

EVOLUTION OF THE CONCEPT AND PRACTICE OF ENVIRONMENTAL EDUCATION —— From Tbilisi (1977) to Moscow (1987) ——

Akihiro Chiba

The Environment Summit¹, as generally referred to by the international community and press, more directly involved in the critical issues related to environment was the culminating point of all the efforts at national and international levels by all concerned to ensure the sustained political will for the protection, appropriate resource utilization and management and sound development of environment, to mobilize the wider international support and participation with commitment and to generate resources for achieving the objectives agreed upon at the Summit, generally known as “Agenda 21”.

Among many measures proposed for the improvement and development of environment in the years to come, education, public awareness and training constitute an area which is fundamental to all actions in other areas. In the history of the mankind, many critical problems and issues have emerged menacing the human life and existence, families and societies etc. and in all the cases the legislative, political or administrative measures have been taken to contain or solve the problems along with the efforts of the scientific and academic communities to clarify the very causes of such problems and issues in recent years.

1 Environment Summit— The United Nations Conference on Environment and Development, Rio de Janeiro 3-14 June 1992.

The first measure is naturally the direct curative action and rehabilitation but the more the problems are deep-rooted and complex, the more importance of the preventive measures, especially the important role of education has been emphasized, and the educational communities have been called upon to cooperate in providing information, generating more knowledge, developing new skills and above all forming appropriate attitudes, value-judgement, moral codes and ethics. Environmental issue is also the one which requires a considerable fundamental ground work by education, to generate awareness, to share information and more particularly to develop environment conscious life style and attitudes, and moral codes of behaviours - individual and social; local, national and international, etc.

In this connection, the report of the Environmental Summit has recognized the importance of the guideline set out at the first Inter-governmental Conference on Environmental Education organized jointly by UNESCO and UNEP in Tbilisi in 1977. Unfortunately, however, the work of the Tbilisi Conference especially the earlier evolution of environmental education was relatively unknown among the general public and even specialists, except for a very few who are directly involved or interested in the international cooperation in this field. The purpose of this paper is to record the evolution of environmental education, over the first 10 years from the Tbilisi Conference to the second International Congress in Moscow in 1987, on the basis of the key note speech the author presented as the Deputy Assistant Director General for Education, representing UNESCO.

The Tbilisi Conference recognized the importance of incorporating environmental education in all educational processes and also catering to the needs of all sections of society including the general public and non specialists,

professionals dealing directly or indirectly with environmental issues and the scientists and technicians who are specialized in the environmental issues, in the fields of social or natural sciences. Furthermore, the strategies evolved following the Tbilisi Conference was to progressively involve different levels and modalities i.e. primary, secondary, technical and vocational, higher and non-formal education, to develop and reinforce major elements of educational process such as information, research and experimentation on the contents and methods, to support the training of personnel and to advise the countries to incorporate environmental education into educational policies and plans.

The International Environmental Education Programme (IEEP) was jointly launched by UNESCO and UNEP in 1975 in response to Recommendation 96 of the UN Conference on the Human Environment, held in 1972, in Stockholm. Subsequently, the Tbilisi Conference strongly urged that UNESCO and UNEP pursue their joint effort in the IEEP and reinforce it. Accordingly, environmental education has become an integral part of Unesco's Second Medium Term Plan for 1984-1989. Similarly, environmental education and training have been incorporated into UNEP's activities as a principal measure of support for its effort to improve the environment and to attain environmentally sound sustainable development.

In this connection, the Tbilisi Conference of 1977 played a pioneering role in establishing the nature, objectives and principles of environmental education as well as the main guide-lines for its development both nationally and internationally.

This paper on the follow-up of the Tbilisi Conference will therefore be concerned with the brief appraisal of the achievements of the IEEP at three

complementary levels: Firstly, its contribution to developing a general awareness of the need for environmental education, which began with the establishment of the IEEP in 1975; secondly its contributions to devising of concepts and methodological approaches in this field, which was the major activities of the IEEP during the period 1978-1987; and finally, its contribution to incorporating an environmental dimension into the educational process of the Member States which, together with the other aspects already mentioned, forms the core of the permanent functions of the IEEP.

For the development of awareness of environmental issues and of the need for environmental education, regular and continuous flow of information is essential. In this connection, particular mention needs to be made of the IEEP international newsletter, Connect, published in five languages with approximately 13,000 individual and institutional subscribers actively concerned in the promotion and development of environmental education and training. Other important developments in this domain include the establishment of the computerized data base and the thesaurus and glossary of environmental terms and annotated bibliographies.

The international and regional meetings, symposia, workshops, etc. organized during 1975-1987 contributed greatly to the exchange of information and experiences, promotion of inter-disciplinary approaches, and methods of incorporating an environmental dimension in various levels and forms of education.

While it is not an exhaustive list, major meetings are listed below:

Before the Tbilisi Conference

International Workshop on Environmental Education; Belgrade 1975
 Regional Meetings of Experts on Environmental Education:

- Africa: Brazzaville, 1976
- Latin America and the Caribbean: Bogota, 1976
- Asia: Bangkok, 1976
- Arab States: Kuwait, 1976
- Europe: Helsinki, 1977

Between the Tbilisi Conference and Moscow Congress

- International Seminar on Education and Environment, Budapest 1980
- International Meeting of Experts on Progress and Trends in Environmental Education since the Tbilisi Conference, Paris 1983
- International Symposium on Environmental Education, Bulgaria 1983
- Consultation Meeting on the Training of Curricular Developers, New Delhi 1985
- Regional Seminar on University and the Environment for Latin America and the Caribbean, Bogota, 1985
- Regional Seminar on the Incorporation of General Environmental Education into University Education in the Arab States, Doha 1985
- International Symposium on Environment and Teaching Social Sciences, Paris 1986
- Consultation Meeting on the Incorporation of environmental Education into Curriculum and Teacher Training for Industrial and Agricultural Schools, Singapore 1986

As seen in the above, much efforts were made in the initial period to clarify the general problems relating to the curriculum development and also at the higher level of education such as university education in general, or in the

teaching of specific subjects or specific streams of education. Another interesting feature is that, while majorities of the meetings were held at the sites of the UNESCO or UNEP Secretariats, especially their Regional Offices, there were very active interest and initiatives on the part of the socialist governments, especially in East Europe. Furthermore, the senior positions responsible for IEEP in both UNESCO and UNEP were very often occupied by the nationals from the former USSR or other socialist countries.

Concerning the clarification of concepts and methodologies of environmental education, a considerable effort was made both internationally and nationally following the Tbilisi Conference, to define more clearly its contents and effective methods. A brief review has revealed that the importance of the interdisciplinary process gained the recognition in the very early stage of the IEEP as the permanent feature of environmental education in which individuals and community gain awareness of their environment and acquire the knowledge, values, skills, experiences and also the determination which will enable them to act individually and collectively to solve present and future problems. Thus, in addition to being interdisciplinary, environmental education started to take an active problem-solving approach.

The IEEP has mainly taken the form of carrying out studies and organizing seminars, research work and experimental projects, which have made it possible to clarify the nature of environmental education as a dimension which should be incorporated into all disciplines and subjects in the educational process by taking account of both the social and natural aspects of man's environment and which should reach all sections of societies through school and out-of-school education.

Studies and research carried out following the Tbilisi Conference are mainly related to the incorporation of environmental education into the general education of university, non-formal education, teacher training in vocational, technical and agricultural education, science education, secondary education, art and civic education. Many pilot projects were also undertaken to test the validity of, and to apply the knowledge and experiences already acquired and to improve and renovate the educational approach to the environment and its problems. The pilot projects in earlier dates inevitably took the form of experiments and progressively shifted toward the application and expansions on the basis of the experiences acquired. The pilot projects supported under the IEEP between the Tbilisi Conference and Moscow Congress numbered as many as 7 in Africa, 3 in Arab States, 9 in Asia, 17 in Europe, and 9 in Latin America and the Caribbean. Wide ranges of experiments and operational research were carried out and the most frequently experimented areas are; (1) primary education and teacher training — 11 projects, (2) secondary education and teacher training — 8 projects, (3) university education — 7 projects, (4) education for general public — 8 projects, (5) non-formal education — 6 projects, (6) incorporation of environmental education into specific subjects such as social studies, sciences and nature studies, consumer education, etc. — 6 projects, (7) use of the biosphere reserves — 4 projects, etc. Some projects were concerned with specific problems of desertification or urban marginal zones.

Inter-institutional committees with representatives from government bodies, schools, universities and environmental organizations have been set up in more than 60 countries in all regions, following regional conferences, national training courses, or pilot projects undertaken or supported by the IEEP in order to encourage the incorporation of general environmental education into

the national education systems.

This contribution of the IEEP has had two particularly important aspects, namely, the development of educational content, methods and materials on the one hand and the training of teachers on the other. Especially in the field of teacher training, the IEEP, since 1978, has organized a series of 15 regional and sub-regional seminars in Africa, the Arab States, Asia, Europe, and Latin America and the Caribbean, to develop awareness on the part of educational administrators and those in charge of study programme. These seminars have been particularly concerned with the formulation of national environment education, with the methodology of pre-service and in-service training for teachers and with the principles to be followed in the preparation of educational materials. The IEEP also undertook or sponsored the organization nationally of more than 60 environmental training courses for teachers in all regions of the world and pilot projects to train personnel in the environmental field.

With regard to the work of devising educational content, methods and materials on the environment, the IEEP carried out over 15 research and experimental projects which have led to the production of an integrated series of education materials, including methodological guide, thematic modules and manuals for general education and for the initial training and further training of teachers. There were as many as 25 titles in the “Environmental Education Series” in 1987, for example, “Guide on Gaming and Simulation for Environmental Education”, “Environmental Education Module for Pre-service Training of Science Teachers and Supervisors of Secondary Schools”, “Universities and Environmental Education”, “Inter-disciplinary Forms and Methods of General Environmental Education in Polytechnical Schools and Higher Education” .

In addition to the IEEP's role as a catalyst in promoting environmental education at the national level, mention should also be made of its multiplier effect at the international level. From its outset, the IEEP has endeavoured to work in conjunction with the agencies of the United Nations system and with other intergovernmental and non-governmental organizations concerned with environmental education. Nowadays, an increasing number of international, regional and subregional organizations have given environmental education an important place in their action programme.

The IEEP has undoubtedly made a significant contribution both nationally and internationally to increasing awareness and developing education and training in the environmental field. More than 140 countries from all regions of the world have been directly associated in the activities carried out by the IEEP. They have involved more than 12,000 teachers at different levels of school and out-of-school education, about 2,000 primary and secondary schools, more than 100 universities from different regions and more than 150 institutions concerned with training and educational research.

The problems confronted with have been institutional, financial, and personnel for the most part. Institutionally, there has been a resistance to the reforms and changes inherent in the introduction of environmental education with its interdisciplinarity and problem-solving approach. Interdisciplinarity alone takes planning, patience, time and experience. Financially the introduction of environmental education means additional funds required for new teaching materials and field equipment (water, air and soil testing kits, etc.). At a time of international austerity and declining resources, this is critical. It has met resistance among teachers for its break with traditional education in

terms of teaching individual disciplines such as biology, sociology, economics, etc. independently of one another and a considerable problem has been faced in the training and retraining of sufficient numbers of teachers.

The main result of the Moscow Congress was the development and adoption of an international action-strategy plan for environmental education and training in the 1990s which cover the following areas:

1 Strengthening of the international system of information and exchange of experience:

To set up an international computerized information service by linking existing institutions and resources through information network and services and also to set up or strengthen regional networks to which all institutions concerned with environmental education will have a free access via on-line networks. The issue of the newsletter Connect to be continued.

2 Strengthening research and experimentation in educational contents, methods and strategies for the organization and transmission of messages concerning environmental education:

In view of the fact that the main problems of environment are the outcomes of human choice, a special research and experiment will be needed to devise the contents of education and training that take into account research findings of various social science disciplines which deal with such human factors as values, behaviour, decision-making, etc. Other areas for research and studies are the identification of the point of convergence and complementarity with other types of education, notably population education, health and nu-

trition education and the development of innovative approaches in the training of teaching personnel and for the education and information of the public. The use of effective information and communication technology is another area of importance for research. For environmental education to be effective, educational messages are to be more relevant tailored to the well-defined educational objectives and the specificity of the target population.

3 Promotion of environmental education through the development of curricula and teaching materials for use in general education:

A continuing effort will be needed to improve curricula and to develop new teaching aid capable of organizing the requisite knowledge in ways that are more representative of real environmental issues than conventional instructional materials. Environmental education would require a more comprehensive and integral approach to reach a wide section of student population and effective role of general education need to be recognized.

4 Promotion of pre-service and in-service training of qualified formal and non-formal education personnel:

The lasting way to ensure continued development of environmental education at the national level is to incorporate the environmental dimension into the initial or pre-service training of teachers of the social and natural sciences and of technical studies at middle and higher level. For this purpose it is essential for future educational reforms to ensure a proper place for this approach in the new educational plans and programmes including the training of teacher educators and curriculum specialists. In-service re-training of teachers at all levels and in all categories of education have more direct and immediate

impact in the spread of environmental education and therefore this area constitutes the major priority.

5 Incorporation of an environmental dimension into technical and vocational education:

Since the work of technicians and intermediate level professionals (e.g. blue-collar workers, farmers, craftsmen, etc.) often has a considerable impact on natural resources and resource management, especially on the conservation of the productive potentials of both natural and man-made eco-systems, special attention is to be given to this area with the sense of urgency, along with the training of the middle level environment management technicians. Furthermore, some basic reconsideration will be required on the very nature of traditional technical and vocational education.

Tourism has a great impact on the environment, given the international scope and intensity. In this connection, the training of the tourist officials will be important to ensure conservation of the resources and the aesthetic qualities of the environment.

6 More effectively educating and informing the public about the environment through the use of mass media and the new information and communication technology:

Although the level of awareness of the environment and its problems have progressed a great deal in certain countries, there are many unmet needs, when one considers that the ultimate aim ought to be the creation of a genuine mass culture. In this connection, the production of educational programmes

for the media is essential so as to develop a great capacity for individuals to appreciate more critically the nature, aims, and purpose of the environment-related information they are receiving from the media.

7 Integrating an environmental dimension more effectively into university education through the development of educational resources and training, as well as by introducing appropriate institutional mechanisms:

The major action in this domain includes (1) the development of awareness of academic leaders and authorities, (2) the development of study programmes or integrated courses on environment issues, (3) improvement of in-service teacher training and (4) the improvement of institutional intra-university cooperation among related disciplines.

8 Promoting specialized scientific and technical training on the environment:

Qualitative and quantitative improvements in the training of specialists in subjects relating to the environment consist primarily in working continuously to strengthen the existing training programmes and in certain cases to create new higher education programmes. These tasks could be facilitated by reinforcing regional networks of institutions set up by UNESCO or UNEP and by appropriate utilization of the information network.

9 Development of environmental education through coordinated international and regional cooperation:

International and regional cooperation is essential for the development of

environment education and its role will become increasingly important in future. All the actions indicated under the above eight areas call for such cooperation. Many actions are obviously taken at national level and they are confined within the national borders but environmental issues often call for action beyond the national boundary in view of their very nature for which intergovernmental cooperation will be essential. The role of non-governmental organizations is equally critical.

As stated earlier, environmental education under IEEP has been implemented by UNESCO with considerable financial support of UNEP. It adopted the strategy of progressively involving and expanding to different levels of education and different modalities. Despite the original intention of carrying out such involvement and expansion on a systematic basis, the actual implementation was not necessarily so systematic because of the fact the many governments were not ready to take on the tasks due to the entirely new problems and issues and furthermore, the international secretariats such as UNESCO and UNEP were obliged to carry out as many activities as possible within the short period of time in order to establish the credibility of the IEEP.

Furthermore, the IEEP tried to extend or incorporate environmental education into different levels and forms of education, such action was mainly taken by those directly involved in environmental education often in isolation of other major educational programmes such as educational innovation networks, literacy and adult education, or educational planning and management etc. carried out by UNESCO in the 70s and 80s. The only example of such inter-programme cooperation was with the Joint UNESCO-UNICEF Cooperative Programme in basic education but such cooperation was limited to the contribution of an article on "environmental education in primary and pre-pri-

mary education" to the Trend Paper under IEEP. Inter-Programme cooperation was a new development after the Moscow Congress. Such cooperation was undertaken in the field of international education and educational planning and management; i.e.,

- International Symposium on the Content and Methods of Environmental Education for Professional Groups (Economists and Planners) 1989
- Ukrainian SSR Course on General Environmental Education for Decision Makers 1988-1990
- European Workshop in Environmental Education for Associated School Project Teachers and Students 1989
- Ukrainian SSR Pilot Project on Environmental Education and International Comprehension

Cooperation with the population education programme was also foreseen in the international action-strategy plan.

The inter-programme cooperation and link are thus of much limited scope and the environmental education did not benefit from the innovations and experiences gained through other major educational programmes nor did it contribute to other programmes. The lack of coordination and direct cooperation between the environmental education at tertiary level in the IEEP and the university education programme of UNESCO is rather conspicuous. It was thus significant that the conceptual coordination was achieved at the Environment Summit 1992 between the environmental education and the education for all, which UNESCO, UNDP, UNICEF and the World Bank co-sponsored in 1990. However, it is yet to be seen if the real coordination of the two programmes would be ensured at the implementation level.

Certain forms and practices of agricultural and industrial production,

manufacturing, etc. are coming under attack from the environmentalists. Current practices of agricultural and industrial technical and vocational education are often linked to such production and manufacturing process which are causing the land, water and air pollution, poor environmental resource exploitation and renovation, equipment, product or process risks and hazards to human life, and environmentally hazardous waste disposal. Technical and vocational education may be the area where much transformations and reforms are expected to take place in the coming decade.

Another post-Moscow development was the relative importance attached to environmental ethics. Some studies and research were carried out in Australia, Sri Lanka, and Germany in 1989-1990 and those involved in the studies met later in an international meeting but the issues relating to culture, values and ethics will no doubt receive an increasing attention in future.

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