crises or social ills. These ills can be corrected through an educational reform. In this context, the environmental crisis exemplifies a societal ill that could effectively be addressed by a reconstructed school curriculum. To further explicate how the curriculum could be reconstructed, it is necessary to employ a post modernist perspective grounded in an environmental conceptualization. Huey-li-Li (1994) contends that the environmental post-modernist perspective represents an attempt to refuse a dissociation of the biological and the phenomenological. It is, thus, an attempt to interpret the complexity of human interactions with the real world that is the earth. Therefore, the environmental crisis can be found in the four dimensions of the environment, which are the social, ecological, economic, and political dimensions.

THE ENVIRONMENT

The term "environment" ecologically entails a system of the interdependence of the living and the non-living components of an area over a given period of time. Specifically, the term refers to the interactions of all physical, chemical, and biological components of the earth (Fien, 1993). According to Sauve (2002), people's relationship to the environment depends greatly on the context of what is available and is culturally determined by the environment. She describes many different representations of "environment", including "environment as nature"; "environment as a resource"; "environment as a problem"; "environment as a system"; "environment as a place to live"; "environment as the biosphere", amongst other numerous definitions. Turnham (2000) sees the environment as a social construct which focuses on interactions between the physical surrounding and the social, political, and economic forces, which organizes society.

CAUSES OF ENVIRONMENTAL CRISIS

Environmental problems are complex and interlinked, due to the sophisticated social, political, and economic systems within the modern societies. Most of the problems that make up the environmental crisis seem to be common. Their

magnitude and severity has led people to give them more attention. Generally, the causes of environmental problems are linked to the rapid increases in human numbers, especially in the developing world. Similarly, in the developed world, the causes of environmental problems are linked to increases in consumption, industrialization, and technological development. However, the causes are explained within technocentric and ecocentric perspectives, as well as the conservative reformist or radical perspectives.

The technocentric or ecocentric views that are common are centered on capitalism. Capitalism, together with its consumptive rate, is putting more demand on the environment. This has resulted in an over utilization of resources. Apart from capitalism, there is the issue of poor environmental politics, where the care for the environment is sidelined. This is exacerbated by lifestyles of excessive consumerism, which puts too much demand on the environment through resource utilization (Rosenburg, 2005). Lastly, unsustainable development and inappropriate technology help in worsening the environmental deterioration. Ecocentrically, poor ethics and values help in causing environmental deterioration. Normally, this is enhanced by poor education about the environment. Another important aspect that is often ignored is the issue of gender inequalities, especially in the developing world where environmental laws disregard women in decision-making. The concept of overpopulation is also another contributory factor to the environmental crisis, where the resources are stressed by sheer demand on the environment due to a greater number of people, (Lotz-Sisitka, Olvit L, Gumede, & Pesanayi, 2006; Tilbury, 2004).

While the technocentric model places emphasis on people as being separate from nature and nature is viewed as a resource to be managed and conserved for the interest of people, the ecocentric model views people as being a part of nature. The suggestion is that nature should be conserved for its own sake. The conservatives propose slight changes to present technology, economics, and politics. The reformists think otherwise. To the reformist, changes are needed at large scale, but should be within the current social structure. The radicals purport that the whole structure of society should change to solve the environmental problems (Palmer & Neal, 1984; Fien, 1993).

The political reformists see the poor environmental economics and excessive consumerisms as the main causes of environmental crisis. It is these two issues which are central to environmental deterioration. The radicalism model blames capitalism for environmental crisis. Capitalism promotes egocentric views on the environmental usage and hence the decline and over-use of natural resources for the benefit of very few individuals.

Environmental problems touch on all dimensions of the environment, which are biophysical, economic, social, and political, which are complex and interlinked. Central to the biophysical aspects are the problems of pollution of the atmosphere, land, and water. Atmospheric pollution manifests itself through the global climatic change and its related results, for example natural disasters. The topical issue of ozone depletion and destruction also becomes an important area of focus (Turnham, 2000). Loss of biodiversity is another important aspect, which encompasses the loss of animal and plant species, genes, and ecosystems. The degradation of life support systems, like soils and forests, also become important issues of concern.

Economically, environmental problems are manifested through development thrusts in both the developed and the developing world. However, in the developed world, these environmental problems are centered on high consumerism

which puts pressure on the natural resource usage, especially energy resources and life support systems. In the developing world, environmental problems are a result of poverty and deprivation. This has increased the dependence on and use of the unexploited natural resources in an unsustainable manner. Similarly, the gap between the poor and the rich has widened both within the countries and between the developed and developing world.

Environmental problems also take a social dimension. This manifestation is through social conflict and violence, resulting in huge military expenditures and the manufacture of weapons of mass destruction. Greed is another dimension, which typifies environmental problems of the developing world. Through greed, societies culminate in corruption and other corrupt tendencies. Increased stress among people is yet another dimension, which results in abandoned children and a breakdown of marriages, families, and social values. The heightened point is seen through an increased intolerance against people of different races and the minority groups. All in all, the environmental problems manifest themselves through a rapid population growth.

Lastly, the environmental problems manifest themselves through the political problems that exist in a country or the world. This is clearly shown when the countrymen are denied their basic human rights. The denial of the basic human rights will be through repression and discrimination against the minority groups and the weak. It could also be seen through exploitation of workers by giving them low wages. This increases the pressure on the environment as people seek alternative means of survival.

HISTORY OF ENVIRONMENTAL EDUCATION

According to Otiende, Ezaza, and Boisvert (1997), environmental education started back in the 1970s. It resulted from the major conferences that discussed the human environment, held in Stockholm in 1972, in Belgrade in 1975, and Tbilisi in 1977, which created a totally new awareness about “the environment” in the world today. The first Intergovernmental conference on environmental education, sponsored by UNESCO-UNEP was held in Tbilisi in 1977. One of the recommendations of the Tbilisi conference was the promotion and development of curricula and the training of teachers by member states and inter-governmental organizations, (Fien, 1993; Kelly, 1984).

It is worth noting that environmental problems have always been there, but we are now becoming more aware of them, and of the fact that environmental issues have begun to take on crisis proportions. The growing scales of the problem can be linked to rapid increases in the human population, increases in consumption, industrialization, and technological development. Ecological problems of today, for example, global warming and ozone depletion, have a more catastrophic effect than ecological problems of yesteryear. According to Huey-li-Li (1994), these catastrophic effects are likely to fall upon remote future generations, rather than the present generation, and therefore the need to take on a sustainable approach will arise.

Environmental education has thus evolved as one of the responses to the environmental crisis. Books have been written, like *Silent Spring*, meetings held, like the Rio Earth Summit, the Montreal Protocol, and the World Summit on Sustainable Development, among others, and recommendations have been made as to how the crisis should be avoided. However, environmental education was a key response, which was recommended by almost all delegates. According to Fien (1993), without communication and education, the other responses are not sustainable. In Agenda 21, which arose

from UNCED in 1992, it was agreed that education is critical for the promotion of sustainable development and increasing the capacity for people to address environment and development issues. Huckle (1995) argued that education for the environment should be a shared speculation with pupils on those forms of technology and social organizations, which can enable people to live in harmony with one another and with the natural world. Teachers and learners, therefore, play a central role in responding to the environmental crisis.

DEVELOPMENT OF ENVIRONMENTALISM IN ZIMBABWE

The development of environmentalism can be seen through the enactment of environmental laws, such as the Water Act of 1927, the Forest Act of 1949, the Water Pollution Control Regulations of 1971, and the Atmospheric Pollution Prevention Act of 1971. These acts resulted in the formation of the conservation agencies. This also resulted in the focusing on the people and the environment.

In the 1980s, problems of land degradation, agricultural decline, deforestation, disappearance of endangered species, rapid urban growth, urbanization, and pollution became noticeable. This highlighted the close links between the environment and the economy, which resulted in the general increase in environmental concern, which was heightened by the drafting of the National Conservation Strategy in 1987. Because of the above, there was a need to shift focus to the environmental issues.

In the 1990s, there was more concern for the natural resources conservation, rather than pollution control. Zimbabwe focused on sustainable consumption and use, especially in wildlife. This shift was opposite to Europe's focus on non-consumptive approaches. This raised some questions, but Zimbabwe's approaches started to bear some positive results. In 1987, the National Conservation Strategy was launched and, in 1992, Zimbabwe signed Agenda 21 which was the operational plan for moving humankind into the age of sustainability. In 2002, Zimbabwe had an encompassing Environmental Management Act. All these steps were taken as a result of pressure groups and the deterioration of the environment.

An increase in environmental awareness and activities also took place in the country. Environmental lobby groups, such as Environment Africa and Wildlife Society, became active. In schools and colleges, the environmental concern clubs proliferated. The media also played its role in coverage of environmental issues. The country hosted environmental world summits, like the CITES Conference in 1997 and the Solar Summit. Similarly, this has seen more roles played by schools in the environmental issues. The major question that can be raised is to what extent is Zimbabwean education system embracing the environmental issues in its curriculum.

EDUCATION ON THE ENVIRONMENT

It is a truism that, to date, daily life is fraught with environmental problems to the extent that there is no longer much questioning about the credibility of its epistemic warrant in the school curriculum. Curricularists have relegated the responsibility of placating environmental issues to the discipline of science. Huey-li-Li (1994) noted that, to a large extent, environmental educators share a faith that the scientific enterprise will proffer a technological fix for today's ecological problems. It is not, however, within the scope of this discussion to explore either the rationale or limitations of

this scenario. It would be suffice to say that it has led to the birth of a discipline in the school curriculum, namely environmental science.

A fundamental characteristic, which differentiates environmental science from other disciplines in the primary schools, is its pragmatic value, which cuts across the educational and social divide. Thus, Huey-li-Li (1994) raised a very poignant issue that the catastrophic effects of environmental problems are likely to fall upon the remote future generations, rather than the present generations. He further suggested that it is incumbent, upon the present generation, to undertake a moral commitment to care for the future generation.

Critical questions on the lips of researchers are, do Zimbabwean school curricula through science provide an opportunity to solve environmental problems and does the environmental science education lead to the inculcation of a moral commitment to care for the future generation? Perhaps part of the answers to these questions can be found in a document of the environmental science syllabus and the mode of the provision for environmental awareness in the school system.

Zimbabwe's commitment to environmental issues is reflected in the primary school curriculum, where it is taught as environmental science. In the national examinations, it is assessed in the General Paper. The breakdown of the General Paper is as follows: 40% environmental science, 32% social studies, and 28% religious and moral education. Environmental science questions in the General paper examination are more than other questions from all the sections of the paper taken together.

Environmental Science, for primary school, is an integrated subject which seeks to make pupils aware of themselves and the physical environment around them. It provides opportunities for people to investigate such problems as drought, deforestation, air and water pollution, and wildlife depletion, whilst also developing process skills and concepts in science. It is important that pupils are provided activities which develop a basic understanding of environmental issues and for them to develop positive attitudes towards the environment.

Some of the aims of Environmental Science are as followed. The pupils will develop an awareness of the scientific relationships between people and the environment, develop a positive interest in the environment, develop an appreciation of a well managed environment, use scientific knowledge and skills to influence and manage the environment and develop an awareness of the usefulness of science in the environment.

These aims are in line with the Tbilisi conference and UNCED guiding principles for effective environmental education for equitable and sustainable societies. They appeal more to the affective domain. This is important because attitude change is the moral grounding of environmental education. Huey-li Li (1994), argued that human nature is such that it cannot be indifferent even to the most remote epoch, which may eventually affect our species, so long as this epoch can be expected with certainty. It is therefore the moral obligation of the present generation to care and preserve the environment for the future generations.

In the primary school system, global concerns in the learning of environmental science have been shown by the financial assistance in the construction of the syllabus from the German Agency for Technical Cooperation and the Swedish.

Indeed, Zimbabwe has taken colossal steps in ensuring that pupils are made environmentally aware from the early years of primary education. A spiral curriculum, characterized by varying degrees of depth and breadth commensurate with grade level, has been adopted. This is illustrative of the continued efforts to emphasize the salient issues in environmental science education. Given the wide range of skills that the syllabus purports to inculcate and the methodology it intends to pursue, in principle from the start, pupils are made to understand and appreciate environmental concerns. However, such efforts, more often than not, have not been complimented by adequate supplies of instructional materials, which allow for interaction and participation in environmental issues.

In secondary school, environmental education is not offered in a distinct discipline, but is subsumed in science subjects. Teaching of environmental education at this level is by interdisciplinary approach, whereby various subjects, for example geography, science, biology, agriculture, are interlinked, the aim being to achieve the objectives lying in the areas where the subjects interact. Each subject contributes in some way to the realization of the objectives of environmental education. The successful use of an interdisciplinary approach, presupposes flexibility and readiness to include appropriate aspects of environmental education within existing curricula. It might even require the formulation of new curricula that requires teachers and learners to place themselves in situations that are really related to the environmental problem. Incorporating interdisciplinary approach into educational practice is an arduous task that can be achieved by degrees. In this approach, some specialized training of the teachers is required in order to enable them to teach a wider variety of topics within each discipline. The following are some of the problems of teaching environmental education at the secondary school level. They are, lack of appreciation of the importance of environmental education, a shortage of adequately trained educators, insufficient educational materials, lack of financial assistance for teacher's use, inadequate opportunities for field studies, no continuum from primary to secondary school and subjects where elements of environmental education are taught, for example geography, biology, or science, are not compulsory subjects at secondary school.

The structural constraints in this mode of provision is that pupils who do not take up these subjects at that level or the below average pupils may fail to see the progression and emphasis of the environmental issues.

CONCLUSION

Environmental issues have, among other issues, caused global concern. The Zimbabwean school system has underscored the salience of this crisis by making the environmental education worthwhile school knowledge geared towards providing equitable and sustainable environmental management choices. However the present scenario that the environmental issues are fully articulated at primary school, but somewhat lost at secondary school, certainly merits revision. There is the need to rethink the teaching of environmental issues. Environmental education is an important component of education and deserves to be taught at all levels and in all types of education for the purpose of understanding and addressing environmental problems. A continuation of environmental science as a distinct discipline up to secondary school level is, therefore, advocated. More still, a greater impact would be realized if environmental science is made compulsory, as is the case with the National and Strategic Studies in tertiary institutions and HIV/AIDS Education in primary schools. Environmental education should be seen as a process of continuous learning, a gradually acquired realization of the importance of natural resources and the need to use them wisely in a sustainable way for the

development of the country. Until a revision is made to the mode of provision of environmental education in the schools, efforts to make it a moral commitment will yield minimal results.

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