

# Environmental Education in New Zealand

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## Introduction

Environmental education in New Zealand (NZ) was born out of the environmental movement during the 1960s and 1970s. During that time it became increasingly apparent that we needed to know more about ourselves, our surroundings and the interactions between these two. The central impulse of environmental education is to help develop people who are knowledgeable of, concerned about, and motivated to do something for, the environment. This involves being:

1. Knowledgeable about the physical, social and economic environment of which people are a part;
2. Concerned about environmental problems; and
3. Motivated to act responsibly in enhancing the quality of our environment as well as our life.

In NZ a common misconception held was that environmental education is the same as outdoor education. It is not. Environmental education is concerned with those aims listed above, whereas outdoor education is now taken to mean, and is officially called, 'Education Outside the Classroom'. Obviously the two are neither synonymous nor mutually exclusive (Dowling 1986). In the school context, environmental education has traditionally been considered as any teaching about 'the environment'. Today, however, it is being understood as a process which is multi-disciplinary in approach and for the environment at heart.

## First beginnings

In NZ, environmental education first received a public airing at the 1970 Physical Environment Conference (eg. Gair pp.287-91 and Roberts pp.361; Physical Environment Conference 1970). Over the following five years environmental education gradually gained increasing recognition owing largely to the educative role of the National Conservation Week campaign committee. Also the setting up of the Environmental Council (a government advisory body), the Commission for the Environment (a government department), and the Joint Centre for Environmental Sciences (University of Canterbury and Lincoln College) focussed further attention on environmental problems and hence the need for environmental education.

By the mid-1970s environmental education had become the focus of four major meetings (Table 1). A brief attempt to define the topic was made by Norman (1975) while short surveys of the field, including developments at each time, were made by Dowling (1976, 1977, 1978) and Stewart and Dowling (1978). At beginning of the 1980s, the emergence of the debate placed all other environmental concerns into its shadow. However, environmental education was still gaining substance and a landmark contribution was made in a paper entitled *Environmental Education: A Philosophy for a Dynamic Land* (Simpson 1982). The paper succinctly summarised environmental education in NZ at that time, and provided important directions for future development.

<b>TITLE</b>	<b>ORGANISERS</b>	<b>DATE</b>	<b>VENUE</b>
Seminar on Environmental Education	Commission for the Environment	Nov 1976	Victoria University of Wellington
Using the Environment in Education	Department of Education	Jan 1977	Lincoln College
Environmental Education Workshop	Canterbury Environment Centre	Feb 1977	Christchurch Teachers' College
Youth Environment Conference	Department of Education	Dec 1978	Auckland Teachers' College

### **NZAE**

In 1984 a major step forward for environmental education took place with the formation of the New Zealand Association for Environmental Education (NZAE) in Christchurch. The aim of the association was to develop environmental education in NZ, especially within schools. In its first twelve months the association contacted every school in the country, held half a

dozen courses for teachers, as well as one for teachers' college lecturers, organised the promotion and sale of an Environmental Education Sourcebook, and put forward three submissions on environmental education to the NZ government.

International contacts were being made, especially with Australia. In 1985-86 a Ministry for the Environment education specialist spent a year working in the Environmental Education Section of the Department of Arts, Heritage and Environment in Canberra (Ellis 1986). In addition, the president of NZAEE attended the fourth National Conference of the Australian Association for Environmental Education in Melbourne in September 1986 (Jowett 1986). In 1987 the Inaugural Conference of the NZAEE was held and focussed on the theme of Environmental Education through Outdoor Education (Rolfe 1988). This was a significant conference in that it attempted to utilise the existing concept of environmental education as being equated with outdoor education and gently began to show that the two were not synonymous.

### School developments

The first major syllabus statement in New Zealand education was the primary syllabus framework promulgated in the 1928 publication *Syllabus of Instruction for Public Schools*. However, no mention was made of any environmental concept. In 1942 the secondary syllabus core was established in *The Thomas Report*. It suggested the first aim of science was 'to give the pupil, in broadest outline, a simple understanding of man and his environment' (p.35). It also called geography in a sense "human ecology" (p.28). Twenty years later *The Currie Report* which made a general examination of New Zealand education made no reference to environmental education. However, in 1969 the report of the curriculum review group of NZPPTA in the book *Education in Change* suggested that the secondary school curriculum could be divided into four main areas of study - the first one being 'investigations of the environment'.

In 1979 a significant step forward was made with the publication of the *Environmental Education Handbook: for New Zealand Secondary Schools* (Dowling 1979). This provided a general review of the subject, sample curricula and a large list of available environmental education resources including literature, audio-visuals and activities. Two years later, in 1981, the Department of Education held its very first environmental education conference at Lopdell House in Auckland. Entitled *Environmental Education Across the Curriculum* its aim was to promote discussion about the nature and place of environmental education in both primary and secondary curricula. The conference was built around proposals made by Unesco/UNEP for environmental education across the global community - that environmental education seeks to raise levels of understanding about the implications (both social and physical) of current patterns of resource use,

and is best implemented in a multi-disciplinary fashion. It established that environmental education can work through a range of existing syllabus opportunities, thus creating a co-ordinated sequence of learning experiences extending from early primary school to the top of the secondary school.

The Lopdell House conference on environmental education was a substantial achievement in that it clarified the nature, aims and characteristics of environmental education. Expectations of the consequences of such instructions were also discussed. Ideas about how environmental education could be incorporated into the curriculum were formulated, along with ways in which broad support for its concepts could be dispersed to administrators, inspectors, teachers and teacher-trainers alike. The conference represented, therefore, an important step in closing the gap between theoretical acceptance and practical implementation of environmental education in NZ.

In 1984 another sourcebook on environmental education was published - the second within five years (Scott 1984). It was entitled *Environmental Education: A Sourcebook for Teachers* and was published by the Commission for the Environment. The editor, Graeme Scott, drew together a wide range of contributors and the book reflected the depth of his own personal work in the field. He outlined environmental education as:

1. Being founded on concern for the environment;
2. Seeking to integrate the needs of people; and
3. Being multi-disciplinary in approach within the formal education system.

However, his definition of environmental education in which problem-solving was an essential factor proved to be far too narrow and teachers who used the book felt restricted by this approach.

### **Secondary school courses**

Traditionally, environmental education in NZ has been fostered at the secondary school level through social studies, geography, science and biology. However, more recently it has taken a major step forward through art education where a major goal is environmental perception. At the Sixth Form (Year 11) level the art syllabus incorporates a large environmental studies section. Other subjects such as English, Home Economics, Music and Physical Education also allow further study of the environment, while Outdoor Education enables all classroom subjects to be carried out in a different environment.

Specific courses dealing with the environment have been established in many secondary schools. For example, in the late 1970s Ashburton College offered its Sixth Form pupils 'Environmental Biology' - a six unit course focussing on human activities and their environmental consequences. Hutt Valley High had an alternative Fifth Form (Year 10) 'Urban Studies' course

which provided pupils with an integrated study of their local surroundings. Penrose High School presented 'Environmental Studies' to its Sixth Form pupils for several years. The course examined many aspects of the environment and entailed practice in pollution monitoring as well as theory. The Health Department lent the school equipment for detecting air pollution, and additional resources were purchased in 1974 with the assistance of a Mobil Environment Grant.

Other secondary schools have been active in local environment issues. For example, pupils at Tamaki College in Auckland investigated the water quality of Omaru Creek, a local polluted river running through the school grounds. Nearby Pakuranga College in Auckland foiled attempts by the local authority to convert their stream into a concrete drain. It tendered an alternative scheme instead, and found themselves involved in the planning process. Heretaunga College in Wellington became interested in the study of local development on its surrounding hills and quickly found itself involved in a detailed analysis of the environment. The students examined soil types, clay, water content as well as bush litter and accomplished many interdisciplinary skills in the process. This school has also held week-long programmes of environmental education bringing to its pupils' attention local and national environmental issues and problems.

A number of secondary schools have been granted awards for conservation and environmental activities. Taumarunui High School was awarded a conservation citation by the national Conservation Week campaign committee for its work in Tongariro National Park, clearing, planting and forming a lahar walk, two other schools have received Mobil Environment Grants. Long Bay College in Auckland received money to purchase a mini-computer for environmental studies in its Geography Department, while Shirley Boys' High School in Christchurch was given financial assistance to help in the costs of publication of a booklet describing natural and cultural features to be seen from the Shirley Urban Trail.

In the last five years there has been a marked increase in the number of courses offered, especially with the replacement of University Entrance by Sixth Form Certificate courses. Curricula in schools have large components of environmental education and in many cases it exists as stand along subjects. For example, at Melville High School in Hamilton, 'Environmental Studies' is offered as an option for pupils of Form 3 and 4. But even further than this, many schools put environmental education into action. Just two examples include:

1. Prospect Primary School in Auckland which solved its litter problem by converting it into fuel pellets to heat the school (Jackson 1978);
2. James Hargest High School in Invercargill which has established a biogas plant to heat its greenhouses in winter (PPTA News 1985).

### **Tertiary courses**

Environmental education at the tertiary level has been surveyed by Dowling (1977), Gunn (1986) and Buchan (1990). A number of environmental education courses exist in both teachers colleges and technical institutes. In addition they occur in most of the country's eight universities. For example, the University of Auckland offers MSc and PhD degrees in Environmental Science and Victoria University of Wellington has an MA in Environmental Studies. Lincoln University (the former Agricultural College of the University of Canterbury) in Christchurch offers a wide number of environmentally based degrees including a BSc, MSc, PhD in Environmental Science or Applied Biology, and Bachelor degrees in Resource Studies, Parks and Recreation, and Landscape Architecture.

### **The NZ Natural Heritage Foundation**

An excellent development in the promotion of environmental education in NZ has been the establishment and development of the NZ Natural Heritage Foundation. Its aim is to educate people of all ages about the natural heritage of New Zealand. The co-directors are Dr David Bellany, our keynote speaker at this conference, and Professor Brian Springett of Massey University. The foundation has been applauded for its tracking of environmental education through the curriculum as well as its production of school resources. In the field of wider public education has been its development of ecotourism tours throughout NZ (Springett *et al.* 1991).

### **The new National Curriculum of NZ**

Last year environmental education in NZ received a further boost when *The National Curriculum of New Zealand Discussion Document* was prepared by the Ministry of Education (Ministry of Education 1991). The National Curriculum framework consists of a set of learning principles, essential learning areas, generic skills, and national curriculum objectives, underpinned by assessment methods. It provides an intelligible structure, or reference point, from which government, schools and teachers can plan, develop and measure the curriculum. It also links the various elements of the curriculum, providing a coherence which is absent at the moment.

Within the proposed seven essential learning areas (of Language, Mathematics, Science and Environment, Technology, the Arts, the Social Sciences, and Physical and Personal Development) are new areas of enquiry (Table 2). In defining the area of Science and the Environment the document includes the following statement about environmental education:

Environmental Education enables students to understand how people modify, respond to, and conserve their environment. The curriculum should give students the opportunity to explore environmental issues important to their community, to New Zealand, to the Pacific and to

the wider world, and it should give them the knowledge and skills to make appropriate decisions about the use of resources and of the environment. (Ministry of Education 1991, p.12)

The National Curriculum, which already encompasses science and geography students with approved national syllabuses, suggested that environmental studies could possibly be developed. Currently a draft policy statement on environmental education is being developed and will be finalised and distributed to schools shortly (Ferguson personal communication).

**Table 2 The Relationship of the Essential Learning Areas to Present and Possible Future Subject Areas**  
NZ Ministry of Education (1991)

The Essential Learning Areas	Examples of subjects commonly taught in schools at present	Some areas for future development
• Language	English*, Maori*, French*, German*, Japanese, Samoan, journalism, media studies	Asian and Pacific languages
• Mathematics	mathematics*, economics*, statistics	
• Science and Environment	science*, geography*, biology, physics, chemistry	environmental studies
• Technology	workshop craft*, workshop technology home economics, technical drawing, keyboarding, computer studies	graphics & design information technology CAD/CAM**
• Social Sciences	social studies*, history*, geography*, economics*, cultural studies	citizenship
• The Arts	music*, art*, drama, dance	performance courses
• Physical & Personal Development	physical education*, health, outdoor education	

\* Subjects with approved national syllabuses

\*\* Computer assisted design/Computer assisted manufacturing

Recently the first tangible outcome of *The National Curriculum of NZ* document emerged with the preparation of the draft *Science in The National Curriculum* statement (Ministry of Education 1992). Released earlier this

year it has already been the subject of much comment and at present the final document is being prepared for approval sometime in the next few months. At the core of the proposal is the general objective of helping students to develop knowledge, attitudes, and skills in regard to the physical, biological, and technological components of their environment. This objective is carried out in six 'achievement aims' carried out through eight 'progressive levels of achievement'. For example, in the achievement aim of 'Making Sense of Planet Earth and Beyond' the students will move from the Level 1 objective of sharing responsibility for their classroom environment to (2) the school environment, (3) their local environment, and (4) research on a global environmental issue. In a similar way the 'Making Sense of the Living World' achievement aim is carried out from Level (1) accepting responsibility for the needs of a house plant and an animal to (7) being able to develop a defensible position about a selected issue affecting the NZ environment: eg. fishing quotas, urban waste disposal, or the milling of indigenous forests.

### **Discussion**

In the opening address to the New Zealand Environmental Education Conference at Massey University, Palmerston North in August 1991, the Associate Minister of Education the Hon. Roger McClay stated that 'The former Department of Education had a policy of encouraging environmental education across the curriculum' (McClay 1991, p.6). In NZ environmental education is still being carried out in the the existing curriculum slots. This approach has resulted in there being elements of environmental education in Science, Social Studies, Geography, Outdoor Education, and in some other curriculum subjects (McClay 1991).

The term 'Environmental Education' includes:

1. School based environmental study programmes;
2. Environmental studies across the whole education sector, including science and resource management at the tertiary level;
3. Wider public education on environmental concerns;
4. Information and training about environmental principles and resource management for key groups and professions; for example, planners, engineers, policy analysts, government and private sector decision makers.

I would argue that the starting place for curriculum building is usually the identification of the basic principles upon which the curriculum is constructed. At least three major goals are common to the educative process wherever encountered. The curriculum should:

1. Help individuals to enjoy many-sided and meaningful lives - a



personal goal;

2. Provide for the continuing functioning of society - a citizenship goal; and
3. Promote entry into the world of work - a vocational goal.

Data skills and concepts from environmental education contribute to each of these skills in a major way. Goal 1 provides students with an understanding of the environment and their relationship to it. Goal 2 relates to the intelligence which can be brought to bear on environmental problems through laws and human behaviour whereby people will act as stewards in partnership with nature. The third goal involves everyone as consumers and producers in the unending process of conversion from attribute to resource.

These statements suggest that for schools, environmental education means developing programmes that help students to understand natural and human environments and their interrelations (after Stapp 1978). This involves consideration of:

1. Natural resources;
2. Biological conservation;
3. Human populations;
4. Economics and technology;
5. Environmental ethics; and
6. Environmental decision-making.

This then is a basis on which curriculum in environmental education may be built. I think it is essential to include these aspects in the subjects that we already teach. To me this is the next step for environmental educators. We must read and understand The National Curriculum of NZ, examine our subjects, identify the main principles of environmental education and then set about introducing them. Environmental education is not a process, but it involves understanding, knowledge and action. If we simply call it a process it will be lost entirely in the same way that Taha Maori (the study of Maori Culture) was largely ignored because it had no 'home' curriculum.

In summary, environmental education should:

1. Be a life-long process;
2. Consider the whole environment;
3. Be interdisciplinary, giving students a balanced perspective;

4. Examine the environmental and socio-economic consequences of plans for economic growth and development;
5. Help students discover the symptoms and causes of environmental problems and possible solutions and alternatives;
6. Develop environmental sensitivity, understanding, problem solving skills and values by using examples from their immediate environment, before introducing more complex environmental problems;
7. Use a variety of learning situations and learning teaching strategies emphasising practical, 'hands-on' experiences;
8. Examine major environmental issues with local, regional, national and international co-operation;
9. Focus on current and potential environmental situations within a historical context; and
10. Promote the value of and need for local, national and international co-operation.

### **The future**

For environmental education to capitalise on its fine start in New Zealand, a commitment to it needs now to be made by the Ministry of Education and the Ministry for the Environment.

Another important need is to establish teacher training programmes in environmental education at teachers' college levels so the pretraining and inservice training of teachers can be made (Percy 1985). Also, adequate funding should be made to allow for relevant resources to be developed along the line of the conservation video.

But most important of all, New Zealand needs to make a formal response to the UNEP environmental education programme. It is probably the only OECD country and one of only a few Unesco member countries not to do so. A tangible expression of such a commitment once it was made, would be to establish an environmental education section within the Ministry for the Environment. With a staff of one or two officers this unit could give environmental education the direction and impulse to make huge gains over the next decade. The benefits are enormous, not the least being the possibility of an even higher quality of life.

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