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RESEARCH ARTICLE

Nature of Environmental Education in Bangladesh: A School Level Assessment with Reference to the National Curriculum

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Abstract

This paper attempts to identify the nature of formal environmental education in Bangladesh at school level with particular reference to the national curriculum. The main objective of the study is to assess the contents of the school text books for each standard, and to see whether the diversified themes covered are a good representation of contemporary environmental issues or not. Attempt has also been made to examine the organizational aspects of the prescribed text books for each standard. The overall finding is that the school textbooks on environment are found not only ill organized but also there is a lack of integrity for logical progression; there is ample scope to include emerging issues such as climate change and human adaptation in the Curriculum. Revision of the Curriculum, re-orientation and reorganization of the textbooks with an interdisciplinary and holistic approach are strongly recommended.

***Keywords*:** Environmental degradation, ethics, climate change, ecosystems and sustainable development.

Introduction

Environmental education (EE) refers to organized efforts to teach about how natural environment function, and particularly, how human beings can manage their behaviour and ecosystems in order to live sustainably. According to UNESCO Tbilisi Declaration (1977)- the world's first intergovernmental conference on environmental education, EE is *a learning process that increase 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.* It means the capacity of an individual to understand the complex environmental problems in order to enable him or herself for analysis, synthesis, evaluation, and ultimately sound decision making at a citizen's level.

Modern EE focuses on how ecological realities and human desires to increase their material standard of living often clashes, leading to phenomena we call 'environmental degradation'. EE makes people conscious about the environment both scientifically and socially. It discovers the symptoms and root cause of environmental degradation, and aims to create consciousness based on environmental ethics that foster understanding about the ecological inter-dependence and of economic, social and political factors. Enhanced knowledge about the environment brings attitudinal and behavioural changes, leading to community empowerment and mobilization. Changes in values, attitudes and individual behaviour towards the environment can certainly result in a better quality of corporate life. A number of ecologically damaging activities could certainly be stopped simply by informing people who indulge such activities about their consequences.

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EE is evolving to be the education for life. Because, it is preparing people to plan and undertake appropriate measures for addressing most pressing challenges of our time. EE now has become a new paradigm of development thinking, which can meet the challenges of a rapidly changing world. It is considered to be an important education policy at the national level due to present global agenda and demand for 'sustainable development'- a term first used by the World Commission on Environment and Development in its report "Our Common Future" (WCED, 1987). It comprises the subjects of environmental protection, the maintenance of ecosystems and responsible attitudes among members of society including the business community. It is expected that EE can foster a positive pattern of conduct towards the proper utilization of environmental and natural resources. EE seeks to provide facts, information, answers, opinions, or skills to make rational decisions and take environmentally sound actions. It neither advocates a particular viewpoint nor admires any definite course of action. Instead, it teaches individuals how to weight various sides of an issue through tradition friendly to the environment; promote understanding and cooperation among people to face ecological challenges. It is irrational to expect people to act in an appropriate manner without awareness of the problem, its causes, impacts on our daily life, and the long term consequences. EE is not merely the conveyance of knowledge, but a process of learning about the concept of political action (Miller, 1996).

These goals of EE are well recognized by the U.S. National Environmental Education Act, 1990. To realize these, the U.S. Environmental Protection Agency (EPA) proposed some specific objectives which may be of interest to all include: (i) an awareness and appreciation of our natural and human (built) environment- socio-cultural; (ii) knowledge of natural systems and basic ecological concepts; (iii) acquaintance with a broad range of current and emerging environmental issues; and (iv) experience and the ability to use analytical skills (investigative and critical-thinking) in solving environmental problems. The ultimate purpose of EE is to give one as a learner an analytical framework and a set of concepts that one can use to judge environmental issues, to guide his/her own life, and our responsibility to future generations as decision makers (Cunningham, 1997).

Educational Systems

The three main educational systems in Bangladesh, ordered by decreasing student numbers, are: General Education System; Madrasha Education System, and Technical – Vocational/Professional Education Systems. In Bangladesh, EE is taught formally at 3 levels under General Education Systems: School comprising of Primary, Junior High and Secondary; College (Higher Secondary/Intermediate) and University-(Post Secondary or Tertiary). Each of these three main systems is divided into four levels: Primary Level (years 1-5); Junior High (years 6-8) and Secondary Level (years 9-10); Higher Secondary Level (years 11-12), and Tertiary Level. However, this paper focuses on EE at school level since they are largely supported by the Government, and share the same National Curriculum and Textbooks approved by the Textbook Board, Dhaka

Objecvtives

The objectives of this paper are three-fold: (i) to identify the nature of environmental education in Bangladesh at school level, (ii) to assess the national curriculum requirements for each standard, and finally (iii) to prescribe some policy recommendations for the improvement of formal environmental education quality in Bangladesh

Materials and Method

Data and relevant information materials for this paper have been collected, analyzed and reviewed where necessary from different sources: Library, references in the official and semi-official records, published reports, books, journals and newspapers, and other relevant databases- Internet. The method followed in the study basically involved the survey of school text books on environmental education for each standard, as prescribed by National Curriculum and Textbook Board, Dhaka. Information provided in Table 1 and Figure 1 were generated after through survey and review of relevant text books contents, conducted in collaboration with the Principal and Vice-Principle, CDA Public School and College, and Chittagong University School and College, Chittagong, respectively. Guided by the prior knowledge and experience of the researchers, a number of focused interviews with some important institutions and randomly selected key resource persons such as school Principals, Vice-principles, and relevant course teachers were also conducted in Chittagong Metropolitan City (where the researchers are based) to have their viewpoints on the issue. The analysis, findings and recommendations have been based on all these.

Results and Discussion

The survey results show a few interesting points about the nature of environmental education in Bangladesh. In general, the school text books on environment in Bangladesh are found rich in materials covered including their treatment and explanation. These are well written in a manner that can be easily understood by the learners. The thrust there has been to facilitate the young learners to get to know how they can make best uses of their environment and also to preserve it properly. However, they fall short in their attempt; the listed topics are found seldom objective and presented as an end in itself rather than as a means to an end. Environmental aspects of education have been described mostly from knowledge point of view or more correctly from a subjective perspective (physics, chemistry, biology etc.), but have not been introduced in an interactive manner- i.e. man-environment relationship. In fact, EE has not received its proper weight as yet under the National Curriculum. The EE syllabus has been not only brief, random, and fragmented but also incomplete; there is a general lack of continuity or logical progression; it is incomplete and there is hardly any goal or destiny for the learners. Students can not be easily assessed by the well established criteria for environmental literacy.

Moreover, the school text books on environment are broadly organized under two distinct categories entitled ‘General Science’ and ‘Social Science’ that are used at three school levels: Primary school (Standard 1-5), junior high school (Standard 6-8) and secondary high school (Standard 9-10). Content analysis of these text books reveals that they represent an array of traditional geographic themes i.e. the basic components (air, water, soil etc.) of our natural world including some contemporary environmental problems such as pollution and natural disasters. Although the physical geographical aspects of the environment have been the main focus of the text books, environmental problems such as natural resources degradation and depletion-biodiversity, energy, urbanization etc. are not well represented. The only enduring environmental problem which is well covered in the text is natural disasters in Bangladesh. Emerging environmental issues such as climate change and human adaptations, however, did not receive any attention at all, and is missing from the texts (Table 1).

Further, the frequency distribution of enlisted topics under ‘General Science’ category indicates that environmental themes in the text books are less significant in terms of

weight (only 10 percent) in the secondary high school (Standard 9-10) compared to primary and junior high schools (Fig. 1). Of the 21 Chapters under secondary 'General Science', only 2 Chapters are devoted to environmental topics. Similarly, frequency distribution of secondary 'Social Science' topics appears even more striking. Although Standard 4, 5 and 7 report only 10-11 percent representation of environmental topics, in the case of Standard 6 it is less than 1 percent. Out of 14 Chapters in junior high "Social Science", only one chapter namely 'Natural Disasters of Bangladesh' in Standard 6, has been devoted to environmental studies. On the other hand, environmental topics including physical geography under secondary 'Social Science' (Standard 9-10) though have revealed 37 percent representation (compared to other subjects such as History, Political Science and Economics), it is nothing but a gross mistake. The topic listed under secondary 'Social Science' in Chapter 8 (reprinted in 2010), entitled "Disaster Management and Bangladesh" is the identical topic which was also listed under secondary 'General Science' (reprinted in 2009). Why is this duplication? This may be partly due to the fact that the authors and editors of the secondary 'General Science' (5 authors and 4 editors) and secondary 'Social Science' (3 authors and 5 editors) are not necessarily the same people. Whatever may be the reasons, it is apparent that the National Curriculum and School Textbook Board, Dhaka has failed to check out the redundancy in environmental topic distribution in the relevant textbooks for each standard.

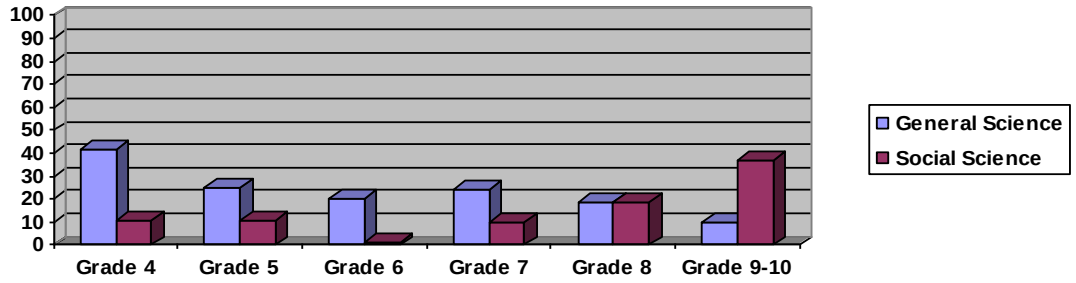


Table1. Percentage distribution of environmental topics under General and Social Science at school level in Bangladesh

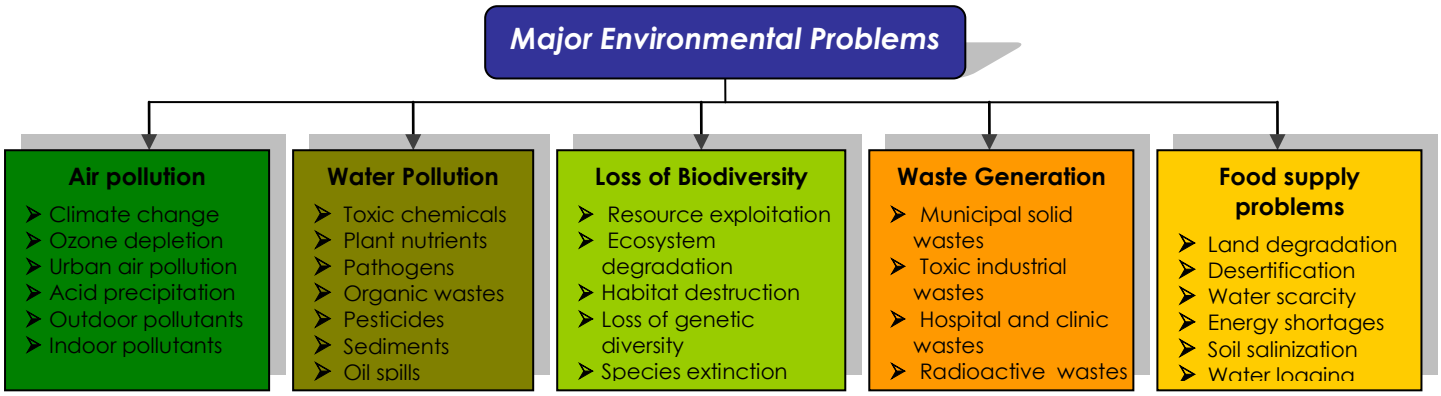


Figure. 2. Dimensions of Environmental Problems

There is also a gross organizational problem in the arrangement of topics such as lack of sequence that are listed in the school textbooks (by chapters) for each standard. The themes are neither systematic nor well-integrated and articulated to reach to an aspired goal. Further, there are themes that are 'taught at the primary level and also

found to be continued till the end of the secondary stage. These were done without making enough efforts for improvement (in terms of the degree of complexity) to the next level. So, an integrated subject on Environment is essential. In a multidisciplinary set up, activity-oriented methods of teaching are generally lacking in the present school curriculum due to a number of factors that came out from the focused interviews: (i) lack of efficient, experienced and well qualified/trained teachers, (ii lack of basic educational infrastructure such as suitable classroom, lab. facilities and work space, (iii) lack of teaching aids/ educational equipments, audio-visual materials, etc, and (iv) provisions for necessary teacher training.

Today, we see that modern EE is increasingly becoming interdisciplinary, preparing people for global citizenship, and training them to be flexible, yet competent, analyst and decision makers. These are not objectives that are easily reconciled in one subject area, therefore, needs a proper orientation and approach. Interdisciplinary differs from multidisciplinary in the sense that it draws upon common themes of process and evolution that embrace both physical and social systems, and usually requires team work and close collaboration between teachers, students, and phenomena being studied. On the other hand, multidisciplinary draws upon a variety of disciplines for information, analysis and insight, but does not seek to create a broader and more integrated understanding of what and why (Riordan, 1995). Such is the case of our formal EE in Bangladesh where there has been a growing concern for the development of EE's potential, particularly in its implementation and effectiveness. We are afraid that in considering a multidisciplinary approach, the Textbook Board probably took a narrower view of what constitutes a general/ liberal education program rather than education for sustainable development. In such a way, we can not assure EE to be the systematic study of our environment and our proper place in it. Since both worlds- natural and social, are essential to our lives, environment should be defined and viewed in its totality- as the aggregate of all external factors and conditions that influence the activities and existence of all living things including human beings Therefore, one should be looking for integrity and continuity in EE course contents, particularly in the organization of materials.. A multidisciplinary approach does not help young pupils to understand the wholeness of the environment.

Need for Climate Change Education

Bangladesh faces a number of interconnected environmental and resource problems. Of all, the challenge of climate change due to global warming is undoubtedly the single most pressing environmental issue of our time (Fig 2). In the past three decades, concern has grown over the trend in global warming; the general trend of a persistent warmer world has given rise to this concern. However, this important topic has been missing from the school text books of Bangladesh. There is ample scope in the text books for the inclusion of climate change topic with human adaptation measures.

Bangladesh has frequently been cited as one of the most climate vulnerable countries in the world, and will be even more so as a consequence of climate change. There are predictions that natural extreme events such as floods, tropical cyclones, storm surges and droughts will become more frequent and severe in the coming years (Ahmed, 2006; Huq, 2007; Alam, 2010). The impacts are multi-dimensional; many of the anticipated adverse effects of climate change such as higher temperature induced monsoon precipitation, increase in cyclone intensity, saline intrusion, and sea level rise and so on will further aggravate existing ecological stresses. The affected sectors which have been identified so far are: (i) agriculture and fisheries; (ii) forestry and biodiversity; (iii) hydrology and water resources; (iv) coastal zones; (v) urban areas; (vi) human health; and (vii) particularly vulnerable groups (Rasheed, 2008). The

impacts could be detrimental to the people of Bangladesh. These phenomena will not only threaten the achievements Bangladesh has made (in increasing income and reducing poverty) over the last 35 years, but also will make it more difficult to achieve the Millennium Development Goals (MDGs).

The core elements of Bangladesh's vulnerability to climate change are, however, contextual: disadvantageous geographic location, high population density, scarce natural resources, poor socio-economic conditions, extreme poverty, reliance of many rural livelihoods on climate sensitive sectors and inefficient institutional aspects. It is, therefore, essential that Bangladesh now prepares to adapt herself with the changing circumstances, and safeguard the well-being of its citizens (Rahman & Alam, 2003). The Government of Bangladesh is fully committed to deal with the threats of global climate change. In 2005, the Government launched its National Adaptation Program for Action (NAPA). In 2008, the Government prepared and adopted the Bangladesh Climate Change Strategy and Action Plan (BCCSAP). The document is expected to reflect among other things the changing needs and the development priorities of the country. To this end, the Government has already made climate change an integral part of the Poverty Reduction Strategy Paper (PRSP), which outlines its short-run strategies, and lays the foundation for continuing efforts to achieve MDCs, and build a fair, equitable and just society. The six pillars of action that are added by BCCSAP in line with the priorities of the Government are: (i) Food security, social protection and health; (ii) comprehensive disaster management; (iii) infrastructure; (iv) research and knowledge management; (v) mitigation and low carbon development; and (vi) capacity building and institutional strengthening (GoB, 2009).

Conclusion

The prospect of EE in Bangladesh is promising, although the existing programs at all levels are far from satisfactory in terms of effectiveness. There is a genuine need to create countrywide awareness of EE with a focus on climate change and human adaptations.. A number of initiatives which are likely to improve the overall situation are: (i) Revise and update the National Curriculum considering the environment in its totality; (ii) form Editorial panel comprising of experts in their respective fields, making sure that their professional integrity and possible continuity to render services are not under question; and develop monitoring system where necessary to ensure that curriculum requirements are met; (iii) rewrite and reorganize textbooks in an integrated and objective manner, and also in a single sequence (Series for level 1-8; 9-10 and 11-12) bearing in mind of attainable competencies; (iv) develop an interdisciplinary but holistic approach with a balanced perspective; (v) examine major environmental issues at all scales (local, national, regional and global importance) with a focus on current and potential threats (e.g. climate change); (vii) set exit criteria for environmental literacy at each level, keeping in mind that curriculum requirements are fulfilled; (vii) and find qualified Instructors/ Teachers to take care of EE courses.

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Biographical statement

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Bangladeş'te Çevre Eğitiminin Doğası: Ulusal Müfredata İlişkin Okul Düzeyi Değerlendirmesi

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Özet

Bu araştırma Bangladeş'teki formal çevre eğitiminin ulusal müfredata ilişkin olarak okul düzeylerini tanımlamaya çalışmaktadır. Çalışmanın temel hedefi, her standart için belirlenen ders kitaplarının içeriğinin değerlendirilmesi ve bu kitapların günümüzdeki çevre sorunlarını yansıtıp yansıtmadıklarını anlamaktır. Ayrıca çalışma her bir standart için kurallarca belirlenmiş ders kitaplarının organizasyon konularını incelemektedir. Araştırmanın genel bulguları, çevreye yönelik ders kitaplarının hem kötü organize edildiği hem de mantıksal gelişim açısından bütünlük eksikliği olduğu şeklindedir. Müfredatta iklim değişikliği ve insanlığın adaptasyonu gibi acil konularda çok fazla konu vardır. Müfredatın gözden geçirilmesi, ders kitaplarının uyumlandırılmasının yapılması ve yeniden organizasyonu ile disiplinler arası ve holistik yaklaşımın kullanılması önerilmektedir.

Anahtar Kelimeler: Çevresel bozunma, etik, iklim değişikliği, ekosistem ve sürdürülebilir kalkınma.

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