Effective environmental education — constraints and prerequisites

by K. Krishna Mohan and D.L. Saywell

Unlike many of their elders, the young find it easy to grasp that nature must be cherished — not plundered. If environmental education programmes are going to be effective, each section of the community must be targeted with an appropriate message firmly rooted in the local context.

'If you plan for a year, plant rice
If you plan for ten years, plant trees
If you plan for a hundred years, educate mankind.'

THE ESSENCE OF this quotation, attributed to the Chinese philosopher Kuan-Tzu, is that education is a key element in sustainable development. Historically, the knowledge of indigenous people has stressed this fact, emphasizing the need for environmental protection, and guarding against resource wastage. But rapid population growth, industrialization, and urbanization have transformed people's attitudes toward, and the demands made of, the natural environment. Modern lifestyles have evolved largely without regard to the long-term effects; the natural world has become a vehicle for achieving humankind's goals.

The current popular and political interest in 'environmental' issues reflects the concern about the exploitation of resources, and the growing demand for a more sustainable way of living. It is a concern increasingly expressed by the young. Education, therefore, can play a role in revising society's environmental values, by stressing the interdependence of the elements within the biosphere, and by redirecting technological and social development.

Education is the key

What form should this education take? Formal environmental education has been in the public domain for some time, but there is considerable debate about what it means, and how it is to be achieved. Workable methodologies for environmental education are well-documented[1,2] but, regardless of specific definitions and objectives, the problem facing educationalists is how to make environmental education programmes *effective*. Problems can arise when too little attention is given to the practical realities of education in both the developing and the developed world. By ignoring the context in which the programmes are set, environmental education is open to the criticism of being detached from everyday experience.

The C.P.R. Environmental Education Centre in Madras (a joint project of the C.P.R. Ramaswami Aiyar Foundation and the Indian Ministry of Environment and Forests), is actively addressing this problem. The Centre has a remit to increase people's awareness and knowledge about the environment, and about environmental issues in India. Several education programmes have been implemented with the aim of stressing the importance and urgency of conservation and ecological sustainability. What are the constraints to, and the prerequisites of, environmental education programmes (EEPs)?

Constraints

Certain cultural, social, and educational factors can prevent education programmes reaching their intended audience and/or promoting the desired message:

School. The classroom is the main environment in which education takes place. This in itself can seriously restrict learning. Recent UNESCO estimates suggest that, globally, 1.5 billion people never have their basic needs met (including access to education). In developing countries, one in three school-age (5 to 15 years) children do not attend school; and a further 250 million are forced into exploitative labour in urban areas because of poverty. Inevitably, many of these children remain illiterate, lacking sufficient knowledge to promote their own welfare, or to participate in the social, economic, and political structure as a way of achieving change.

Collecting paper. Within the classroom, the effectiveness of EEPs may be diluted by both parents' and children's aspirational attitudes. Education has become a vehicle for social climbing, access to formal-sector employment, and a Northern lifestyle. The consequence is an undue emphasis on the acquisition of examination certificates and qualifications, rather than an understanding of subject matter. Published studies[3] suggest that national examinations emphasize rote-learning and factual recall, and give a low priority to the relevance of teaching, comprehension of subject-matter, and application skills.

Indigenous knowledge. Failure to recognize the technical know-how of indigenous populations, or the level and type of knowledge that students already possess, may lead to the rejection or poor reception of EEPs. In his study of EEPs in Papua New Guinean secondary schools, G. Vulliamy[4] found that school knowledge tended to contradict indigenous knowledge learned at home. Unsurprisingly, students tended to retain the latter.

Delivery and content. A lack of cultural and social awareness about the beneficiaries, or key change-agents, can hamper the objectives of any EEP, reducing its overall impact, and its potential for changing value-systems. Programmes frequently fail where presumptions are made about local literacy levels or technical knowledge, or if people's cultural-belief systems are

treated insensitively. What is the point of attempting to teach Northern concepts of health and hygiene in Papua New Guinea if they make an unacceptable impact on lifestyle and gender roles?[5]

Community belief systems, cultural values, and customs are among the most enduring constraints to environmental education as they are typically ingrained into a community's structure, often enjoying widespread and unquestioning acceptance. Challenging these values may be misconstrued as a threat to the natural order of that community, and so be opposed vigorously.

Audience. EEPs should be aimed at the most disadvantaged groups: the poor, women, children, and people with disabilities. Such communication is rarely encouraged by governments, however, which wish to disguise the levels of inequality within society. Discussions on community issues must not be confined to local elites and written information should be presented in straightforward language.

Effective targeting

Many of the problems identified above can be addressed through the careful structuring, organization, and delivery of EEPs. Communities and societies are multi-layered, comprising a wide range of groups and interests. Different sections of a community will have vastly different information and motivation requirements. Because of this, it is important that education programmes correctly identify target groups who may be receptive to a specific message. Environmental education may fail if it assumes that every individual member of a community is equally interested in all messages, or can equally understand each message. For environmental education purposes, there are four prominent target groups:

School students. School-age children often lack their elders' prejudices and value systems; they learn quickly and will spread knowledge among their peers; and they are the primary recipients of formal education. The C.P.R. Environmental Education Centre adopts a two-stage approach: the syllabus covers issues such as ecological balance, the food-chain, air, and water pollution, hygiene, and nutrition. This is supplemented by a second, practical programme that involves establishing an 'eco-club' or initiating small-scale development projects such as tree-planting.

Teachers. Every teacher will come into contact with many students over the years; this group must be convinced of the need to introduce elements of environmental education into all subjects.

Women. Mothers have overall responsibility for the health and hygiene education of their children, and are involved daily in potentially environmentally damaging activities, such as collecting firewood. The Centre organizes conservation training programmes, and has established special *melas* (meetings) where women meet to discuss their problems and find solutions.

Decision-makers. This group reflects a complex interaction of planners, legislators, bureaucrats, and politicians. Although few in number, the disproportionate amount of power and authority that they wield means that they must be targeted using realistic strategies.

A crucial prerequisite for effective environmental education is to expect less of the education system. Educators cannot solve problems which are, at source, political, social, or economic. Schools have a role in helping to reinforce any changes to cultural or social behaviour that are initiated in the community. If environmental education is to be encouraged in developing nations, changes to school curricula and examination systems are essential, together with suitable modifications to teacher-training programmes. In recognition of this, the C.P.R. Centre has initiated a teachers' training programme that seeks to integrate environmental education into all subjects on the school curriculum. Between 1992 and 1993, the programme, which provides ideas for resource materials and teaching guidance on several environmental issues, reached 217 schools, and a total of 1377 teachers.

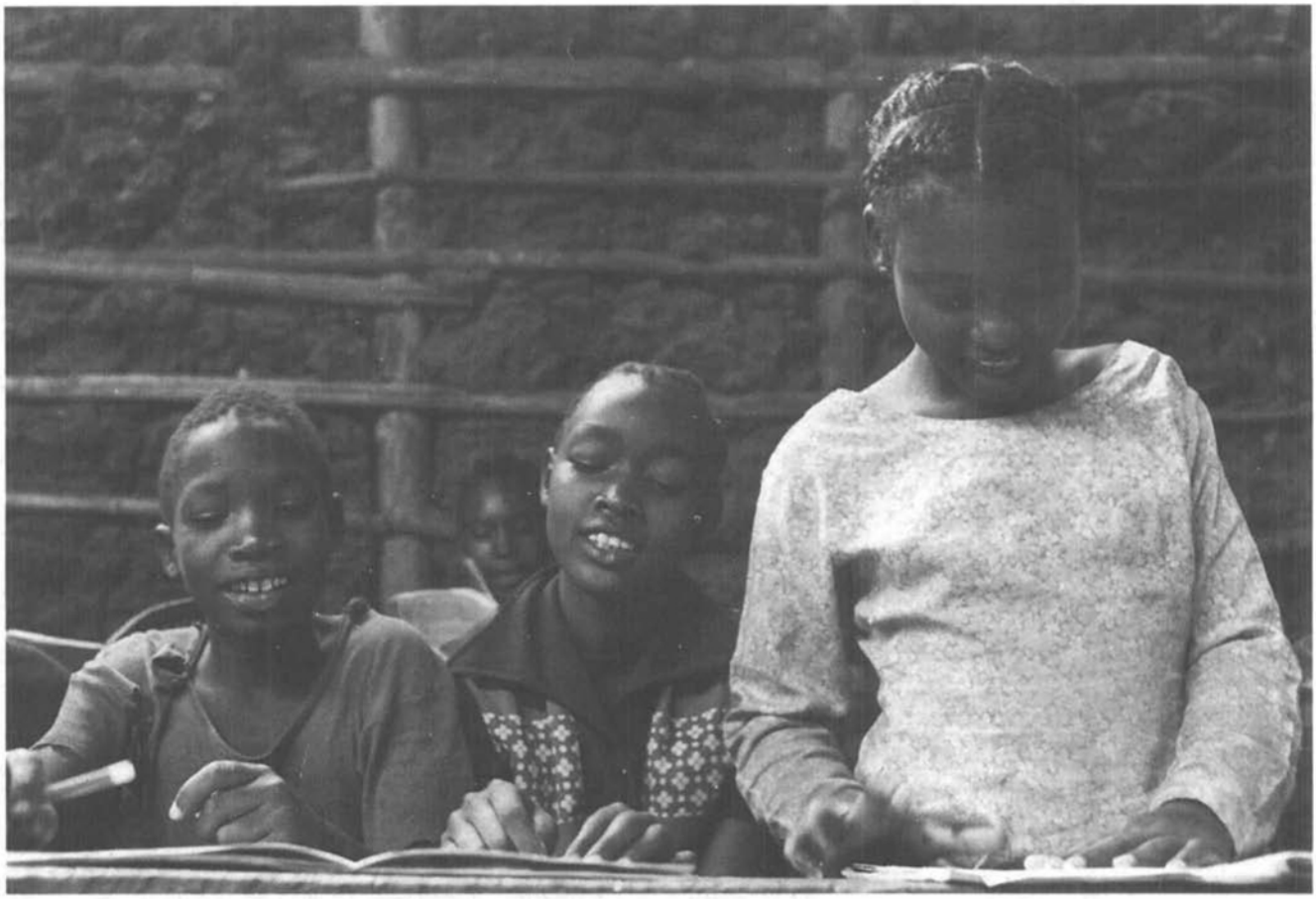
The message

Another central element in successful environmental education is the use of an appropriate message. Here are some basic guidelines:

- The message should not be too specialized, narrow in relevance, or overly technical. Resource materials are invaluable, ranging from basic colouring books which reinforce fundamental ideas about ecosystems, to more sophisticated poster campaigns and articles detailing the interrelationship between elements in the biosphere.
- The message must be technically correct. If mistakes have been made in compiling the information, there is a danger that the educationalist will lose the trust of the people.
- Do not overload a community with information, however clear and simple! Environmental education will be more effective if target groups can manage the information.
- The message must address the basic needs of the community and relate to the local area. It is crucial to identify what the community needs are, and to tailor the programme to meet them. It must not be top-down, or lack emphasis on the grassroots level, cultural context, or traditional knowledge.
- Allow the community the chance to give feedback.

Choosing the appropriate medium for transferring the message to target groups is crucial. Environmental educators must be aware that different media will appeal to different groups;

The mobile-campaign truck carries a wide variety of environmental resource materials and audio-visual equipment.



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Both in the classroom and after school, environmental education should be interactive, imaginative, and fun!

for example, traditional folk media will not elicit the same response from a group of decision-makers as will an audio-visual presentation. In general, there are two broad categories of communication techniques:

Traditional media. This includes folklore comedies, ritual, song, dance, puppetry, and plays. Immediately recognizable to the whole community, these techniques are more accessible than high-technology demonstrations. The Environmental Education Centre has found such traditional media invaluable for reinforcing environmentally sound behaviour as they offer an emotional experience with which the audience can empathize, thereby underlining a given message.

Modern communications — including audio-visual aids, television and radio, slide-show presentations, lectures, and film and video shows. Although the advantages are well-known (reaching a mass audience and isolated areas; fewer staff requirements), the disadvantages of maintenance problems, an inadequate supply of spares, and lack of feedback may be counterproductive.

In general, visual aids are seen as more beneficial than written materials. What can be recalled some days after receiving information is more important than what is recalled immediately after the event. Research indicates that people are six times more likely to remember messages three days later if they were presented in a combination of text and visual images, rather than plain text.

The C.P.R. Environmental Education Centre has also worked at raising awareness through a mobile audio-visual campaign. Each side of the campaign van carried pictures and messages with an environmental theme. In one recent 45-day tour, the van travelled through Indian villages and towns, playing film songs and screening films on similar themes. After each showing, local people took part in a discussion, in which they talked about their reactions and perspectives.

The Centre has also developed a special range of media, for use in their EEPs, that emphasize interactive communication techniques. Exhibitions, competitions, nature games, and eco-clubs are used to assess and reinforce their programmes. Competitions, for example, are a useful index of how much information a group has learned about a subject. Eco-clubs encourage children to learn about the different elements of the ecosystem, and their interdependence, through field visits and demonstrations; they also educate children about environmental degradation (often in evidence locally) and involve students in conservation efforts.

The challenge facing environmental educators is to know and understand the limitations within which they operate, and to develop appropriate education programmes that combine indigenous knowledge with school-based learning. At the same time, they must meet the basic needs of the people and help sustain their natural environment. ●

References

1. World Conservation Strategy, International Union for the Conservation of Nature, Gland, Switzerland, 1980.
2. Smyth, J.C., 'What makes education environmental?', in Briceno, S., (ed.) *New Ideas in Environmental Education*, Croom Helm, London, 1988.
3. Little, A., *The Role of Examinations in the Promotion of the Paper Qualification Syndrome (PQS) and Unemployment of School Leavers*, ILO, Geneva, 1982.
4. Vulliamy, G., 'The diversification of secondary school curricula: Problems and possibilities in Papua New Guinea', in Lillis, K.M., (ed.) *School and Community in Less Developed Areas*, Croom Helm, London, 1985.
5. Smith, R.A., 'Education for what?', *Papua New Guinea Journal of Education* Issue 8, 1972.

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