

BIO-EDUCATION FOR ALL: ACHIEVING ENVIRONMENTALLY LITERATE GLOBAL CITIZENS

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It is a generally accepted perception that people, the world over, are being educated all their lives, from the cradle to the grave. Education, as such, has to do with the proper upbringing of children, the development of their mental and physical powers, as well as the formation, moulding and direction of their characters. In a word, education is development and development is the concern about meeting the needs of future generations for a better quality of life. Every citizen is assumed to have the right to claim, from the State, an education suitable to his or her capacity, without reference to social rank. Conversely, if the State has the obligation to educate its citizens, does it also have the right to claim an education paralleled by that obligation?

Almost all nations today are aware of the most fundamental environmental issues facing the global community - how to reconcile human activities with the environmental laws of nature. Whether we live in affluence, in an industrialised country, or belong to the 1.2 billion people who live in absolute poverty, we are all neighbours in an interlinked world. Poverty, environment and population can no longer be dealt with, or even thought of, as separate issues, as they are evidently associated with each other in practice and must be linked in policy formation. Poverty degrades, not only those who suffer it, but also those who tolerate it. Apparently, the gap between the rich and the poor is widening, both within and between countries.

Despite deeply felt concern about the pollution of human health and our world, people continue to abuse the air, water and land that sustain our lives. Accordingly, there seems to be a need to chart and transform these concerns into a new environmental ethic, one that sustains humankind and its global village. Social scientists have implied that lifelong education could make this critical transformation possible. This paper postulates that education is the vital ingredient in the global effort to achieve environmental quality. Consequently, one may ask, how does development affect the lives of the least educated class, particularly those at grassroots level, ignoring for the moment the highest level of educated elite, with modern ideas, views and lifestyles? How can universal environmental education become an integral part of developmental projects and vice-versa? These are some of the perplexing questions which form a premise in the development of this presentation and which require a critical analysis and a factual appraisal, in order to support the arguments for identifying acceptable educational values, derived from global concerns about the preservation and protection of our bios.

The subsidiary theme of this paper is that an environmentally literate and motivated citizenry is the key to successful bio-environmental protection and conservation. Children, adolescents and adults are potential constituents whose energies and capabilities must be harnessed and guided, to achieve this elusive goal. Governments in Africa, Asia and the Pacific, Latin American and the Arab world have demonstrated their concern through regional programmes of action on bio-environmental education and training. In 1975 UNESCO and the UN Environmental Programme (UNEP) launched an international environmental education project to promote environmental education for all age groups, both within and outside the formal educational system. The conference in Tbilisi, USSR, in 1977, developed guidelines and programmes designed to urge educational institutions to promote environmental education, as a subject in its own right, and as a facet of other subjects. In 1987, UNESCO and UNEP published the International Strategy in the Field of Environment Education and Training for the 1990's. Through the International Environmental Education Programme (IEEP), UNEP and UNESCO, approximately 12,000 key educators have received in-service training activities in 150 countries.

The Biopolitics International Organisation has progressed remarkably, after its inception in 1985. Five years later the I.U.B.E. was launched and many different educational establishments manifested their interest in including bio-environmental concepts in their curricula. One ideal function of the I.U.B.E. is to promote reform in education world-wide, in order to shift to a bio-centric curriculum by placing bio-environment themes or topics at the core of all areas of specialisation. This is a key move, to assure generations to come, of our deep concern to create a safer existence for all people. Realistically, however, this approach necessitates a greater degree of diplomacy and tact, if we are to persuade the traditional education leaders of the world society, to revise the curriculum content of their educational systems. Without doubt, the infusion of bio-environment education is certainly crucial to global civilisation, if we are to realise this end. Nothing less than lifelong environmental literacy is required for humankind's survival. Bio-environmental education must be designed to educate the population in all walks of life. This universal partnership, with the I.U.B.E., could permanently transform the way the world thinks and treats life around it. B.I.O.'s significant contribution to this attempt, may be considered as a drop in a huge barrel, but its deep significance to the entire macrocosm, to me, is as big as the barrel itself. This enthusiastic endeavour, through the initiative and democratic leadership of Dr. Agni Vlavianos-Arvanitis, president and founder of the Biopolitics International Organisation and the I.U.B.E., makes one feel that the success of a leader is the triumph of all concerned.

Human Rights versus Universal Values and Global Responsibilities

The fundamental transformation of the global community's education, in terms of the international political system, the world economy, and the natural environment, presents an extra dimension to universal human values and their classification as human rights, duties and responsibilities. The scale of global change calls for an in-depth analysis of the complex relationships between rights, duties and responsibilities. A typical example, in this category, is the recognition of responsibility for the negative aftermath of the build-up of carbon dioxide in the atmosphere, which has implications for an individual's right to development and welfare. Conflicts are also arising between human needs and those of other species, as well as, the rights of cultures and nations and the rights of humanity, as a whole. Internationalisation of the market economy is in conflict with local self-reliance and external social values are being imposed, as a result of mass communication technology. New and multi-lateral educational approaches at all levels are required to resolve such conflicts if, we are to manage this trans-formation peacefully. Human rights and cultural values should therefore be incorporated and discussed in class by educators, for instance, the values of cultural, ethnic, linguistic or religious minorities, which have been ignored in favour of short-term economic gains, as a result of political pressure. Consideration of universal human values when dealing with social and political realities, development, governance, economic growth and other such issues, must harmonise with human rights and responsibilities.

Education for Managing Global Change

The foremost aim of the B.I.O. is enhancement of the happiness and well-being of humanity, with due regard for the bio-environment. Flexibility and adaptability are essential elements of the educational enterprise, to achieve success in managing global innovation. The creation of environmental awareness is essential for both its management and assessment, which could be implemented through environmental education and training, as well as public information dissemination intended for the general public and specific occupational and social groups, decision-makers, women who play important roles in agriculture, scientists, and technologists.

One strategic approach to education and training is based on the assumption that environmental problems require cross-sectoral and interdisciplinary solutions. The compelling forces which operate on the management of environmental change can presumably be understood through collaborative efforts and by incorporating diverse cultures and regions. This can be recognised through the achievement of a much higher level of awareness and the actual application of the desired output for positive change.

Local research into economic policies, capable of overcoming chronic poverty and unemployment which is basic to human needs, should be encouraged and supported through realistic application and possible financial aid.

Education for Environmentally Literate Global Citizens

Factually, the world is perplexed about the kind of education needed for the so-called wealthy elite, living in industrialised cities, who appear to be responsible for felling forests to smelt iron for warships and planes, demolishing farms to make way for cities, developing modern factories and dumping their wastes into the rivers from which animals once drank and in which aquatic species were once abundant. Most frightening of all, are the excesses of the rich who have pumped the planet's atmospheric greenhouse full of carbon dioxide and other gases, to such an extent that oceans are predicted to expand and ice-caps to melt, changing the earth's entire climate, if not checked. The wasteful over-consumption of this group remains the most powerful threat to the global environment.

On the other hand, we in the academic world are earnestly searching for the best kind of education appropriate for the poverty-stricken human poor, who must gnaw away at tomorrow's food in order to survive today. In fact, the poor use fewer resources, create less waste and do less harm to the environment than the rich. However, there is a threshold of poverty, below which, the poor become incomparably destructive, when present survival means destroying resources which could certainly have nourished them for years. Perhaps everyone would agree with the principle that extreme poverty must be eliminated, not only for humanitarian reasons, but also for environmental ones.

This global problem is indeed one of the accountabilities of the I.U.B.E., through the B.I.O.. It is sensitive, it seems, to finding ways and means, relevant educational approaches and mobilising the necessary utilisation of available expertise, abilities, capabilities, knowledge and understanding, as well as highlighting effective values and attitudes, to discover the kind of education necessary to alleviate these problems. Otherwise, environmental degradation will continue to affect the whole world.

From this point of view, should this problem be considered as one of the research projects of the I.U.B.E., to find positive possibilities for "educating the wealthy elite and the least educated poor to save planet earth." This topic is open for critical evaluation.

Philippine Contribution to Bio-Environmental Education

Environmental education in the Philippines started to gain ground in the 1970's, when its prominence and acceptability became a part of the school curriculum. Elementary and secondary school awareness of the environment has been incorporated into science, social studies, civics, history and health education. At the university level, a number of undergraduate and graduate courses now specialise in environmental fields. Some universities offer environmental courses as part of their general education programmes. Recent years have seen environmental awareness intensifying among the Filipino people. NGO's have mushroomed and many civic-minded groups have picked up the environment as their major concern. Government agencies have become more cognisant of the need to consider environmental dimensions in their agency programmes and the tri-media have become more sympathetic to prevailing issues, as people have recognised the urgency of environmental education, in response to the gradual deterioration of their surroundings. Key educators have come to realise that decisive measures must be taken, if mounting environmental awareness is to be properly directed toward concrete, positive and localised action.

The legal basis for environmental education in the Philippines is embodied in the Philippine Environmental Code of 1977, under Section 53 of Presidential Decree No. 152, that states: "The Department of Education, Culture and Sports shall integrate subjects on environmental education in its school curriculum at all levels. It shall also endeavour to conduct special community education, emphasising the relationship of man and nature... the Natural Environmental Protection Council, now the Environmental Management Bureau, and other government agencies, stimulating awareness and encouraging involvement in environmental protection." Presidential Decree No. 1121 of 1977 mandated the NEPC to conduct a continuing educational training campaign programme about the enhancement of quality of life, through environmental educational improvement.

In 1989 the Environment Management Bureau convened educational leaders from a multi-sectoral group of government and NGO's, aimed at providing a national framework that would synchronise unified activities for environmental education, at both formal and non-formal levels. This meeting emphasised the need for the integration of concepts of environmentally-sound development at all levels of education. This exercise strengthened links with, and support for, academic institutions and provided a broad environmental coalition network. It produced information and relevant materials such as source books and video tapes, as well as tri-media production packages for teachers, including samples of evaluation instruments for the students. Since then, continuing seminars, workshops and other in-service fora, have been conducted by the EMB of the DENR, to improve the quality of environmental education in the country.

Conclusions and Recommendations

- More key leaders should be invited to attend or participate in B.I.O. conferences, coming particularly from developing countries (DC's) and less developed countries (LDC's) and should be encouraged to undertake thorough reviews of their curricula, with a view to recommending scientific and acceptable measures that would warrant multi-disciplinary and/or interdisciplinary approaches established at the core of all areas of specialisation, which would guarantee acceptable and multiple effects in their respective countries.
- There seems to be an extreme urgency to examine existing materials and publications, to improve the information exchange service of the I.U.B.E., by establishing an exclusive and rich library centre, thereby strengthening the technologies and capacities necessary to promote co-operation, research, information-sharing and the dissemination of information on environmental protection and preservation.
- The B.I.O. is barely ten years old, yet it has progressed considerably. It seems that the I.U.B.E. should maintain a continuous monitoring system to assess the objectives identified since its origin, in order to learn the extent of its successes and shortcomings in the direction of progressive growth and development.
- To promote international co-operation and the better understanding of human diversity, perhaps the I.U.B.E. should strive to collaborate with various international organisations, which have acted as initiators in preparing programmes and strategies aimed at sharing, updating, enriching and integrating, environmental and developmental education. This should be seen as an issue, cutting across all barriers at all levels in the academic arena, in participation with all sectors of society.
- Finally, to ensure satisfactory global circulation of the socio-economic, cultural and demographic links of the curricular content of bio-environmental education, an adequate and permanent budgetary outlay must be provided annually by the Biopolitics International Organisation, to implement these recommendations.

Academic Institutions in the Philippines

Offering Degree Courses in the Environmental Field

| Academic Institutions | Degree Courses Offered |
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| Camarines Sur State College of Agriculture, Pili, Cams., Sur | B.S. in Agricultural Engineering and Environmental Sanitation M.A. in Resource Management |
| Holy Trinity College, Palawan | B.S. in Sanitary Engineering |
| Mapua Institute of Technology, | B.S. in Environmental Engineering |
| Miriam College, Quezon City | B.S. in Environmental Planning |
| National University, Manila | B.S. in Sanitary Engineering |
| Pamantasan Ng Lungsod Ng Manila Intramuros, Manila | M.A. in Civil Engineering and Water Resource Management |
| Philippine Normal University, Manila | M.A. in Health Science |
| Philippine Union College, Cavite | B.S. in Health Education B.S.E. in School Health Education |
| Philippine Women's University, Manila | M.S. in Environmental Management |
| University of Northern Philippines, Vigan, Ilocos Sur | B.S. in Sanitary Engineering |
| University of the Philippines, Quezon City | M.S. in Biology M.S. in Environmental Engineering M.S. in Energy Engineering Ph.D. in Energy Engineering M.S. in Urban & Regional Planning Ph.D. in Urban & Regional Planning |
| University of the Philippines, Los Banos, Laguna | B.S. in Biology B.S. in Human Ecology, Human Settlement & Planning M.S. in Environmental Studies |
| University of the Philippines Manila | B.S. in Public Health M.S. in Public Health M.A. in Public Health M.D. in Public Health M.S. in Occupational Health |

Source: DENR (1989) *Network of the Philippines: Role of Educational Institutions and NGO's in the Sustainable Management of the Environment and Natural Resources, Quezon City*

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