The Rhetoric-Reality Gap Of Environmental Education: A Challenge to Curriculum Development

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Introduction

Since its global emergence in 1972 and the various international, national and regional gatherings that followed, environmental education has been identified as a life long educational process aimed at developing understanding, skills, attitudes and action competence among citizens. These goals of environmental education can be achieved through an interdisciplinary and issue oriented methodology (in line with complex and multi-faceted nature of the environment) promoting the learner to take concrete actions to improve the quality of the environment (Pace, 1997; UNESCO-UNEP,1987)

Although these notions of environmental education are widely accepted world wide and various educational institutions have been readily engaged in the programme, the radical innovations in the educational system necessitated by environmental education has been seldom endorsed under several instances. This is primarily due to the complex and interdisciplinary nature of environmental education and due to certain substantiated factors which may emanate from such complexities.

Several studies conducted on the subject reveal that awareness, motivation and positive attitude towards environmental issues are significantly high among school children while the actual commitment of the students in environmental problem solving is found to be so low. Such a difference between intentions and commitment creates the rhetoric-reality gap in environmental education programmes.

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The paper attempts to explore those factors which revolve around theorising and implementing environmental education. It begins with introduction which is followed by a brief explanation of the concepts of environmental education and education for sustainable development. An overview of the curriculum elements of environmental education is made. Then the major factors which often create the rhetoric-reality gap in environmental education programmes are identified. Finally the writer's personal experiences and reflections are forwarded as concluding remark.

The Concept of Environmental Education

Environmental education has strong tradition in the form of nature study. In the 1970s when nature study was broader in scope as the concept of environmental education, individual behaviour was being determined by understanding environmental problems. Thus schools used to adapt predetermined philosophy of teaching and learning characterised by the notion of transmission of knowledge rather than encouraging independent learning (Kyburz-graber,1999:415-6). The concept has gained broader perspectives over years. As knowledge of environmental problems progressed and policies aimed at this area developed, a new approach of conceiving environmental education evolved. In this case the social, economic and cultural dimensions of the environment are recognised. The introduction of the concept of sustainable development brought about broader dimension in the concept of environmental education. Palmer (1998:4) noted that global acceptance of the centrality and importance of sustainable development is the hallmark of environmental education in the 1990s. Developments in the philosophy, policies and practices of environmental education have been myriad and complex. This means that developments in the field have transformed the view of environmental education from teaching about nature to action oriented and student-led problem solving field work in the 1990s.

The 1990s is the time of raising public awareness of scales, severity, and complexity of many environmental problems. Instead of seeing

the environment as just nature and natural system, people started acknowledging that the environment is also a human creation. That is, it is the result of the way we use nature and its resources to satisfy our needs and wants. There is also a growing recognition that environmental problems can not be understood without reference to social, economic, and political values, and that managing environmental crisis will depend on changes in environmental values and life style choices (Fein,1992:10). In supplement to this concept, Schleicher, a German environmental educator, writes on the need of "a new ecological ethic,... an ecologically oriented value system" (in Fein,1992:10). Ecologisation as an aspect of environmental education comprises the shaping of teaching and learning at school and the school environment by sharing responsibility among all players (pupils, teachers, headteachers, non-teaching staff, parents, citizens).This means that it addresses a process of new forms of learning and teaching (Rauch, 2000:254).

The scope of such changes in social values have been linked to the changes in social paradigms or world views of environmental education. Environmental educators such as Milbrath (1984,1989) and Trainer (1990), argue that socially and ideologically sustainable relationship between people and nature require the "dominant social paradigm" to be replaced by a "new environmental paradigm." These paradigms have their own influence on the concept of environmental education.

The dominant social paradigm views nature as subservient to human needs and economic growth. It gives less importance to the necessity of environmental education which claims the balance in natural resource utilisation. On the other hand, the new environmental paradigm views people and nature as interdependent. Values in the new paradigm include: a high regard for nature, respect for nature and careful planning in order to minimise threats to nature and the quality of life (Fein,1992:11). Environmental education from the point of view of the new paradigm is supposed to play important roles in transforming values and empowering people to participate in

environmental improvement and protection. **"An important condition to develop and transform values which are environmentally sound is to involve students in actions in which they are able to leave traces and in which they feel that their effort can make a difference"** (Posch,1993:31).

Fein (1992:22-23) made an attempt to provide a more explicit concept of the subject taking into account multiple discourses and contests over the nature and meaning of environmental education. He identified the following three discrete forms of environmental education:

Education about the Environment

Education about the environment is the most common form of environmental education .Its objectives emphasise knowledge about natural system and processes. It also involves ecological, economic and political factors that influence decisions about how people use the environment. Knowledge of the interactions between natural systems and social systems is considered an essential requirement for resolving local, national and global environmental issues .

However, the integration of natural and social system is often neglected in programs of education about the environment. This means that there has been a marked tendency for science and geography (the two school subjects traditionally associated with teaching about the environment) to focus on ecological concepts and technical solutions to environmental problems at the expense of changes in social systems necessary to solve them.

Education through the Environment

Education through the environment uses students' experiences in the environment as medium for education. The aims of this learner centred approach to environmental education are to add reality, relevance and practical experience to learning, and to provide

students with an appreciation of the environment through direct contact with it. Education through the environment may also foster environmental concern if students become captivated by the importance of ecosystems and the beauty of landscapes.

Education for the environment

Education for the environment has an overt agenda of values, education and social change. It aims to engage students in the exploration and resolution of environmental issues to foster the values of the New Environmental Paradigm, and to promote lifestyles that are compatible with the sustainable and equitable use of resources. In doing so, it builds on education about the environment and through the environment to develop an informed concern for the environment.

Reflections on the relative strengths and weaknesses of these three approaches to environmental education have led many environmental educators overseas to argue that it is only when the overt intention of the program is education ***for*** the environment that effective environmental education is actually taking place. Education ***about*** and ***through*** the environment are valuable only in so far as they are used to provide skills and knowledge to support the transformative intentions of education ***for*** the environment

One can provide a thorough analysis on the concept of environmental education based on the aforementioned arguments. Environmental education is a value laden educational process aimed at developing skills and attitudes necessary to understand and appreciate the relationship between man, his culture and his biophysical surroundings. It prepares people for living as a member of biosphere. It is an interaction between people and nature. It is the learning process to understand, appreciate and work with and sustain environmental system in its totality. Environmental education is education in problem solving. But problem solving from a philosophical basis of sustainability, enhancement and stewardship.

As alluded some where else in this paper, the emergence of the concept of sustainable development has brought about the broader dimension in the concept of environmental education. Thus, it seems important at this juncture to provide some more highlights with respect to the term education for sustainable development and some thoughts for the betterment of teaching and learning in this regard.

Education for Sustainable Development: Some thoughts for the Development of better Teaching and Learning in Developing countries

The concept of sustainability first emerged in 1980s though it did not form part of the vocabulary of environmental education until the 1990s.The term was first given currency by the **World Conservation Strategy** and later reinforced by the **World Commission on Environment and Development-the Brundtland Commission** which introduced the term sustainable development in 1987 (Pieters,1996; Tilbury,1995). Nevertheless, the concept has failed to enter the common language of the citizenry because its referents are too vague to motivate action. As for Elliott (1998), the concept of sustainable development renders environmental issues too complex for ordinary people to understand and feel empowered to do something about, and makes the environment a subject for specialised discourse of economics and ecology (p.36).

A large part of the appeal of sustainable development is that ostensibly it brings into harmony two politically attractive but potentially conflicting notions. Firstly, the idea that is valued, but which is currently endangered through depletion, pollution and so forth. Secondly, the idea of accommodating ongoing human aspirations to develop, i.e, in some sense to have better or more (Bonnet, 1999:314).The latter notion has particular importance in a situation where large parts of the global population are regarded as suffering from '**underdevelopment**' and therefore seems just and realistic to expect them to change for the better life style.

Despite its ambiguity and different notions that it entails, the term 'sustainable development' has its origins in the socio-political rationalisation of the increasing alarm over the state of the environment. This means that concerns about the resource depletion on the one hand and the destruction of the natural habitats and the increasingly rapid process of the remodelling of the environment on the other are brought together under the umbrella of actions which largely maintain the global power structure. Thus, the term sustainable development provides one possible starting point in the quest of the educational policy that supports the ideals of an education dedicated to maintain balance between the competing needs and desires of people and the environment.

To this effect, the roots of education for sustainable development are firmly planted in environmental education (UNESCO,1997). Owing to its interdisciplinary nature and its present and future relevance, the study of issues relating to ecological, economic and sustainable development offers the starting point for innovation at school (Rauch,2002). It was the World Conservation Strategy which first redirected the goals of environmental education towards what it referred to as ' education for sustainable development'. In fact, this required a reconceptualisation of some aspects of environmental education which would give greater prominence to the root social, political and economic causes of environmental situation (Tilbury,1995:197).

As the ultimate goal of education for sustainable development is the need to combine environment and development concerns, it is likely that it links poverty, development and the environment. Though it may be equally important, education for sustainable development seems more relevant for developing nations where environmental destruction and 'underdevelopment' have multifaceted effects on the life of people. In other words, education can play a key role in the situations where some rural people in developing countries destroy the natural resources with the intention of free themselves from starvation and poverty.

The reaffirmation of the contribution of education to the developing nations needs to be made in this regard. This means that the central goals of education must include helping students to learn how to identify elements of unsustainable development that concern them. Students need to learn how to critically reflect on their place in the world and to consider what sustainability means to them and their communities. They need to practice envisioning alternative ways o development and living. Furthermore, they need to learn how to negotiate and justify choices between different alternatives. These could be the skills and abilities which underlie good citizenship, and make education for sustainability part of a process of building an informed and concerned populace. In this way education for sustainability may contribute to education for democracy and peace which are at the same time sine qua non for the developing countries.

Curriculum Elements of Environmental Education

There are various elements to be considered in developing environmental education curriculum. These elements have been referred to and expressed in different ways in a number of documents and curriculum statements. Important elements which are significant and relevant in environmental education program are outlined as:

The Empirical Element

This is concerned with those aspects of the environment that lend themselves to objective demonstration, measurement and analysis. The main priority is to ensure that all pupils have as many opportunities as possible of making direct contact with the environment through observation and by measuring, recording, interpreting and discussing what has been observed.

The Synoptic Element

The aim of synoptic studies is to help pupils realise the complexity of environmental issues and to introduce them to the inseparable nature

of the various components of the environment and to the inter-relations of these components.

The Aesthetic Element

Of the many aspects of the environment, perhaps the most important is qualitative rather than quantitative. The aesthetic elements help pupils to realise that there is no right or wrong answers in absolute terms to aesthetic questions and that the answers to environmental issues are frequently a compromise.

The Ethical Element

A program of environmental education aims at introducing pupils to the idea of personal responsibility for the environment and the concept of stewardship. It trains pupils to ask if the criteria of proposed actions are based on morally justifiable values (Palmer,1998:141-142).

These four elements are useful in any environmental education program in that they help to make the link between the three 'threads' of environmental education and the dimensions of learning explained so far. In other words, these elements are helpful to fuse together the 'three-fold' structure of environmental education (education **about, through** and **for** the environment) so as to make planning for teaching and learning tasks easier. The following figure shows the link between these elements and the three conceptual 'threads' of environmental education.

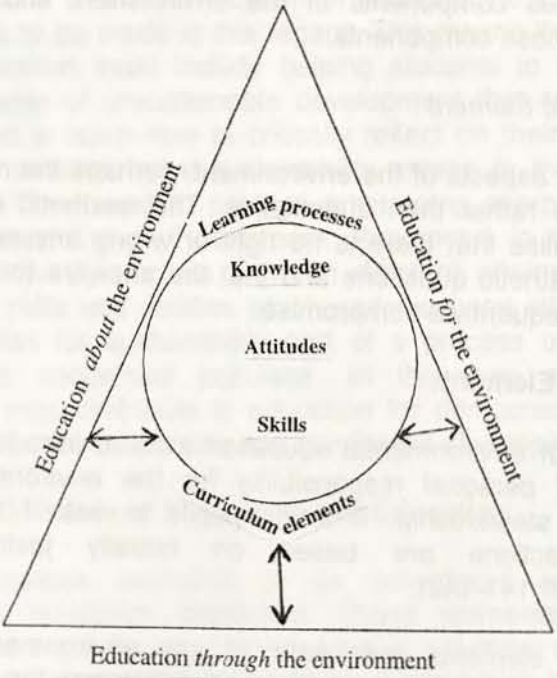

Figure 1. Interrelated components of environmental education

Factors that create the Rhetoric-reality gap of Environmental Education

New educational problems are expected to be encountered when ever innovative methods are developed to give education new relevance. These problems are certainly of different kinds. The question of match and mismatch between rhetoric and reality in environmental education is one of the problem areas worth mentioning in this regard. This means that a number of substantiated generalisations illuminate a range of conflicts, inconsistencies and

limitations impeding the implementation of environmental education (Palmer:1998:96).

The introduction of environmental education into a school curriculum represents a fundamental challenge to the dominant conception, organisation and transmission of knowledge creating for most teachers a conflict with their approach to teaching and learning. This conflict creates a gap between the acquisition of environmental knowledge in 'traditional' school programs, and the action oriented goals of the contemporary rhetoric of environmental education. In other words, this conflict can create a series of major contradictions between environmental education and schooling (Robttom,1983; Stevenson, 1987).

One of the contradictions between environmental education and schooling is the one that persists between curriculum and pedagogical issues. The goals, principles and guidelines of environmental education suggest a particular orientation of curriculum and pedagogical practices in which students engage individually or in groups in problem solving and action based activities. Inevitably such a focus calls for interdisciplinary and flexible inquiry. In contrast, however, school curricula tend to be discipline based and emphasise abstract theoretical problems. The curriculum can be described as the mastery of fragmented facts, concepts and generalisations organised loosely within fields of study. The predominant pedagogical process involves the teacher as dispenser of factual knowledge (Stevenson, 1987).

The contradictions and inconsistencies between environmental education and schooling can be inevitably linked to school and classroom organisation, and day-to-day practicalities of formal education. The style of learning in environmental education involves teachers in far more complex organisational methods than the style of learning associated with traditional subject knowledge acquisition tasks. As some research reports indicate the majority of teachers in the formal education sector are unlikely to take readily to the

demands of implementing action oriented and open ended inquiry into environmental issues. Even given the motivation and commitment to take this challenge, the vast majority of teachers would cite lack of timetable (because of the need to meet the statutory requirements), lack of resources, lack of staff expertise and lack of staff motivation as major constraints for declining to do so (Tomlins and Froud,1994).

The attribution of teachers to these constraints in order for not taking active participation in developing environmental education programs holds true apparently through out much of the world's formal education provision. These constraints are more serious in developing countries than the developed ones. Here, special mention needs to be made of the extreme shortage of graduate teachers both for primary and secondary schools in some developing countries that compels many schools to run their activities by unqualified personnel. The very slow educational progress in developing countries in general can be attributed to these and other similar constraints.

Experiences and Reflections: By Way of Conclusion

Based on some research practices in the developing nations and readings on the global perspectives, this section deals with writer's personal experiences and reflections with respect to the subject under discussion.

It is obvious in most cases that the notion of environmental education is widely acceptable and recommendable by authorities or policy makers regardless of boundaries and political ideologies. It has been observed, however, under various circumstances that environmental education remains to be rhetoric rather than being the reality. Though such a limitation may hold true through all over the world, it has received a special attention in the developing nations.

Attention has been called to the fact that one of the major constraints to the implementation of environmental education in developing countries is the lack of adequately trained personnel. Teachers are

usually called up on to handle environmental education topics in which they lack a prerequisite training. This means, in the first place, teachers lack the expertise to actively engage students in environmental issues. They have misconceptions about the nature and the scope of environmental education. This means that they cannot draw the clear picture of environmental education within the subject they teach.

Secondly, as the result of lack of appropriate training in environmental education, most teachers value discipline based teaching, systematic knowledge, didactic teaching methods, the avoidance of controversy and innovative forms of teaching. This has incredibly affect the development of environmental education.

Thirdly, teachers are found unable to consider the tensions and contradictions which confront the implementation of environmental education. This means that the they are not equipped with the necessary skills and strategies that would enable them to work in the institutional context of schools where inflexible timetable and specialist subject departments exist.

The irrelevance of curriculum is another notable factor which paralyses environmental education in the developing countries. The content analysis research practices of curricular materials of some developing nations reveal that only shallow environmental facts and information are conveyed to the students in the schools. The findings further disclose that no opportunities or learning experiences are provided that would enable students to engage in real environmental problem solving. Further more, the curriculum has always been designed by educational authorities in the top-down approach neglecting the local realities in the community.

It is worth mentioning the influences that lack of resources and facilities impose on the implementation of environmental education. It is a common experience in the Third World that the schools are over

crowded beyond the capacity. For instance, it is so common to see that a book is shared among 3 to 5 students in the secondary schools in Ethiopia. As the result of over crowded class room, free movement for both the teacher and the students in classroom is almost impossible. In the majority of secondary schools the average number of students in each classroom is about 85. Thus, it is hardly possible for the teacher to know each student by name and to facilitate independent teaching-learning process(particularly in twons).

It is not difficult to imagine the implications that such a shortage of resources and facilities have on the implementation of environmental education. The nature of environmental education requires independent and critical thinking of both the teachers and the students. It seeks active involvement and participation. Successful environmental education encourages students to be active participants rather than being passive recipients of information. Notably its success in motivating students through active pedagogical methods is so vital to the present and future lives of students (OECD, 1995).The attainment of such a significant values of environmental education may not be successful under high pressure where schools suffer from the shortage of necessary resources and facilities.

Lack of flexible school management and administration is another barrier impeding difficulties on the implementation of environmental education in developing countries. In most developing countries, ministry of education has been a monolithic organisation in all intents of education system. In this case the schools are obliged to implement the top-down policy of the ministry. The school days and the timetables for each school are centrally decided by the ministry of education. There are no opportunities to introduce at least some kind of flexibility in the school programmes. Such a rigid administration of schools does not provide alternative solutions for environmental education which requires flexibility in its very nature.

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