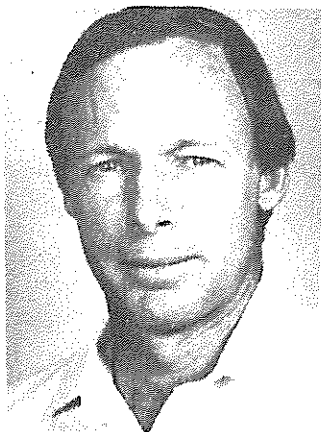


# DIRECTIONS IN ENVIRONMENTAL EDUCATION AND THEIR IMPLICATION FOR THE TRAINING OF PRIMARY SCHOOL TEACHERS IN THE TRANSVAAL:

## A DISCUSSION OF FOUR B. PRIMARY ED. PROGRAMMES



L. B. HURRY

This paper is based on research for a D. Ed. thesis with a similar title (Hurry, 1982). Environmental education (EE) is defined and guiding principles for effective EE programmes are given. These principles are applied to teacher-training and a model for teacher-training is proposed. The model is then used to assess the B. Primary Ed. programmes of four Transvaal universities. The assessment indicates that EE is not an obvious part of any programme, and recommendations are made to ensure that EE becomes integral to teacher training.

### Introduction

Environmentalists in different parts of the world are of the opinion that the attitudes and behaviour of many people do not reflect a concern for the health of the environment in which they live. On the one hand they seem ill-informed about issues that might affect the quality of their environment, and on the other they seem ill-equipped to deal with environmental problems.

In countries where formal education plays an important role in the development of the individual, a certain amount of the blame for this situation is laid at the door of the various educational systems. (Tinley, 1974; Hopkins, 1976; Stapp, 1978).

Research in South Africa suggests that school teachers are frequently uninterested in, or uninformed about, environmental matters (Hurry, 1978; Irwin, 1982). According to Irwin (1982, p. 271) teachers in South Africa who are environmentally aware are 'invariably self-taught in this respect.'

### Environmental education: Definitions and aims.

The IUCN definition of EE is used as the basis for this paper:

"Environmental education is a process of recognizing values and clarifying concepts in order to develop skills and attitudes necessary to understand and appreciate the inter-relatedness amongst man, his culture and his biophysical surroundings. Environmental education also entails practice in decision making and the self-formulation of a code of behaviour about issues concerning environmental quality." (IUCN, 1971).

The basic AIM of environmental education is to produce environmentally literate (aware) citizens, where such citizens have the knowledge, values, attitudes and patterns of behaviour which reflect a concern for the health of the total environment as well as for the quality of life of all its inhabitants.

In *formal school* curricula environmental education should be concerned with developing knowledge, skills, attitudes and positive behaviour relating to, *inter alia*:

- the wise management of natural systems, wildlife and natural resources.
- the wise management of historical sites.
- the quality of the environment as a human life-support system (both in the urban as well as in the rural environment).
- environmental problem-solving, with particular reference to the local environment.

Environmental education is NOT a separate subject in the school curriculum, but should form part of the general fabric of education. Although all school subjects should be used as vehicles for EE to a greater or lesser extent, biology, geography, science and history are seen as being particularly important since they lay the foundations of environmental concepts on which all EE processes rest.

### Guiding principles

Guiding principles for effective EE programmes (in general) have been identified by a number of authorities (e.g. the International Union for the Conservation of Nature). The following five apply in particular to school education:

- Environmental education programmes must be taught holistically. (With emphasis on cross-curricula information and activities.)
- Much of the learning experiences of learners must be based on knowledge of the local environment. (Field-work and practical work is essential).
- There should be active participation in preventing or solving environmental problems, particularly at the local level.
- Learners must feel a measure of control over problems studied. They must feel that they can contribute individually and collectively to their solution.
- Values clarification must be part of the educational process.

**The teacher-training model**

Figure 1 shows a normative model for teacher-training. Note that the programme is rooted in the local environment, both physical and cultural, and that there is constant interaction between the programme and the local environment.

In Figure 1 the training programme itself consists of three elements:

- (i) foundations training
- (ii) didactics training
- (iii) curriculum development.

With regards to the EE component of teacher training:

- (i) Foundations training contains learning-and-responding processes in which student teachers are encouraged to become environmentally literate.
- (ii) Didactics-training processes train student teachers to be effective EE communicators.
- (iii) On-going curriculum development ensures relevant EE programmes.

**Foundations training**

The guiding principles for effective EE programmes in schools apply to the learning-and-responding process in foundations training. Student teachers must be encouraged to become environmentally literate if they are themselves to be effective EE communicators.

**Didactics training**

The guiding principle for effective EE programmes in schools also form the basis of student teacher training. Particular attention should be paid to: Cross-curricular studies, fieldwork management, values clarification, problem solving, the needs of the local environment and curriculum design.

**Curriculum development**

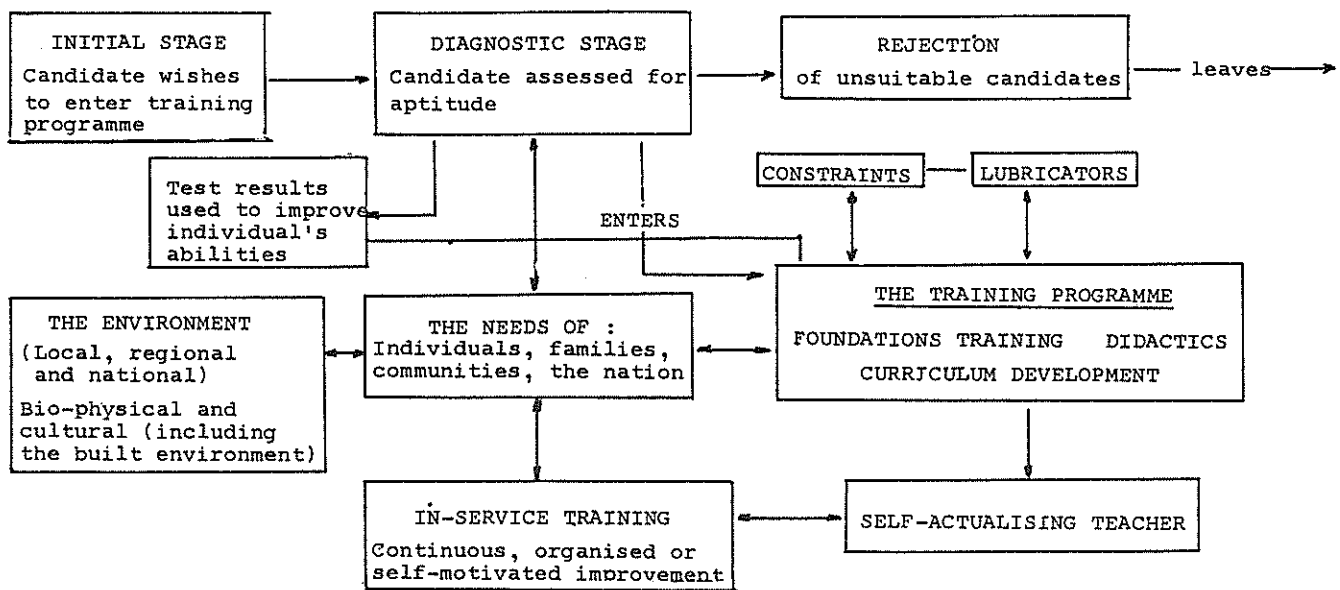
Curricula for teacher-training programmes should be developed against the background of the environment in which the teachers will be teaching. In the context of this paper, environmental concerns should be considered when training programmes are developed.

**The B. Primary Ed. Programmes.**

During 1980-82 the B. Primary Ed. programmes of four universities were studied with particular reference to EE. The teacher training model was used as a yardstick for this investigation.

Although all programmes have elements of EE in them, the following constraints to effective EE were indentified:

- None of the universities studied has environmental literacy as a basic aim for the programme.
- The acquisition of environmental concepts is not compulsory for all students.
- Training for fieldwork management is not compulsory for all students (Fieldwork includes visits to art galleries and museums as well as fieldstudies).
- Students are inadequately trained in cross-curricula activities.
- Values clarification is neglected both in the foundations programme and in the didactics programme.
- Problem-solving, particularly environmental problem-solving neglected.
- Curriculum development is dealt with superficially.
- The environmental needs of the local community are neglected when teacher-training curricula are developed.



— : Links between elements  
+ : Includes learning-and-responding programme

**FIGURE 1 : A COMPREHENSIVE MODEL FOR TEACHER-TRAINING** (Hurry, 1982)

### Synthesis and recommendations

The research indicates that the B. Primary Ed. programmes of the universities studied require restructuring if they are to produce environmentally literate teachers. The following recommendations are made to achieve this end:

1. All universities and colleges should have environmental literacy as a basic aim of all their training programmes.
2. There should be a compulsory course in EE which has as its main aim the production of effective EE communicators.
3. All students should be trained in cross-curricula activities.
4. Values clarification should be integral to all college programmes.
5. Students should be trained in problem-solving, particularly with regard to the local environment.
6. Fieldwork management should be compulsory for all students.
7. Curriculum development should be given more attention, particularly in so far as it relates to the local community and the local environment.

### Conclusion

Environmental education is a process which should be integral to general education. As long as teachers are poorly trained and poorly equipped this area of school education will be poorly tended.

All environmentalists agree that teachers hold the key to an environmentally literate citizenry. Teachers of all class levels must be trained in environmental education if they are to know what to do with that key.

### References

- HOPKINS, C.A. 1976: 'Environmental education in the school system.' In: Aldrich, J.L., Blackburn, A.M. & Abel, C.A. (eds.). *The report of the North American regional seminar on environmental education*. ERIC/SMEAC: Columbus, Ohio.
- HURRY, L.B. 1982: *Directions in environmental education and their implications for the training of primary school teachers in the Transvaal: Towards a synthesis*. D. Ed. Thesis, UNISA.
- IRWIN, P.R. 1982: *Conservation awareness amongst white adolescents in South Africa: A study of senior secondary pupils in Natal*. M. Ed. Thesis, University of Natal.
- IUCN 1971: *Education and the environment. Papers of the Nevada Conference of 1970 and the Zurich Conference of December 1971*. IUCN Publication, New Series, Morges.
- STAPP, W.B. & COX, D. A. 1979: *Environmental education activities manual*. Published privately: Farmington Hills, Michigan.
- TINLEY, K.L. 1974: *(Ecology): The study of the 'incomprehensible' by the 'incompetent.'* SARCCUS: Pretoria.