



The Handbook of Environmental Education

Joy Palmer and Philip Neal

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The handbook of environmental education

The 1990s have seen a tremendous increase in environmental concern in all sections of the population. Young people in particular want to know more about how they can contribute to the conservation of the planet, and formal education is beginning to reflect this. The National Curriculum in England and Wales, for instance, includes environmental education as a compulsory cross-curricular theme and in Australia and the USA there are similar moves to ensure that all students are given an opportunity to learn in this area. Joy Palmer and Philip Neal, experienced teachers and teacher educators in primary and secondary classrooms, here explain what environmental education is and how it can best be implemented at school and classroom level. In this handbook, school heads and curriculum coordinators will find advice on establishing a whole-school policy and motivating the staff who need to implement it. Class teachers will find practical ideas for planning and assessing environmental education in the whole curriculum context. Throughout the book, case studies drawn from a variety of settings allow teachers to see how environmental education can work for them, while the final section directs teachers who want to explore certain issues further with annotated lists of organizations in the UK, USA, Canada, Australia and New Zealand which can provide information, class materials and further help.

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Foreword

Environmental education is now well recognized in schools and colleges world wide and firmly established in some of them. Many national and international exchanges of views have taken place. During 1992 each of us was privileged to attend a world conference where environmental education was highlighted. Joy Palmer was at Rio de Janeiro for the Earth Summit in June of that year, attending the Global Forum. Philip Neal represented the National Association for Environmental Education (NAEE) at the World Congress for Environment and Development (Eco-Ed) in Toronto in October, a follow-up to the Earth Summit. Both were able to present papers to international delegates and to listen to other opinions. Although different views on, and approaches to, environmental education are apparent, it is evident that global views have much in common.

Colleagues, both local and overseas, are eager to find out more about environmental education and to develop worthwhile curricula. Surprisingly, few texts exist where an attempt has been made to encompass just what is meant by environmental education in the school system and what needs to be done to implement it in the whole curriculum. It is against this background that this handbook has been written.

We have drawn on our long experience in English schools and colleges and on our involvement with the UK's NAEE and the Council for Environmental Education. At the same time we have tried to use our contacts with other parts of the UK and overseas to exemplify and further the debate. *Any readers outside the English system are asked to transpose the implications of any part of the text which is English orientated to their own situation.*

One of the conclusions drawn from global meetings is how similar are the aims, objectives and methods of approaching environmental education in various countries. Only the specifics of organization for learning and opportunity are different. The handbook has tried to cover as much ground as is possible within the limitations of reasonable size. It

follows that some readers may not find any comment on the particular aspect in which their interest lies. For instance one problem throughout the world is lack of coherent programmes in teacher training for environmental education. It has not been possible to concentrate on this here and reference to initial teacher training and in-service training are only made in passing. Providers of resources for environmental education are numerous and any that have been omitted are the victims of restricted space; no other implication is intended.

Whatever the stage of development of environmental education in any school, wherever located, we hope that this handbook will be of some use to its teachers in furthering this vital area of the curriculum.

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Joy Palmer
Philip Neal

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Part I

Setting the scene

The purpose of this Part is twofold: firstly to provide an overview of the development of the cross-curricular theme of environmental education – its aims, definition and content; and secondly to focus on the implementation of the subject in the formal education service today – its objectives, place in the curriculum, student entitlement, and key issues which arise from these. In short, it will be concerned with national and international policy developments in environmental education and what these mean in practice for teaching and learning in schools. Key issues arising will be outlined, and will be carried forward for illumination and discussion in subsequent pages.

Concern for the environment

A reflection on the conjunction of the two words 'environment' and 'education' raises the key questions of why, when and for what purpose they have been linked. Presumably answers to these questions range from the feelings and concerns of individuals through to events of international and global significance. In the belief that no educational programme of work in this area can be successful without individual commitment and personal concern, we begin with a glimpse at the preliminary findings of a research study in progress at the University of Durham (Palmer 1992) on the development of personal concern for the environment.¹ The first phase of this research is an investigation into formative life experiences of environmental educators who presumably are persons already environmentally aware. They are not to be classed as the general public in this context, with whom it is likely that any increase in environmental concern has been triggered in the main by TV programmes and international disasters such as Bhopal and Chernobyl. The research is based on the assumption that if the ultimate aim of environmental education is to sustain our planet and its resources for future generations, then a related aim must be to provide an education which encourages people to strive towards that goal. Presumably, if environmental education is about producing well informed and environmentally active adults, then those responsible for it should have some idea of the kinds of learning experiences which help to influence the development of environmental care and concern.

The research technique involves retrospective analysis of the experiences of environmental educators who currently demonstrate their personal care and concern for the world in their everyday lives. Participants in the study were invited to supply details of their approximate age, gender and of their present activities which demonstrate an informed and responsible approach to environmental matters (e.g. practical conservation, recycling, belonging to organizations active in environmental affairs, enjoyment of the outdoors, living a 'green' lifestyle and reading books and journals about environmental issues). The purpose of seeking

this latter information was to ensure a sample of subjects who demonstrate genuine and practical concern for the world, rather than paying lip service to the essence of environmental education. Participants were then asked to provide an autobiographical statement of life experiences and formative influences which have contributed to their present concern for the environment and interest in environmental education, indicating if they consider there to be any single most important influence or life stage. Details sent to participants included the purposes and requirements of the study, but did not give any examples of suggested experiences or influences. Thus the responses were original and free from bias.

A total of 232 usable responses was received, comprising 102 from males and 130 from females. Full details of the breakdown of ages of subjects and analysis of data are provided elsewhere (Palmer 1992), but an overview of the findings raises some key issues relevant to subsequent discussion in this present volume. The autobiographical statements were subject to content analysis, and all experiences/influences mentioned explicitly or prominently by subjects were coded into one of 30 preliminary categories of response. These were then refined and results expressed in 13 final categories, which included a number of subcategories from the original list of 30. The response frequency for the final categories is shown in Table 1.1.

Table 1.1 Number of subjects responding in each category
N = 232

Outdoors	211
Education/Courses	136
Parents/Close relatives	88
Organizations	83
TV/Media	53
Friends/Other individuals	49
Travel abroad	44
Disasters/Negative issues	41
Books	35
Becoming a parent	20
Keeping pets/Animals	14
Religion	13
Others	35

The category 'Outdoors' comprised three subcategories: 'Childhood outdoors' (97 responses), 'Outdoor activities' (90 responses) and 'Solitude/Wilderness' (24 responses). A large number of people make explicit and detailed reference to memorable experiences outdoors as a child, perhaps as a result of being brought up in the countryside, going on holidays or being encouraged to play in the open air:

From an early age I was taken to watch fish in the stream and to see the different flowers as the seasons passed. My walks to school took me along country roads where scabious and orchids grew. I was encouraged to appreciate the beauty of the common flowers . . . to marvel at the swallows as they flew at speed through narrow gaps to their nests. . . .

Very strong images persist – swinging on farm gates, rolling down steep fields until dizzy, the smell of new mown hay and the cattle byre, the shade of a huge sycamore, lots of walks to 'secret' places, sitting on large boulders in fast flowing rivers, laughter and sunshine . . . the greyness of the city on return.

I particularly remember feeling the beauty and wonder of nature, bathing in a freshwater pool, walking in woodlands and hills.

For many, such experiences developed into a great enjoyment of the outdoors later in life and numerous outdoor activities are mentioned which have contributed to environmental care and concern: walking, hostelling, canoeing, camping, sailing, mountaineering, backpacking and birdwatching to name but a small selection. Twenty-four subjects specifically mention the significance of solitude and feeling 'at one' with nature through remote or wilderness experiences.

The category 'Education courses' (136 responses) comprised two sub-categories, 'School courses' (51 responses) and 'Higher education/Adult courses' (85 responses). Many subjects talk enthusiastically about experiences at school, particularly relating to 'A' Level courses:

My concern for the environment stems from my increased knowledge about global issues four years ago, when I started my 'A' Levels.

The single most important influence was my 'A' Level ecology field course, which was the only part of my 'A' Levels I enjoyed.

For others, environmental concern was most strongly influenced by courses in higher education:

I believe the single most important influence has been my education. Having degree level input in geography . . . studying developing countries . . . this has heightened my concerns for the future of the planet.

The influence of other people on the development of young people's attitudes, knowledge and concern cannot be overestimated as the research data shows. 'Parents and close relatives' are cited by 88 individuals as a major influence, and another 49 are in the category 'Friends and other individuals'. Many nostalgic accounts detail happy memories of the influence of others:

My granny was a herbalist and taught me in-depth understanding of the countryside, how animals and plants react together; and respect for the environment.

I was brought up by intelligent, caring lovers of the countryside (my parents) who believed that the greatest and longest lasting influences were to be found outside.

Probably the most important influence was my mother, who has brought me up in the belief that any unnecessary waste is wrong.

My parents loved the country. Uncles and aunts were bright green before green existed, growing vegetables and tobacco, making elderberry and cowslip wine, eating all sorts of wild plants and loving birds. My grandparents grew tomatoes, kept pigeons, taught me to milk cows and tickle trout.

My interest and concern was born from the enthusiasm of one particular teacher.

The category 'Organizations' includes subcategories of 'Childhood/Youth organizations' (28 responses) including Brownies, Guides, Cubs, Scouts and Duke of Edinburgh Award programmes, and 'Adult organizations' (55 responses) ranging from natural history clubs and environmental education associations, through to 'green' political parties and active campaigning bodies. The Scout and Guide organizations can take credit for a great deal of influence on the youth of yesterday and citizens of today:

One of the earliest influences on my environmentalism was my scout training. We were taught how to live in and off the environment without damaging it. . . . When we left a site, all trace of our visit would soon disappear.

Subjects speak very positively of the TV and Media influence (53 responses):

I have always enjoyed watching nature and scientific programmes on television, and I think that David Attenborough's 'Life on Earth' series, which I followed avidly with my family in my early teens, was vastly responsible for my interest and enjoyment in the environment from an early age.

I suppose that my concern was born primarily of intellectual stimulation by the media.

and another 35 speak of the great influence that reading books has had on their lives. By far the most commonly mentioned book is Rachel

Carson's *Silent Spring*, which clearly made a huge impact on individual thinking.

For some, it was 'Travel abroad' (44 responses) that made a major impact:

There is no question of what influenced me, and that was travel, going to new environments that gave me a 'buzz', a wanting to learn as much about the world around me as possible. The outstanding event was at 16 when we went to the Sahara Desert. The beauty of this desert contrasted with the stereotype wasteland that I had been taught about.

and for others, 'Keeping pets/Animals' (14 responses), 'Religion' and the presence of God the Creator in the natural world (13 responses) and 'Becoming a parent' (20 responses):

When my daughter was born was the most influential factor, I want her to see and remember green countrysides. Most of all, I want her to see 'a safe planet', not a nuclear desert or a war-torn world.

I think having my first child made me first question the environment around me. It was the fear that my son might be harmed by atmospheric pollution from lead emissions from cars that brought out a certain anger in me.

While the majority of subjects write extensively of positive influences, a gloomy shadow is cast by 41 who refer to environmental 'Disasters/Negative issues' including catastrophes, nuclear dangers, pollution, planning issues, animal cruelty, and factors particularly affecting developing nations:

The single most important influence to me was the famine in Africa. It made me realize that our climate is changing not just because of natural change but because of pollution and deforestation. What we do in our own back yard affects us all.

. . . soot-covered buildings, polluted rivers, traffic. . . .

I was surrounded by whole, dead, bloody pigs hanging from hooks.

I grew up in Teesside and saw pollution pumped into the air from industry.

A real shock to me was seeing my childhood village transformed to suburban dormitory . . . characterless . . . shaved lawns, cars, design-accommodating patios and pavement.

The final category of 'Others' (35 responses) includes 9 responses from subjects who describe their bad experiences of living in a town/concrete

jungle; 7 who have a particular awareness of health issues as a result of being ill or witnessing ill health in others as a result of environmental factors; 5 who have been inspired to concern by music/poetry; 4 who claim that working with the disabled or homeless has been influential; 3 who cite death of another individual (2 tell the tragic tale of death of a close relative as a result of environmentally related diseases); 2 who have been influenced by living in an 'environmentally aware' community; 2 who cite modern technology as a major impact on thinking; one who is influenced by an awareness of a lack of environmental education in her own life; one who describes the influence of personal heritage, and one who claims that personal networking, 'being' with others, has been a major source of inspiration for concern.

A second phase of data analysis involved coding of references to single most significant life experiences. As shown in Table 1.2, 80 individuals identify a single most important influence. The same 13 final categories are used to record the analysis.

Table 1.2 Single most important life influences
N = 80

Outdoors	23 ^a
Education/Courses	7 ^b
Parents/Close relatives	21
Organizations	5
TV/Media	2
Friends/Other individuals	4
Travel abroad	5
Disasters/Negative issues	4
Books	3
Becoming a parent	1
Keeping pets/Animals	0
Religion	1
Others	4

Notes

^a Childhood outdoors (16), Outdoor activities (4), Solitude/Wilderness (3)

^b School courses (2), Higher education (5)

While present space does not allow for a lengthy discussion of the results of this autobiographical data analysis, a number of trends may be identified and issues raised which are of great significance to anyone who is concerned with the development of environmental education programmes in the formal education service. As mentioned at the outset, if environmental education is about 'producing' informed and environmentally active citizens of tomorrow, then presumably those