

Environmental education: a decade of failure but some hope for the future

e.e. a failure?

M. Walsh

The world is experiencing a number of major problems (overpopulation, too-rapid urbanisation, uncontrolled technology, habitat destruction etc.) which are threatening the future of human life on earth. To document the alleged causes of environmental degradation as such a list of discrete problems as is done by many writers (Palme, 1972; Burnet, 1979 etc.) can lead to an erroneous supposition that provided a systematic solution can be found for each problem, then the future is likely to be less threatened. This supposition is incorrect because the crisis has arisen from the threat posed by the whole, that is, the irrevocable links which exist between each of these problem areas such as those listed above. Resolving one problem satisfactorily on a global scale will not provide solutions for the other problem areas. The solution must lie with an approach which might not only solve many present problems but also prevent new problems from arising. Such a remedy reflects on the ecological nature of the problem, recognising that "everything is connected to everything else" (Commoner, 1972a). From around 1970, this role has been allocated specifically to education. Perelman (1976) saw a need to develop ecological pedagogy, an educational process that is ecological not only in its subject matter but in its structure and dynamics as well. Both Ehrlich (1971) and Commoner (1972b) saw education as a necessary component of any solution. Boyden (1970) argued that educational institutions must be placed at the top of the list of agents whose task is to reverse the trend towards environmental degradation. He noted that a key task for present adult generations is to provide youth with an environmental education (EE) that will prepare them emotionally and intellectually for the role of protecting the biosphere. Stapp (1970, 24) remarked on the need for well-informed educators: "If individuals are to be prepared to make the kind of environmental decisions that our nation will face in the future, schools must embark on a comprehensive program that will span the curriculum (K-12)."

Environmental Education was clearly perceived as being a key component in the international framework being devised to help solve the environmental problems which exist and which are foreseen for the future. It was the intergovernmental UNESCO-sponsored conferences in Belgrade, (1975) and Tbilisi, (1977) which gave a specific focus to the role of education. During the early part of the decade of the seventies, confusion existed about the scope and definition of EE. A significant outcome of these two international conferences was that a clear consensus emerged regarding a set of guiding principles for EE which might be considered as criteria for assisting in distinguishing EE from many other types or forms of education. These criteria can aid in attempting an answer to the question "When is education environmental?" Allied to this consideration is the need to recognise how EE is (or could be) juxtaposed amongst the organisational patterns and subject disciplines already firmly entrenched in educational institutions and, in particular, Australian schools and universities.

Centre for Education
University of Tasmania
Hobart. 7000

Before considering these guiding principles just mentioned, it is useful to consider a categorisation model which helps to clarify the different interpretations given to EE by various writers.

It is possible to identify three independent or primary classes of environmental education — education about the environment, education for the environment, and education in the environment, and four additional secondary classes comprising combinations of any of the three primary classes.

- Education about the environment is a cognitive approach which stresses information-gathering and the acquisition of technical and intellectual skills which will aid in the investigation of subsequent environmental issues. The goal is a knowledgeable individual.
- Education for the environment is an affective approach seeking to develop both an interest in and concern for, environmental conservation. The goal is to produce an individual possessing skills to improve as well as maintain environmental quality.
- Education in the environment is characterised by the particular pedagogical technique being used, and it can be generalised to education occurring outside the classroom. Some authors (e.g., Watts, 1969) call this form education from the environment.

It is generally considered that for education to be environmental, then it must emphasise education for the environment. The characteristics of, or criteria for, environmental education, have distinctive features.

The Tbilisi conference report (UNESCO, 1977) and Fensham (1978) are two of many sources which list them in various ways. A summarised list is that Environmental Education

- transcends individual disciplines
- develops an awareness of environmental problem situations and issues
- assists in delineating alternative solutions to environmental problems and develops skills in discriminating and choosing between alternatives.
- includes strategies for action
- uses the immediate environment
- involves the clarification of values
- is a continuous process, beginning at the pre-school level and continuing through all formal and non-formal stages.

Despite the wide acceptance in the literature of these prescriptions for EE there is very little evidence available to suggest that education for the environment is occurring anywhere at all. The Environmental Education Project (Curriculum Development Centre, 1981) documents instances within Australia of education about and in the environment. Lucas (1980, 1980a) refers to environmental programmes 'about' and 'in' the environment, the majority of which are science-based units. The school curricula for the A.S.E.A.N. countries (Singapore, Malaysia, Indonesia, Philippines and Thailand) are very prescriptive, and the incidental reference to

environmental study is very much education about the environment.

This rather wide discrepancy between the theoretical prescription of what environmental education should be and the descriptions of what is actually happening should be viewed with concern, especially since this "debate" has been going on since 1969. The sense of urgency which motivated many workers between 1978 and 1982 is in danger of lapsing under the pressure of other educational imperatives, especially since the track record for EE is so fragmentary and lacking in any worthwhile achievements of direct value to the classroom teacher. Robottom (1982) agrees that EE is a failed innovation. He asks whether the failure could be due to

- (i) active, conscious subversion of the innovation by individuals who recognise an advantage in maintaining an "education *about* the environment" interpretation of environmental education?
- (ii) honest belief in an inability to change current practice because of perceived institutional constraints" (Robottom, 1982, 8).

I suggest that the failure is due to a combination of both (i) and (ii), although Robottom's use of the terms "active, conscious subversion" may be too strong. There are many educators, myself included, who would argue that there are many benefits to be gained from an "education about the environment" approach, particularly if the only alternative to this approach is for no environmental studies to be attempted at all. I do not agree with statements such as the following:

We can talk about education *in* the environment, education *about* the environment, and education *for* the environment, but only the last can be called environmental education ... it is only when education for the environment is the intention that environmental education is taking place (Greenall, 1981, 4).

It is important to recognise that education is not environmental education in the critical sense of Stockholm or Belgrade. It may contribute to it, but often it fails to meet the basic criteria ... (Fensham, 1978, 451).

Such statements give little encouragement to the teacher who is genuinely concerned about the deteriorating world environmental situation and is striving to do his/her own thing about it, albeit through an education about and in the environment approach. The implication is given to the teacher that such approaches are inadequate, and insufficient recognition is given to the possibility that education for the environment may need to be preceded by an education about the environment component. In the remainder of this paper, I will make further reference to the two possible reasons given by Robottom for the failure of EE as an innovation and I will suggest a re-direction of emphasis for EE which recognises what is presently occurring in our schools, accepts it as a fact that cannot be eliminated or changed within a short time scale, and ensures that fewer students graduate from school to the work-force without having received at least some contact with environmental studies.

Why so little education for the environment?

It has been suggested that most EE programs being conducted at present emphasise education about and in the environment, even though the literature stipulates that only education for the environment should be called EE. Henry (1981) has referred to this dysjunction as a theory/theory gap. The theory of the researchers or curriculum developers is not the same theory as that of the implementers (the teachers). Henry, along with Elliott and Adelman (1976), has a notion of a practical theory of teaching being held by teachers, and it is this theory which impinges directly on classroom organisation and practice. The characteristics of this practical theory of teaching need not concern us here (see Robottom, 1982; Henry, 1981, 1982) but it may explain why classroom teachers approach EE in the way that they do. Perhaps the time has come for curriculum theorists to "close the gap" between their theory of EE and the theories held by classroom teachers. Environmental Education has been proclaimed as the means by which a new dimension and function can be brought to education (M'Bow 1977), a mechanism for dramatic innovation to take place. This perception of EE as a tool to help to remove the constraints on formal education

systems and to restructure the curriculum is a logical objective, but unfortunately, in our essentially conservative society, such radical ideas are not welcomed. The fruits of educational innovation ripen very slowly, and I believe the time scale for this new order to evolve would be much too long in the absence of a radical transformation. The decision-makers of tomorrow are in higher education and senior-secondary schools today, and all of these persons need to be touched in some way. If the practical theory held by teachers incorporates education about and in the environment and it is satisfactory to them, then we should encourage this approach and simultaneously push education for the environment as a desirable outcome. Otherwise, the theory-theory gap referred to by Henry will cause most teachers to leave out environmental study altogether rather than try to cope with the researchers' theories which do not accord with the teachers' behaviour.

I believe the most effective way to immerse senior secondary students in environmental education is to introduce environmental studies as a specific subject in the school curriculum. This rather contentious issue will now be discussed.

Environmental studies — a new subject for senior students

It is evident that all environmental issues of major concern today are interdisciplinary in nature. It is also evident that true interdisciplinary study of environmental issues (or even topics) is virtually non-existent in secondary schools, and especially senior secondary schools and colleges. In the latter, the traditional disciplines dominate examination-orientated curricula, since further academic studies are dependent upon the bases formed by studies at senior secondary level. A similar line of reasoning is used to justify the inclusion of subject disciplines at junior secondary level to build bases for senior study. Only in the primary school can the teaching be truly interdisciplinary, since one teacher is primarily responsible for the range of subjects covered by pre-secondary students. Here, the teacher can act as an integrating agent, assisting students to bring various ideas and attitudes from each subject area to bear on an issue or topic. The problem for secondary schools is much greater. Even though co-operation between subject departments may operate at a high level, with topics and issues being studied across a range of subjects, there remains the requirement that the student must be the one to 'bring it all together', to integrate the knowledge and to see the cross-linkages as they occur. Such skills are beyond most students, especially at junior secondary level. I believe the most promising avenue for establishing environmental education as part of the secondary school curriculum is to make available a specific environmentally-orientated subject for the last two years of secondary schooling. Such an approach is being followed in Tasmania and Victoria, and the results of this innovation are very promising.

In Victoria, the subject is titled Environmental Science; in Tasmania, Environmental Studies. The remainder of this discussion will refer to Environmental Studies as a general title for any specific single subject with an environmental orientation.

Why a single subject called Environmental Studies?

The Belgrade Charter and the Tbilisi Declaration have listed aims and objectives for EE which have been widely discussed elsewhere (Fensham, 1978a, Stokes and Womersley, 1981; Greenall, 1981 etc.).

Three key characteristics of EE are apparent from these considerations:

- (a) Achieving Awareness and Understanding
- (b) Developing Concern
- (c) Undertaking Action

Each characteristic is not separate and discrete, but different emphases will be apparent. Concern over a particular issue may encourage the search for more knowledge and greater understanding of it, which in turn may foster even more concern and lead to some action. Whichever way a topic or an issue is studied, the development of

awareness and understanding is of paramount importance. It is this characteristic that I consider gains most from a single subject approach.

Advantages of an “Environmental Studies” approach

- It provides a focus. There is a centrally organised structure with a formal unifying mechanism. The intentions of the programme of study are clearly stated, making it easier for learners to bring the various points of view together.
- Following on from above, the logistics become easier. It fits into the traditional timetable more easily, it can be managed and organised within a particular subject department, and consequently, it can be administered by a senior member of staff who has some status and responsibility in things such as budget allocations.
- The contributions from a range of disciplines can be more readily integrated into a formal structure. Teachers from contributing disciplines can be briefed regarding the nature and scope of their involvement in such a course.
- Excursions, camps and general outdoor work can be planned and budgeted within the context of a single subject. Such excursions, because they generally cover multidisciplinary aspects, lead to greater communication between existing subject disciplines.
- It can be a very rewarding applied subject for those students who see very little relevance to their theoretical studies in physics, chemistry, earth science, social psychology, economics etc. The experience within Tasmania has been that some students see themselves as environmental specialists after only one year of study. Such students will be influential after leaving school, whether in tertiary study or the workforce.

Disadvantages of an “Environmental Studies” approach

- Teachers are not trained with the broad perspective to be able to teach such a subject effectively. (This disadvantage makes the alternative notion of infusing EE within all existing disciplines quite impossible to achieve.)
- It requires the introduction of another subject into an already crowded curriculum. (However, it carries the appearance of a “general studies” subject, a present-day desirable aspect, as well as offering a choice of a subject which is less narrow and specialised than, for example, some of the sciences.)
- Not all students will study the subject, and only a limited number of staff will be involved. (This question of teacher involvement is extremely important. Environmental studies requires a very firm commitment to a clear environmental philosophy on the part of the teacher, a commitment which is far more likely in those individuals given responsibility for a single subject. One uncommitted teacher in a team of teachers will pose problems for the overall achievements of the group; it is this eventuality which seriously hampers the likely success of an “infusion” approach involving a whole school staff.)
- A consequence of the above is that a single subject need not require a whole school to question its overall philosophy, whereas an integrated approach to EE would require a unified policy. (However, within Tasmania, the advent of Environmental Studies as a single subject at Higher School Certificate level has, in fact, resulted in various subject departments reviewing many of their traditional practices (e.g., disposal of waste chemicals, destruction of living tissue etc.) and review of whole school policy (duplicated notes and paper wastage, planning of recreation areas, noise levels etc.)

Calls for EE to be an infusion within the existing disciplines in the formal education sector have been maintained in the literature for the past decade. Despite this continued advocacy, few instances have been recorded in the literature of any EE programmes which conform to the ideas of the internationally accepted definition of EE. Consequently, I have argued for the emphasis to move towards the introduction of a subject dealing with environmental studies at senior secondary level. Such a subject can give teachers a vehicle for implementing their practical theory of teaching, which in most cases, involves a high component of education

about the environment. I would contend that it is necessary to be informed about a particular environmental issue, problem or effect before an effective action can take place. It is, of course, likely that levels of concern will change as more knowledge is gained about an environmental situation. It is also likely that more knowledge will be gained whilst action is being undertaken, but nevertheless, education about the environmental situation is initially necessary.

“Knowledge acquired without sufficient structure to tie it together is knowledge that it is likely to be forgotten” (Bruner, 1960, 31). Knowledge acquired within the structure of an environmental studies subject curriculum which has an action component associated with it is likely to be remembered and likely to become part of a student’s approach to other environmental problems.

By making a subject available for study at senior-secondary level, students can be encouraged to enrol for it and raise their levels of influence through a greater awareness of environmental issues. The encouragement comes from the design of the course ensuring that the subject matter is relevant and meaningful, and that there is scope for the different affective objectives to be given some avenues whereby action might be effected. Such non-prescriptive avenues inevitably result in action which can best be described as education for the environment, which is, after all, what we are aspiring towards as environmental educators.

References

- Boyden, S., 1970. Environmental Change: Perspectives and Responsibilities, in *Education and the Environmental Crisis*. Canberra: Australian Academy of Science.
- Bruner, J.S., 1960. *The Process of Education*. New York: Vintage
- Burnet, F.M., 1979. *Credo and Comment*. Melbourne: Melbourne University Press.
- Commoner, B., 1972a. *The Closing Circle: Nature, Man and Technology*. New York: Knopf.
- Commoner, B., 1972b. Science and Social Action: *The Science Teacher*, 39 (5).
- Curriculum Development Centre, 1981. *Environmental Education: A Sourcebook for Secondary Education*. Canberra: Curriculum Development Centre.
- Ehrlich, P.R., 1971 *The Population Bomb*. New York: Ballantine.
- Elliott, J. and C. Adelman, 1976. “Innovation at the Classroom Level” in *Innovation, the School and the Teacher*. Walton Hall, Milton Keynes: Open University Press
- Fensham, P.J. 1978. Stockholm to Tbilisi — the Evolution of Environmental Education. *Prospects*, VIII (4).
- Fensham, P.J. 1978a. Beyond Tbilisi — An End and a Beginning for Environmental Education. *Unesco News*, 29 (3).
- Greenall, A., 1981. “An Introduction to Environmental Education” in *Environmental Education: A Sourcebook for Secondary Education*. Canberra. Curriculum Development Centre.
- Henry, J.A., 1981. *Teachers as Researchers and a Redefinition of the Theory/Practice Gap in Education*. A paper presented at the Annual Meeting of the Australian Association for Research in Education, Adelaide, November 12-15, 1981.
- Henry, J.A., 1982. *What Could be: Environmental Education as “Education for the Environment”*. A paper presented as part of a seminar at the Second National Conference of the Australian Association for Environmental Education, Brisbane, June 27 - July 2, 1982.
- Lucas, A.M., 1980. Science and Environmental Education: Pious Hopes, Self Praise and Disciplinary Chauvinism. *Studies in Science Education*, 7, 1-26.
- Lucas, A.M., 1980a. The Role of Science Education in Education for the Environment. *Journal of Environmental Education*, 12, (2).
- M’Bow, A., 1977. Opening Address, UNESCO Conference, Tbilisi. In *Final Report, Intergovernmental Conference on Environmental Education*, Tbilisi, U.S.S.R., 1977. Paris: UNESCO.

- Palme, O., 1972. Breakthrough to Action. In *Environment Stockholm, Centre for Economic and Social Information*. Paris: UNESCO.
- Perelman, L.J., 1976. *The Global Mind: Beyond the Limits to Growth*. New York: Mason/Charter.
- Robottom, I.M., 1982. *What is: Environmental Education as "Education about the Environment"*. A paper presented as part of a seminar at the Second National Conference of the Australian Association for Environmental Education, Brisbane June 27 - July 2, 1982.
- Stapp, W., 1970. *A Strategy for Curriculum Development and Implementation in Environmental Education at the Elementary and Secondary Levels*. In *Education and the Environmental Crisis*. Canberra: Australian Academy of Science.
- Stokes, D. and J. Womersley, 1981. *Environmental Education: A Conceptual Framework*. In *Environmental Education: A Sourcebook for Secondary Education*. Canberra: Curriculum Development Centre.
- UNESCO, 1977. *Final Report — Intergovernmental Conference on Environmental Education, Tbilisi, 1977*. Paris: UNESCO.
- Watts, D.G., 1969. *Environmental Studies*. London: Routledge and Kegan Paul.