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DEVELOPING AND EVALUATING A SOCIALLY CRITICAL APPROACH TO ENVIRONMENTAL EDUCATION AT PHILOSOPHICAL AND METHODOLOGICAL LEVELS IN HIGHER EDUCATION

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ABSTRACT

This study seeks to answer the following question:

To what extent can I establish a sound theoretical basis for realising socio-cultural and ecological sustainability through a Masters course in environmental education?

This question arises from two main interests in connection with my role as tutor and course director of an *MA in Environmental Education* distance education course. Firstly, I am interested in whether the philosophical and methodological principles embodied in the MA course texts and learning processes are compatible with my students' professional aspirations related to their socio-cultural norms and ecological realities; and, moreover, whether a critically inspired but pragmatic curriculum theory of environmental education can make clear its moral, social, political and ecological imperatives.

In deriving insights into the research question, I have adopted a reflexive research process underpinned by a critical realist philosophy and a critical action research methodology (Chapter 2). Both the philosophy and the methodology help inform the pedagogical issues relating to socially critical approaches to environmental education in Chapter 3, and the conceptual issues relating to environmentally-related concepts such as sustainability and development in Chapter 4. Following a justification for a critical action research approach to researching my *praxis* as an environmental educator, I evaluate my students' understanding of these issues and concepts, and of my professional role in the process, through an analysis of a number of 'critical encounters' with them in Chapter 6.

In Chapter 7, I offer four main insights that may be of value to researchers in higher education who are interested in critically inspired approaches to environmental education.

1. The *MA in Environmental Education* course encourages students to become key agents in their own learning since the course materials stimulate their reflection and action about issues that are relevant to their particular socio-political contexts;
2. A dialogical and individualised tutor-student learning framework, gives students confidence in translating the course processes and content into programmes that have relevance to their professional contexts.
3. By using critical action research to consider fundamental ways of thinking about their own motivations and worldviews, it is possible for students to apply a critical theory of environmental education in improving their *praxis*, and to examine the underlying political and economic forces responsible for ecological and social harms in their communities.
4. Critical realism offers me a philosophical perspective for collaborative and mutually enhancing learning with my students, and that recognises the significance of establishing dialectical relations with the biophysical world.

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ACKNOWLEDGEMENTS

The *MA in Environmental Education* students whose commitment to engaging critically and reflectively with the course processes and content has sustained my enthusiasm for managing and tutoring this distinctive programme. I also owe a special thanks to Roger Firth for the productive academic relationship that gave rise to the *MA in Environmental Education* course during the mid-1990s. I value John Huckle's critical attention while writing this research account since it is his theorising of a critical theory[1] of environmental education that encourages me to search for a coherent theoretical foundation for achieving ecological and social sustainability[2] through education.

Several other people have been influential in advancing my understanding of the theory and practice of environmental education, especially how it is formulated and operationalised in different cultural contexts. In South Africa, these include Eureta Janse van Rensburg of Rhodes University, whose work is widely known throughout Southern Africa, and Pippa Heylings through her tutoring of Rhodes University's (South Africa) distance education Certificate in Environmental Education for students in Zanzibar. In East Africa, I am also pleased to have worked with Dorcas Otieno and her colleagues in Kenyatta University, Nairobi which provided first-hand insights into how socio-cultural factors relate to poverty alleviation and sustainable resource use in Vihiga District, Kenya. In my own university, I am indebted to

[1] *Critical theory* seeks transformations in the social order so that knowledge is produced that is historical and structural, judged by its degree of historical situatedness and its ability to produce *praxis* or action (Denzin & Lincoln, 1998: 187). It focuses on structural variables in human relationships, particularly those of class and power in an effort to examine sources of social domination and repression (Chapter 2.5).

[2] *Sustainability* is a term that has entered the discourse of environmental education since the late 1980s and is largely in response to the deterioration of environmental and social systems associated with economic growth, though it is hardly a new concept. Pinchot addressed it as the basis of the utilitarian ethics of the conservation movement of the early 1900s: "Conservation means the greatest good to the greatest number for the longest time" (Pinchot, 1910: 42). The educational implications for environmental education of the concepts of 'sustainability' and of 'sustainable development' processes are problematised in this research account, particularly how these terms draw attention to economic, cultural and political issues, and the implications for the wellbeing of social and ecological systems (Chapters 1.5 and 4.3).

two successive Course Administrators, Tina Pottrell and Natalie Seebaransingh for their cheerful intelligence and capable administration. The following colleagues have been generous with their encouragement and advice: Michael Bassey, Phil Garner, Mo Griffiths, Glynn Kirkham, Connie Marsh, and Peter Ovens.

Above all, I want to acknowledge the possibility that my childhood years spent on and around the family farm in Cambridgeshire began a lifelong interest in environmental matters leading to the critical reflections embodied in this research account. As I now reflect on the potential of a socially critical environmental education capable of responding to the great challenges facing humanity, I recall how, during my lifetime, humanity has progressively converted the resources of nature into the things that enable it to flourish. However, the consequences of exhausting and polluting these resources makes it imperative that human progress takes notice of the limits imposed by nature and the destructive consequences of society's technical and consumer excesses. If, as Marx saw it, nature really is 'man's inorganic body', there is every justification that we should look after this outer 'body' and recognise the significance of the dialectical relationship between humans and nature which is crucial to the development of human potentialities. For these reasons, the dilemma that Rachel Carson drew attention to 40 years ago is even more compelling today as it was then[3]:

> We now stand where two roads diverge. But unlike the roads in Robert Frost's familiar poem,[4] they are not equally fair. The road we have long been travelling is deceptively easy, a smooth superhighway on which we progress with great speed, but at its end lies disaster. The other fork of the road - the one 'less travelled by' - offers our last chance to reach a destination that assures the preservation[5] of the earth (Carson, 1991: 240).

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[3] Rachel Carson's celebrated book, *Silent Spring*, first published in 1962 in the USA by Houghton Miflin, documented the catastrophic decline of songbird species following the wholesale use of pesticides in agriculture.

[4] From 'The Road Not Taken' by Robert Frost (1874-1963).

[5] I think Carson uses the word *preservation* in the sense of protecting of the Earth *from* human interference as opposed to the utilitarian meaning of *conservation* that is the wise management of 'nature' *for* human purposes - as in forestry management for timber products.

STYLE AND STRUCTURE

The presentation of this research account does not follow the conventional model that McWilliam (1993: 200) refers to as "linear articulations of the theory/method/results nexus". To follow a 'stage-set' prescription of Literature Review, Methodology, Results and, finally, Conclusion would have found me in need of a more compliant presentation, one in which theory, method and findings interact and where 'conclusions' do not just appear at the end. This 'non-linear' and reflexive[6] orientation allows me to theorise at every stage of my research: when critiquing relevant research literature; formulating research questions, identifying research methodologies; and interpreting research findings. To see theory "as a tidy point of embarkation and 'results-as-findings' as a convenient point of disembarkation" (*ibid*) does not correspond well with my main intention of aiming to test theories and personal understanding rather than to discover objective findings. By being reflexive, I am able to engage with the kind of critical action research that I encourage my students to undertake in their varied professional and cultural contexts (Chapter 2.6). In this way, I can come to appreciate more fully the difficulties they experience in trying to maintain control over their teaching in times of rapid social and ecological change, and cavalier educational policies. I see my task as discovering the meanings the students and I attach to our learning, how we interpret situations and what our theoretical perspectives on these issues are. By adopting a reflexive stance to the writing, I am able to claim learning outcomes as the research account progresses rather than leaving all such claims to the final chapter. Importantly, reflexivity acknowledges that I bring my values and expectations to this research, and I discuss in Chapters 1.6, 2.3.5, 5.3, 6.7 and 7.3 the implications of reflexivity for any truthful-representations and valid knowledge-claims that I make.

The data sources drawn on are primarily:

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[6] *Reflexivity* is a process by which the observations that we make are dependent on our prior understanding of the subject – they refer back (Siraj-Blatchford & Siraj-Blatchford, 1997; Chapter 5.2). See reflexive modernisation (Chapter 4.4.2) that refers to coping with risk and uncertainty as one experiences social life of late modernity (Beck, 1992a: 22; Giddens, 1998; Smart, 1999).

- The growing body of literature that is associated with environmental education research and teaching, particularly that connected with critical approaches to education for sustainable development (Chapters 1.5, 2.5, 3.5);
- The philosophical and methodological issues informing environmental education research (Chapters 2 and 5);
- The literature in connection with distance education (Chapter 3.3).
- The recent social sciences literature with regard to: the reciprocity of knowledge and power; the domination of economic and social development; the ambiguities of sustainable development; the contradictions of globalisation; and the enigma of nature (Chapter 4);
- The evidence gained from students' coursework and tutorial exchanges (Chapter 6).

In addition, in Chapter 7 I refer to students' responses to a questionnaire that they complete at the end of their MA studies, not to use these responses as additional primary data but in order to reinforce the evaluation of the evidence deriving largely from Chapter 6.

The relationships between the terms environmental education (EE), education for sustainability (EfS) and education for sustainable development (ESD) often lead to confusion. These uncertainties arise from the various transformations in thinking about the traditional goals of environmental education exemplified in the current vigorous debate among researchers worldwide about the goals of environmental education (Huckle & Sterling, 1996; Fien, 2000; Janse van Rensburg, 1996; ESDebate, 1999; Plant, 1998a). As I explain in Chapter 1.5, in some measure the debate is stimulated by the attention given to the widespread acknowledgment of 'sustainable development' in socio-economic policy and practice which foregrounds issues concerned with social justice, equity, democratic change and participation. Both ESD and EfS have their roots in environmental education that has evolved since the 1960s, and in development education that first emerged in the 1970s. Although I try to differentiate between ESD and EfS in Chapter 1.5, I use the term environmental education throughout this account.

I now provide a summary of the substance of each chapter and the judgements that provide coherence to the progression of these chapters.

Chapter 1, *Contextual Influences*, explores five 'contexts' that determine the foundation and course of my research:

- *Motivational*: I describe the personal motivations that led to the setting up of the *MA in Environmental Education* course and reflect on how my interest in emancipatory forms of education has arisen.
- *Pedagogical:* In response to the deepening concerns about the root causes of the ecological crisis, I explore developing perspectives on environmental education and justify a critical theory of education that underpins the *MA in Environmental Education* course.
- *Historical:* I examine the substance of the reports from various international committees and conferences that have brought the ecosocial crisis to public attention during the last 30 years, including a critical concern about the significance of sustainable development.
- *Institutional:* I appraise rationalising processes in higher education that tend to undermine scholarly opportunities for addressing pressing social and ecological issues through education.
- *Personal:* I recall episodes in my own life in order to evaluate whether 'significant life experiences' are influential in shaping my current role as teacher/researcher in environmental education.

In addition to these five contexts, a key consideration of Chapter 1 is to introduce the main ideas of critical theory and the bearing this theory has on my role as environmental educator/researcher for the *MA in Environmental Education* course.

Chapter 2, *Philosophical and Methodological Claims* centres on the philosophical (ontological and epistemological) and methodological questions related to the relevance of positivist, interpretivist and critical paradigms in environmental education research. I set the discussion within the broad social perspectives of modernism and postmodernism. In arguing that environmental education research should be critical and emancipatory as required of critical

theory, I am acknowledging that the root cause of environmental problems is located in the nature of our current social, economic and political systems and in the worldviews, institutions and lifestyle choices that support them. In examining these theoretical issues, I argue that critical realism provides a philosophical perspective for my research account that acknowledges the existence of the related domains of real processes, actual events and empirical evidence, while at the same time acknowledging that the interpretation of this evidence is socially constructed. Critical realism recognises that the biophysical world is a concrete reality, *of which humans are a part*, and that we can come to know our relations to it, *and thus to ourselves*, through dialectical processes.

Chapter 3, *The MA in Environmental Education: process, pedagogy and distance education*, focuses on the rationale for incorporating a critical theory for the *MA in Environmental Education* course. Firstly, I analyse how learning experiences are constructed and presented in the course texts so that my students are encouraged to develop a socially critical stance with respect to their professional practice as environmental educators. Secondly, I explore the way students create and generate environmental knowledge dynamically through their interaction with the socio-economic and ecological conditions in which they work. This raises not just epistemological questions concerning meaning variance across cultures, over time and between languages, but more importantly ontological questions concerning the worldviews of my students. Thirdly, in reflecting on the 'effectiveness' of my role as an environmental educator involved in running a postgraduate distance education programme, I advance a particular view of distance education, one that is in sharp contrast to the prevailing technical model that sees distance education students as passive recipients of 'expert' knowledge delivered to them from outside their cultural contexts. The discussion in this chapter enables me to identify the first two research questions that are subject to evaluation in Chapter 7 following the generation of qualitative data from the critical encounters with students in Chapter 6.

Chapter 4, *The MA in Environmental Education: Contested Knowledge: issues of power and complexity*, examines six concepts related to the emerging environmental ideology. These are: development, sustainable development, globalisation and reflexive modernisation, environmentalism, and nature. I provide extracts from the Study Guides of the *MA in*

Environmental Education course to illustrate where students engage critically with these concepts. In my examination of these concepts, I have been concerned with both the *abuse* of power as well as with the creative *use* of power as in critical theory's advocacy of individual and community empowerment. I evaluate my analysis of these concepts against critical realism's interest in how knowledge about the human-nature relationship is derived from a dialectical unity of theory and practice (*praxis*), where the theoretical understanding of contradictions inherent in society become constitutive of their very activity in transforming conditions. The discussion in this chapter enables me to identify two further research questions that are subject to examination in Chapter 7 following the generation of qualitative data from the critical encounters with students in Chapter 6.

Chapter 5, *Researching Praxis: a strategy*, summarises the outcomes of my research account in the preceding chapters and outlines a rationale for methodology and method that enables me to respond to the four research questions, two each at the end of Chapters 3 and 4. I begin by summarising my theoretical perspective based on the philosophy of critical realism before re-emphasising the reflexive stance taken in the qualitative research account to which I have drawn attention already in Chapters 1.6, 2.3.5 and 4.7. I consider validity with respect to the research findings as an issue for further discussion in Chapter 7. I also review ethical matters governing the research process, especially those that relate to students' assignments, my use of email and other written evidence as data sources.

Chapter 6, *Evaluating Praxis*, examines five 'critical encounters' that have arisen in my dialogues with students on the MA course. These encounters generate data reflexively through my analysis of student's engagement with the course materials and their participation in tutorial exchanges with me. My aim is to shed light on the main research question with reference to the theoretical issues that I have discussed in previous chapters so that I am in a position to respond to the four component research questions in Chapter 7.

Chapter 7, *Insights and Contributions*, evaluates what I have learned about the philosophical and methodological issues underpinning the course processes, and the relevance of critical approaches to environmental education, by considering my responses to the four component

research questions. Importantly, I reveal what I have learned about my own role as educator/researcher and the impact of the course in shaping the commitments and actions of the MA students to environmental education processes that are socially critical and action-oriented.

Fig A summarises the above structure of this research account, and shows how a critical examination of the issues raised lead to corresponding proposals. Whilst the thinner, vertical arrows suggest a linear structure to the writing, the bolder horizontal arrows relate to the issues and proposals that emerge from the writing. The three vertical dotted lines exiting from the Chapter 1 box indicate that the contextual issues discussed in Chapter 1 provide the basis for further discussion in Chapters 2, 3 and 4. In turn, in each of these three chapters I provide a critical examination of theoretical issues that then inform the research strategy developed in Chapter 5. This strategy enables me to generate and reflect on data in Chapter 6, and to close by responding to the research questions in Chapter 7. The wide arrows at the bottom of the diagram indicate the reflexivity of the entire research process in the final chapter, not only in examining the relevance of my findings for assessing the theoretical underpinnings for the research, but also in suggesting possibilities for further research. The numbers after each of the proposals in the right hand column identify the main chapter subsections where the proposals arise from the corresponding issues in the left hand column.

Fig B illustrates the dynamics of the reflexivity of the research account and comprises two stages. Chapters 1 to 4 reflect on the extant literature and MA course rational that leads me to identify the four component research questions two each at the ends of Chapters 3 and 4. Occupying the second stage are Chapters 5 and 6. In Chapter 5, I propose a research strategy for generating data from my dialogic tutoring of students. In Chapter 6, I present and examine the qualitative evidence that enables me to respond to these questions. Finally, in Chapter 7, I reflect on the insights and contributions I have gained from the research with particular attention to validity issues and the impact of the research findings with reference to the professional development of the students and myself as environmental educators and researchers.

Notes

- In cross-referencing the research account, I have used *Section* X to cross-reference a section falling within the same chapter, and *Chapter* X to refer to a section in another chapter.
- There are two purposes for the footnotes: firstly, they provide supplementary background information in support of arguments or concepts examined in the text; and, secondly, they refer to related chapters in the research account.
- Quotations from students' essays, emails and other student comments are written in italics.

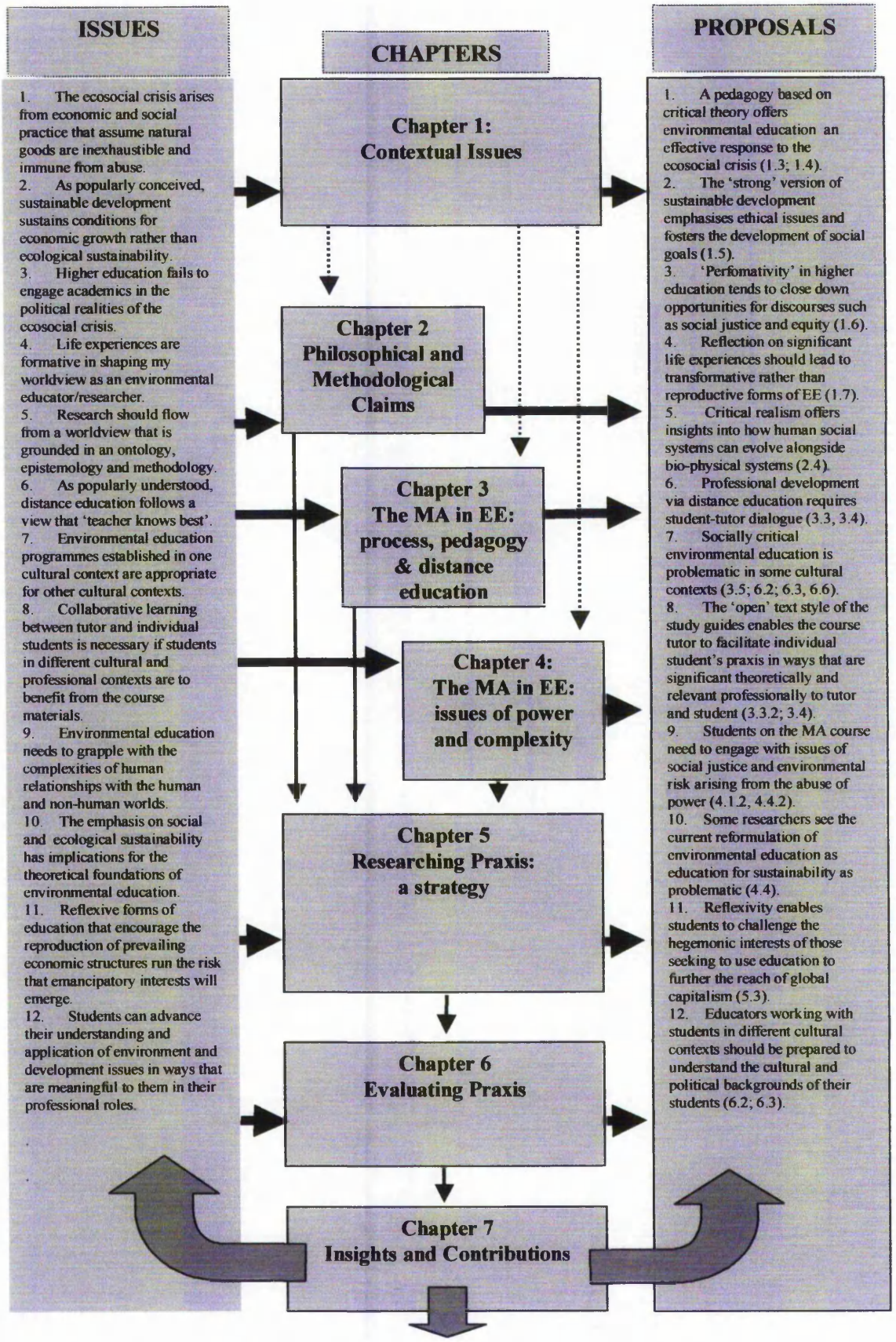


Fig A *Structure of the research account, and principal issues and proposals*

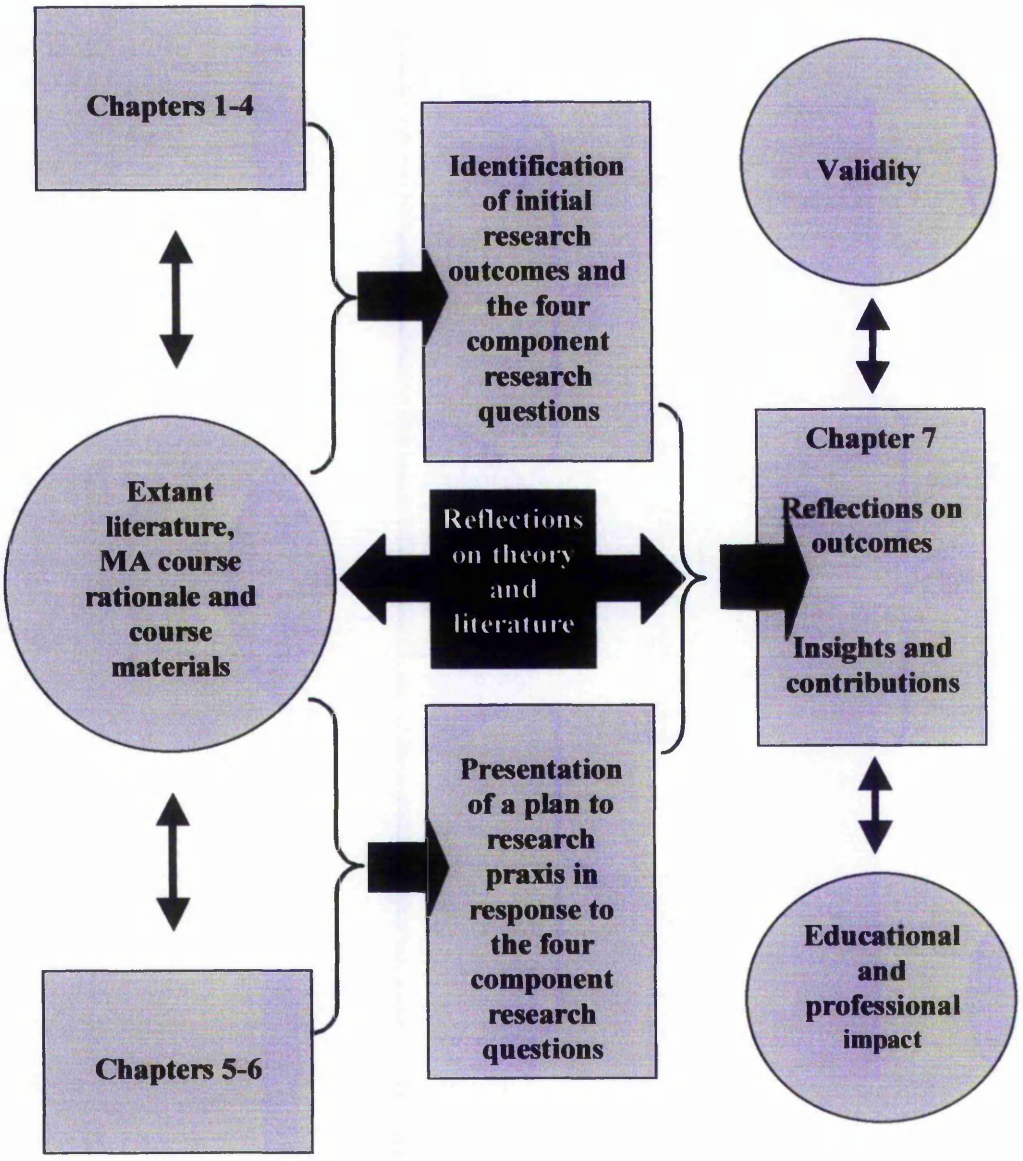
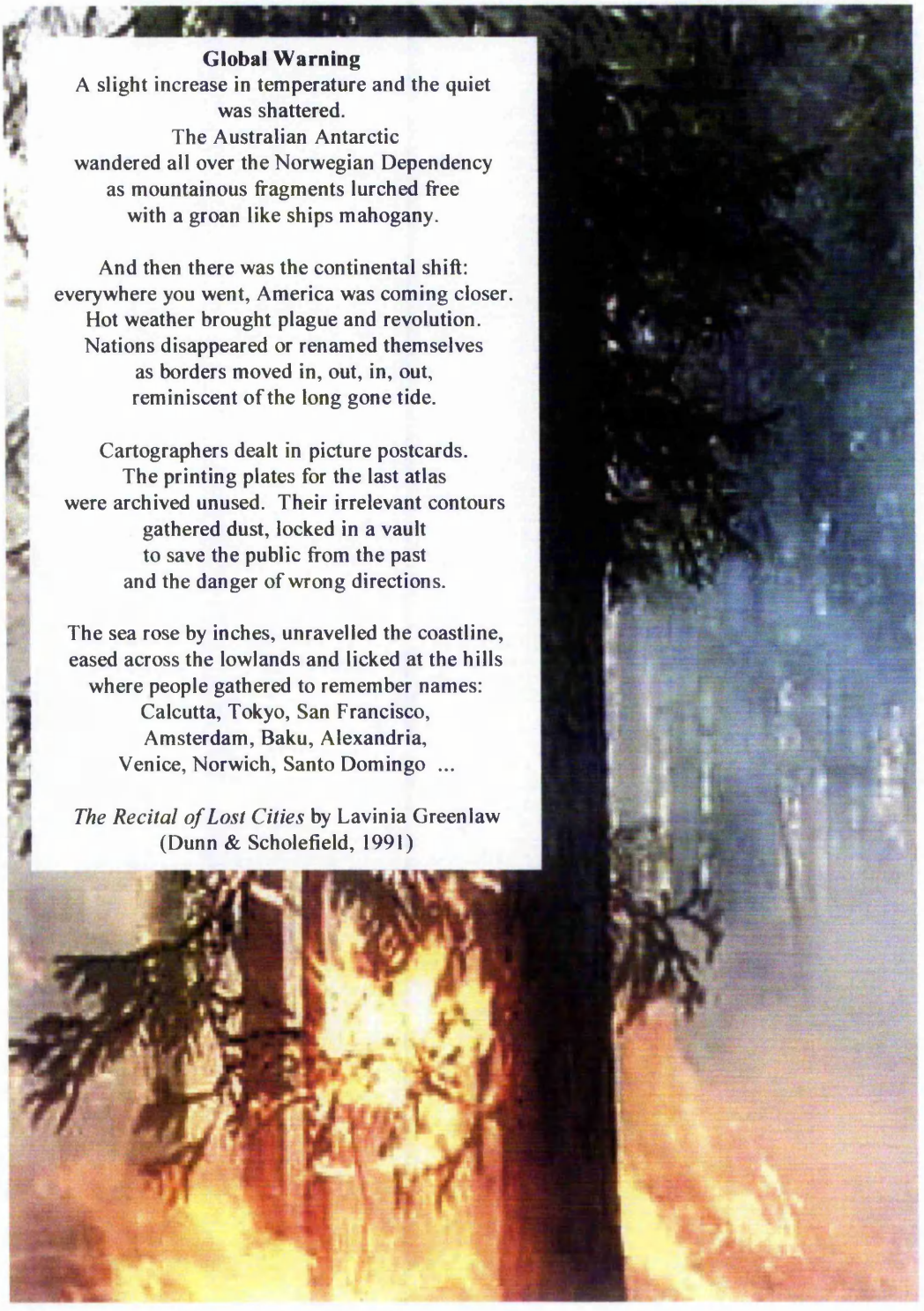


Fig B *Reflexive nature of the research design*



Global Warning

A slight increase in temperature and the quiet
was shattered.
The Australian Antarctic
wandered all over the Norwegian Dependency
as mountainous fragments lurched free
with a groan like ships mahogany.

And then there was the continental shift:
everywhere you went, America was coming closer.
Hot weather brought plague and revolution.
Nations disappeared or renamed themselves
as borders moved in, out, in, out,
reminiscent of the long gone tide.

Cartographers dealt in picture postcards.
The printing plates for the last atlas
were archived unused. Their irrelevant contours
gathered dust, locked in a vault
to save the public from the past
and the danger of wrong directions.

The sea rose by inches, unravelled the coastline,
eased across the lowlands and licked at the hills
where people gathered to remember names:
Calcutta, Tokyo, San Francisco,
Amsterdam, Baku, Alexandria,
Venice, Norwich, Santo Domingo ...

The Recital of Lost Cities by Lavinia Greenlaw
(Dunn & Scholefield, 1991)

CHAPTER 1

CONTEXTUAL INFLUENCES

Ah, what an age it is
When to speak of trees is almost a crime.
For it is a kind of silence about injustice.
(Bertolt Brecht, 1959)

1.1 Introduction

When (1938) Brecht wrote the above poem, people might have regarded spending time contemplating the fate of trees as an irrelevant indulgence. Yet, today's consumer craving and political posturing make it imperative, metaphorically speaking, that 'trees' should be at the heart of debates about environmental issues such as the fate of forests since these issues are inextricably bound up with the future of human society and social justice. I therefore preface my search for an appropriate philosophical and methodological foundation for environmental education with the conviction that it is not *whether* people should 'speak of trees' but *how* and *why* they should do so. This chapter presents for critical appraisal the foremost contextual influences that I believe both situate and energise that search.

I begin in Section 1.2 by giving my explanation for the ecosocial crisis with reference to reports from international conferences and government reports that have emerged since the early 1970s. I emphasise the general feeling among environmental activists that modernity is ending in crisis conditions, yet humanity seems powerless to respond appropriately to address the crisis. I trace the concerns about environmental degradation and the growing realisation of the link between environment and development, and issues of social justice and equity. I introduce the emerging significance of the concept of sustainable development. In Section 1.3, I argue that the environmental educator's primary responsibility is to evaluate whether current forms of environmental education are able to respond effectively to the depth and extent of the ecosocial crisis. In this section, I point to the need for fundamental educational changes that subvert tendencies towards compliance and the acquisition of skills and knowledge in order to develop a critical awareness about our environmental predicament through *praxis*. This introduction then provides the standpoint from which to examine, in Section 1.4, the events leading up to the creation of the *MA in Environmental Education* course and its theoretical underpinning by critical theory. This section emphasises my developing awareness and understanding of the scope for critical approaches to environmental education. Section 1.5 assesses the emerging meanings of environmental education, including its reformulation as 'education for sustainability' (EfS), and a consideration of the connections between EfS and critical approaches to learning. In referring the research account to my professional context in

my university in Section 1.6, I argue that environmental studies courses in higher education are not addressing the root causes of the ecosocial crisis. Instead, they perpetuate a view that environmental problems are a technical issue requiring better management within the prevailing economic order that sustains rather than critiques the environmentally damaging consequences of modernity. In Section 1.7, I consider the extent to which my biography influences my purposes as an environmental educator/researcher with reference to recent research into 'significant life experiences'. In Section 1.8, I summarise the main findings of this introductory chapter and emphasise the potential of critical theory in reformulating the theory-practice relationship through *praxis*. This 'ending' provides the beginning to Chapter 2 in which I develop my arguments for a critical realist philosophy of education based on the emancipatory social practices implicit in critical theory. In opening my research account in this chapter, I refer to subsequent chapters for a fuller examination of concepts and issues.

1.2 Concerning the ecosocial crisis

The lifestyles of both the rich and poor are ecologically and socially unsustainable. Not only does the economic performance of the affluent contribute to local and global unsustainability but also the behaviour of those in poverty caught up in an unsustainable global economy contributes to social and ecological degradation (Callicott, 1997; Adams, 1996; Romanyshyn, 1989). UNDP (1998) and Clarke (1999) see humanity's present course of development leading to the collapse of Earth's life support systems at some date in the not too distant future[7]. Three major global issues that exemplify these concerns are the importance of biodiversity for sustaining ecological and social systems on Earth, the vital role of the ozone layer in protecting living things from solar ultraviolet radiation, and the ecological and social consequences of global warming. These issues are unequal in their effect but have a common cause - ignorance of the effects of human interference in the Earth's life-support systems.

[7] The extent of environmental destruction and its connection with advancing world poverty has prompted Leakey & Lewin (1996) to argue that humans are conducting an uncontrolled experiment, unprecedented in scope and scale. It represents a significant modification of the natural processes that produced clean air and water and the complex and diverse ecosystems that made human evolution possible.

Indeed, Wilson (2000: 30) is unequivocal in believing that humans have become agents of change of global proportions. He reflects:

> Biologists generally agree that the rate of species extinction is now 100 to 1000 times as great as it was before the coming of humanity. Throughout most of geological time, individual species and their immediate descendants lived on average one million years. They disappeared naturally at the rate of about one species per million per year, and newly evolved species replaced them at the same rate, maintaining a rough equilibrium. No longer. Not only has the extinction rate soared but also the birth-rate of new species has declined as the natural environment is destroyed. ... The principal cause of both extinction and the slowing evolution is the degrading and destruction of habitats by human action.

Such compelling imagery suggests an historical 'moment' for humanity marked by crisis. It is a moment when technological desires are associated not only with social progress but also with the pointless destruction of the natural resources that sustain life on Earth. It is a moment when economics increasingly integrates global affairs and where there is a redefinition of the relations between those who control global markets and those on the margins. It is a moment when the forces of oppression and anarchy appear increasingly to share affinity with both the left and right of the political spectrum. It is a moment that has been described as 'late modernity', 'high modernity', and 'reflexive modernity' and, perhaps more frequently, as *post*modernity for it is a time defined precisely by those aspects of social existence that are no longer the same as before. It is a moment that Sachs (1999: 23) notes is the unavoidable consequence of 500 years of European colonisation in the wake of Columbus' discovery of 'new worlds'. It is a moment when the preoccupation of humanity with greedy trade with nature is as Wordsworth (1807) saw it nearly two centuries ago:

> The world is too much with us: late and soon,
> Getting and spending, we lay waste our powers;
> Little we see in Nature that is ours;
> We have given our hearts away.

The fundamental problem of how to respond to the ecosocial crisis will not go away - indeed, it grows daily - yet, politically and socially acceptable ways of conceptualising this crisis and responding to it are proving to be largely innocent of the truth. There has been no lack of discussion about the issues facing humanity and the biophysical world. Since the 1980s, there

has been an intensifying debate about whether natural resources are able to sustain Western lifestyles and whether humans are irreversibly damaging the Earth's life-support systems. The debate shows few signs of abating. It embraces environmentally-related ethical, political, ecological, sociological, economic, scientific and spiritual interests and, in recent years, questions have emerged concerning the forms of knowledge that are best suited for understanding and taking action to reverse environmental decline. For example, the publication of Global Environment Outlook 2000 (GEO-2000) by the United Nations Environment Programme (Clarke, 1999) calls for:

> [The] integration of environmental thinking into the mainstream of decision-making relating to agriculture, trade, investment, research and development, infrastructure and finance [is] now the best chance for effective action.

Such an integrative approach to finding solutions to the ecosocial crisis has become necessary because of a growing awareness of the complexity of environmental issues. No longer is environmental damage of interest only to ecologists worrying about habitat loss since the ecosocial crisis now embraces interlacing concerns about population and human resources, species and ecosystems, energy and resources, wastes, urbanisation, social justice and peace and security.

Some observers (e.g. Loh, *et al*, 1998) make a strong link between increasing environmental degradation and associated human misery arising from a doubling of the world's population to 6 billion over the past 30 years coupled with the globalisation of world economies which over-exploits natural resources. UNDP (1998) state that more than a billion people, approximately 16% of the world human population, lack the opportunity to utilise natural resources in ways that allow them to meet their most basic needs, whilst "other consumers are consuming in ways that cannot be long sustained ecologically or socially and that are quite often inimical to our own well-being". Pollution of air and water, accumulation of wastes, destruction of forests, erosion of soils, depletion of fisheries, and damage to the stratospheric ozone layer threaten the survival of humans and other uncountable and often unknown living species.

Whilst public anxiety about environmental destruction has a long history in Western societies (Simmons, 1993; Callicott, 1997), it is usual to think of global environmental consciousness as originating from Rachel Carson's *Silent Spring* (Carson, 1991). Her book warned of a gathering ecosocial crisis caused by the effects of human progress on the natural environment. Other writers took up Carson's warnings[8]. Among them were Hardin's (1968) *The Tragedy of the Commons*, Ehrlich's (1969) *The Population Explosion*, Commoner's (1972) *The Closing Circle,* all expressing concerns that were to be addressed by one of the first international environment conferences, the 1972 United Nations Conference on the *Human Environment* (Stockholm). These writings and their international audiences began to make demands for a more critical analysis of the root causes of the ecosocial crisis. Emphasising population growth and high per capita consumption of resources, Meadows *et al* (1972) argued, "it is possible to alter these growth trends and to establish a condition of ecological and economic stability that is sustainable into the future". However, Pepper (1999: 2) sees a shift in this emphasis claiming that, since the "1970s, notions of environmental limits to economic growth [have changed to] an environmentalism that incorporates growth and capital accumulation".

Several international reports and conferences have drawn attention to the need for societies to make substantial changes in their economies and lifestyles in order to avert the impending global ecological and social disasters[9]. Among these are the *Blueprint for Survival* (Goldsmith, *et al*, 1972), *The World Conservation Strategy* (IUCN, 1980), *Our Common Future* (WCED, 1987), and the *United Nations Conference on Environment and Development* (UNCED, 1992). The combined weight of IUCN, WWF, UNEP, FAO and UNESCO backed the *Strategy* that presented a single integrated approach to global problems including the need for resource conservation through sustainable development and the idea that conservation and

[8] Some environmentalists claim that the deepening of the ecosocial crisis is caused by the (mis)application of science. Nevertheless, they often uncritically appropriate scientific findings, such as evidence for global warming, to support their arguments that there is a 'crisis'.

[9] Such disasters do not always follow from human interference with ecological processes, as the February/March 2000 flooding in Mozambique, and the late Autumn 2000 floods in England, show. The frequency of these so-called 'natural' disasters is likely to increase following human-induced changes such as global warming, especially if China, India and other developing countries attempt to expand their fossil-fuel power generation facilities and increase their industrial output. Bangladesh will be one of the more populated nations to be 'threatened' by human-induced rise in sea level.

development are interlocking issues. The *Strategy*'s focus on maintaining essential environmental life-support systems, the preservation of genetic diversity and the sustaining of species and ecosystems gave it a distinctly ecological flavour. Yet, it claimed the need to pursue the conservation of nature within the process of development[10] that catered for human needs. Moreover, the *Strategy* argued that one should not consider conservation or development without reference to equity and social justice, but it neglected the underlying problem of resource use and allocation that is the distribution of power that dominates politics and land-use. Importantly, it also failed to recognise that poverty and environmental degradation are both consequences of existing forms of development and underdevelopment. Huckle (1995) contends that this failure springs from an inadequate grasp of the link between political economy and the environment.

When The World Commission on Environment and Development published *Our Common Future* (*The Brundtland Report*) in 1987, it represented an influential step towards recognising this link. This book included the classic definition of sustainable development: "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987: 8)[11]. This definition carries with it two key ideas: recognition of the needs of the world's poor, to which priority should be given, and the idea of limitations imposed by the state of technology and social organisation in the environment's ability to meet present and future needs. *The Brundtland Report* called upon nations of the world to adopt sustainable development as the goal and test of national policy and international co-operation. Then, in June 1992, at the UN conference on Environment and Development (the Earth Summit) in Rio, over 150 nations endorsed a 500-page programme of action called

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[10] Escobar (1995: 4) sees development (Chapter 4.2) as the spread of Western capitalism to the rest of the world by industrialised nations, especially since the Second World War, in order

> to bring about the conditions necessary to replicating the world over the features that characterised the advanced societies of the time - high levels of industrialisation and urbanisation, technicalisation of agriculture, rapid growth of material production and living standards, and the widespread adoption of modern education and cultural values.

[11] Since the Brundtland Report first commended *sustainable development* as a way humanity might stave off impending global ecological and social disaster, an outpouring of literature has attempted to clarify its meaning (see, for example, Plant, 1995b; Baker, *et al* 1997; Bell & Morse, 1999). Importantly, the term has influenced the conceptualisation of *education for sustainability* (Huckle & Sterling, 1996) and *education for sustainable development* (ESDebate, 1999).

Agenda 21 which sets out how both developed and developing countries could integrate environmental concerns into decisions about economic development (UNCED, 1992). *Agenda 21* does not represent any binding commitment by governments, but constitutes a blueprint for sustainable development and argues that humanity requires humility to reduce its use of energy and raw materials and production of pollution and wastes. Fragile ecosystems need protection, wealth needs to be shared more fairly between the developed and developing countries, and between different social groups within each country, with special emphasis on the needs and rights of the poor and disadvantaged.

Yet, regardless of talk about social justice and a more equitable distribution of resources, the gulf between developed and under-developed communities worldwide continues to widen along with a decline in these communities' access to ecological resources (Sachs, 1999). If by 'sustainable development' is meant the greening of capitalism[12], this will not sustain these resources nor will it reduce inequalities or promote democracy and cultural diversity (Huckle, 1999a; Chapter 4.2). For example, *The World Conservation Strategy* (IUCN, 1980) argued that the acceleration of economic growth in poorer countries requires a process of development that caters for human needs. This is an anthropocentric viewpoint that advocates better management of the environment for human use rather than a fundamental change of attitude and thinking – a mode of thinking commonly called 'ecological modernisation'[13]. It is apparent, then, that although international initiatives towards sustainable development have brought centre-stage issues of crucial importance to life on Earth they have emanated from within the dominant development paradigm of the developed world. It is a paradigm that needs to be deconstructed and decolonised if it is to have meaning and relevance to poor and marginalised people everywhere, and it needs to be part of the focus of a critical theory of environmental education (Gough, 1998).

[12] This is referred to as 'weak' sustainability (Section 1.5 and Chapter 4.3).

[13] *Ecological modernisation* is an inexorable process of social transformation embracing modernity, rationalisation and internationalism, and flows from continuing global capital 'marketisation' under capitalism (Pepper, 1999; Chapters 4.3 and 4.4).

Although there is widespread recognition that environmental policy at all levels of society should aim for sustainable resource use and the management of 'planet Earth', there seems to be little sense of political urgency to engage with intellectually challenging social and ecological issues[14]. For example, warnings about impending ecological catastrophe provoke a robust response from those arguing that indefinite economic growth is possible, and "they do so mainly on the basis of neoliberal economic theory [that insists] market principles will ensure that there are no limits to growth" (Giddens, 1998: 56). Like any other goods, the argument goes, if a particular natural resource becomes scarce, its price will rise and consumption will fall. Similarly, as far as pollution such as global warming is concerned, the neoliberal response is that there is no strong evidence that it is happening. If it is happening, nature, has the necessary restorative properties to correct human impact, or that it is the 'way of nature' to generate new species to replace those that have become extinct (*ibid*: 57-58). The purpose of a critical theory of environmental education is to challenge these assumptions of ecological modernisation that tend to deflect attention away from the need to reconsider human relationship to the idea of human progress, and the too-easy acceptance of human-induced environmental risk as a normal aspect of out lives (Chapter 4.4.2).

It seems to me that debates about future prospects for sustaining livelihoods often ignore how ecological limits determine the prospects for long-term ecological and social sustainability (Plant, 1995a). The idea of 'ecological limits' to human progress was emphasised by Meadows *et al* (1972) who concluded that current human population growth and high per capita consumption of resources are unsustainable from an ecological standpoint, natural resources ultimately failing to meet demands. Parker (1993), in examining this important principle, maintains that *absolute* or *infinite* sustainability is impossible in any closed system since any production process renders some material and energy unusable, a principle posited by the Second Law of Thermodynamics. This is the entropy law that states there is a continuous transformation of available energy in any closed system into unavailable forms, the *entropy* of the system irreversibly increasing. The obvious corollary of this is that any economy cannot last indefinitely since it is subject to resource depletion and pollution through its production

[14] Local Agenda 21 processes operating at individual and community level offers opportunities for

processes and must therefore eventually deplete its natural resource base. In advocating consumer restraint, the precautionary principle, and equity, supporters of strong sustainability are acknowledging the constraints on growth imposed by the entropy law (Section 1.5).

Few economists seem to acknowledge the idea of ecological limits set by the entropy law. For example, Jay (2000: 18) believes that economic growth has transformed the living standards of the majority of the world's population since the 18th century, and argues that, by condemning economic progress, the protesters in Seattle and Prague who were opposed to economic globalisation are hijacking our future. However, he does agree that the "route to economic plenty" (*ibid*) has to take account of environmental degradation, ever-increasing inequality and the "sinister manipulations of multinational companies" (*ibid*). Nevertheless, in the same paragraph, he dismisses these arguments against economic growth as "exceedingly weak grounds for condemning most of the world to perpetual poverty by abandoning the only route out of it" (*ibid*). Jay's position on the inevitability of economic globalisation suggests that humanity is stuck in the 'rut of production' that uncritically accepts never-ending growth fuelled by consumerism as the *only* model for the future regardless of its social and environmental consequences. The notion that the fate of impoverished nations can be left in the safe hands of the global market place is the argument of those adopting the position of 'weak' sustainability, underpinned by the idea that instrumental reason and technocracy will continue to bring about equitable social progress. The emancipatory goals of critical theory challenge such claims. For example, Habermas argues that a resumption of human social progress can only follow when people succeed in establishing radical forms of democracy governed by communicative rationality. This would allow the emergence of the strong version of sustainable development that nourishes concern about matters of resource depletion and social justice and the interests of present and future generations, as well as of the rest of the biophysical world. Though not arguing explicitly from the perspective of critical theory, Giddens (1998: 64) has examined the shortcomings of classical social democracy and neoliberalism in providing an improved relationship between humans and non-human nature. He argues for a 'third way' politics to "help citizens pilot their way through the major revolutions of our times:

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people to adopt more sustainable lifestyles (Peverill, 1999).

globalisation, transformations in personal life and our relationship to nature" (*ibid*). Giddens claims that third way politics is a form of social democracy that embraces globalisation but preserves a core concern for social justice, and it looks for a new relationship between the individual and the community but requires a redefinition of rights and obligations. Thus, third way politics is not a compromise but a pragmatic response to the political issues facing society today – it is simply a modernised democracy, sustaining socialist values and applying them to a globalised world. While submitting to the idea of modernisation, third way politics is conscious of the problems and limitations of the modernising process particularly the "intrinsically unpredictable energies of scientific and technological innovation" (*ibid*: 68). However, while agreeing with Giddens' view that science and technology should not be left outside the scope of democracy, I believe that the democratisation agenda Giddens proposes is insufficiently critical and emancipatory in encouraging people to examine fundamental concerns about the way productive technologies deplete the natural resource base that enable democracies to survive. Thus, I believe third way politics offers little guidance for examining how social relations can mediate between humans and the rest of nature[15].

1.3 Concerning the educational response to the ecosocial crisis

Given the widespread pessimism about sustaining the future for life on Earth, *how* is it possible for educators to face up to the prospects for a renewed human relationship with the non-human world and to expose the 'truth' behind the ecosocial crisis? Liberal educational policies have invariably linked education with the call for people with technical knowledge to consolidate advances in technology, and to bring these advances into everyday lives in the interests of economic growth (Apple, 1979: 18). In this way, education serves more as a means of social control by policy-makers concerned with cultural and economic reproduction so that people can fit into a hierarchical society (Pepper, 1987: 65). This leads to over-

[15] Strictly speaking, there is a no such thing as 'nature', only 'natures', each 'nature' deriving from the various contestations over what is deemed to be transformations of the natural (MacNaghten & Urry, 1998: 22). For example, Soper (1995) provides a useful typography of the different senses in which 'nature' is used. Nature as a *metaphysical* concept relating to the non-human; nature as a *realist* concept referring to the causal powers and processes of the physical word (Chapter 2.4); and nature as a *lay* concept referring to a pristine environment uninfluenced and untainted by human interference (Chapter 4.6). There is also 'nature' as self-regulating organism (Lovelock, 1991).

prescriptive curricula at all levels of formal education which often denies students the opportunities for making sense of, and responding actively to, the great challenges facing humanity. In this way, education remains blind to a more serious and searching inquiry into why and how social structures sustain a deepening ecological crisis. Educational policies aimed at resolving social dilemmas such as the ecosocial crisis, and that arise out of the malfunctioning of the economic, social and political institutions of the society, are constrained by the prevailing momentum of the educational process.

For example, the National Curriculum for England, *Science*, adopts an uncritical stance towards the way developments in science and technology relate to the environment, and to personal health and ethical issues (DfEE/QCA, 2000). This reflects an assumption in educational policy that learning comprises little more than the acquisition of knowledge and skills devoid of cultural content, regardless of the recent reference to 'sustainable development' in the National Curriculum for Geography and Science. However, this is not to deny that curriculum subjects have an inherent potential for critical and emancipatory teaching. If they do, this potential remains suppressed by overriding interests that prioritise the acquisition of skills and knowledge.

Elliott (1999: 335) believes that educational systems remain "unreconstructed"[16]. In referring to the National Curriculum for England, Elliott (*ibid*) contends that this is because of the way government uses 'school improvement' to overcome their feelings of powerlessness in the face of worldwide economic forces and global environmental change. Not just schools, but all sectors of education have experienced crisis and transformation for more than a decade as education has entered an era of economic rationalisation (Smyth, 1989; Smith & Webster, 1997). Government's belief that raising educational standards will help achieve limitless economic growth ignores evidence that economic growth is often accompanied by

[16] One aspect of this is that humans communicate increasingly without context. For example, Sandloss (1998: 5) argues that the dominant methods of information transmission and storage in contemporary culture are the sound byte, the video clip, the database, and other technologically mediated forms of communication. This separation of knowledge from context applies to other aspects of modern life such as the assumption that food and other commodities originate in a supermarket; that chicken, for

unemployment, increasing social inequalities and a widening economic gap between the rich and the poor (Rist, 1997: 218-219). As I have noted above, capital accumulation tends to sustain and even intensify these inequalities rather than to resolve them. In addition, the spread of environmental risks through technologies of production increasingly transforms ecological systems in ways unknown in human history (Beck, 1992a; Plant, 1998a; Huckle, 1996a) and threaten government's ability to "deliver heaven on Earth, for there may be no 'Earth' to sustain the societies it is to be delivered to" (Elliott, 1999: 235).

Along with other 'critical' environmental educators, I want to develop active and capable learners informed about the social and ecological consequences of their actions and of the communities in which they live. As regards the MA students who articulate their thoughts and actions in this research account, my aim is to develop their professional capacities to engage in curriculum reform so that they become empowered[17] to confront the complex social causes of the ecosocial crisis. By applying their learning to ecological and social matters in their differing professional and cultural contexts, my aim is to enable them to face up to fundamental ontological questions about what they understand by reality, and epistemological questions about how to know this reality. In the rapidly changing social conditions in which these students now live, what is called for is a critical awareness of their social and professional circumstances and a desire to empower other people to consider the contradictions that pervade modern society. For example, contradictions arise when examining the relationship between economic development and increasing poverty, (Escobar, 1995; Crush, 1995), and between globalisation and social injustice (Elliott, 1998; Waters, 1995; Nederveen Pieterse, 2000). What this means for a renewed vision of the educational process is a radical change in the prevailing educational culture so that everyone has the opportunity to participate more fully in the learning process. It is not enough to assume that environmental education should simply mimic currently popular (or politically acceptable) conceptions of environmental issues that often "present set views about the 'right' propositional knowledge, 'appropriate' learning

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example, in its various manufactured forms as food, is not associated with the creature existing in battery farms.

[17] Chapters 2.5.2 and 3.5 discuss the meaning and significance of *empowerment* as an essential individual and community goal of a critical theory of environmental education.

experiences, 'foolproof' curriculum prescriptions and expert disciplinary role of teachers" (Payne, 1999: 7). A key question is how to motivate my students to consider and create alternatives to neoliberalism's competitive individualism and technocratic rationality with the aim of helping them change the way society relates to the human social and non-human worlds[18].

Not least, 'critical awareness' requires learners participating in this debate to engage in teaching and learning processes that are aimed at the continuous expansion of that form of reason that Aristotle describes as *phronesis* (or practical wisdom) which brings into play knowledge that is personal and experiential. Drawing on these roots, the great challenge for Habermas (1972, 1974, 1979) was to develop a critical theory of the social sciences that enabled people through forms of reflective self-knowledge to improve the rationality of their own practical judgements and actions. To enable him to achieve this, Habermas returned to the classical idea of 'practical philosophy' and, in particular, to the Aristotelian idea of *praxis* that involves individuals consciously seeking autonomy as an end, and as a means to this end, and where others are seen as autonomous beings (Castoriadis, 1987: 107-8). *Praxis* acknowledges the dialectical unity between theory and practice, between reflection and action in a movement towards self-fulfilment (Kincheloe, 1991: 20; Lather, 1986). Habermas regarded education, ethics and politics not as theoretical sciences that produce rigorous objective knowledge (what would be called *techne*) but as 'practical sciences' whose 'theory' comprised the reflectively held ideas and beliefs which informed practice and which were constantly revised in the light of practical consequences. Thus, 'theory' and 'practice' are indivisible elements of the single process of *praxis* a process whereby practitioners simultaneously reflect on their practice and the theory that informed it. Such a politics of *praxis* recognises that knowledge is *fractional* in that there can never be an exhaustive knowledge of human history, and *provisional* since *praxis* leads to the emergence of new knowledge. *Praxis* is a central concept in Marx's philosophy of dialectical materialism, and the dialectical relation between humans and non-human nature is a central concern of a critical

[18] The free market philosophies connected with Thatcherism and Reaganism are usually referred to as *neoliberalism* (Giddens, 1998: 5).

theory of education underpinning the rationale of the *MA in Environmental Education* course (Chapter 2.5).

The foregoing concerns reflect an increasing recognition that issues of social justice, political ecology, poverty, and diverse worldviews should be more usually incorporated in environmental education programmes which tend to conceal underlying political, social and ecological realities (Huckle, 1999a)[19]. A key focus for *praxis*, then, is the integration of social analysis (i.e. how economic and other practices lead to social injustice and ecological degradation) and political practice (i.e. what form of politics offers ways of bringing about a more socially just and ecologically sustainable society).

1.4 Originating the MA course

The foregoing socio-ecological issues were foremost in our minds when a colleague and I wrote and validated the *MA in Environmental Education* course in 1994 (Plant & Firth, 1994). The course followed our collaboration in a research project concerned with encouraging students to learn through controversial issues, and that responded to the need for restructuring conservative forms of education that had seized hold during the 1980s. The British Agrochemicals Association funded this project and led to the publication of a resource file for teacher educators (Firth & Plant, 1995). This file addressed the tensions between traditional, liberal, progressive and socially critical forms of education, and how teacher education students could engage in critical thinking and action based on an examination of the socio-political basis of environmental issues such as pesticide contamination of human social and non-human environments.

Firth and I had become aware that some researchers (Carr & Kemmis, 1983; Huckle, 1983, 1993; Lather 1991; Fien, 1993a/b) were advocating radical and emancipatory approaches to environmental education in empowering students to take action to reduce the environmental and social impact of human behaviour. In incorporating similar emancipatory learning

processes in the MA course, we wanted students to question the destructive consequences of modernity. Our aim was to encourage student teachers to implement in their schools an approach to curriculum reform grounded in critical theory. This project confirmed our belief that the politicisation of environmental education should go beyond consciousness-raising in order for teachers and their pupils to become involved in "a search for democracy and social justice" (Malone, 1999).

These views were reinforced by our understanding that, during the 1992 Earth Summit (UNCED, 1992), Western capitalism was clearly reluctant to change the social practices that perpetuate environmental degradation and social injustice and these concerns became more apparent during the 1990s (Plant, 1998a: 38-39; Andrew & Robottom, 1998; Huckle, 1999a/b). Indeed, the issues are not going away, as was demonstrated by the reaction of developing countries and others to the World Trade Organisation's (WTO) major conference in Seattle in 1999 that sought to extend the scope of the global market economy. The conflicts generated by this conference, and at the subsequent meeting of the International Monetary Fund (IMF) in September 2000, exemplify concerns about the relationship between the global ecosocial crisis and the global economy (Huckle, 1999a; Elliott, 1998; Pepper, 1999; Giddens, 1998). Whilst optimists at these meetings advocate economic competition in the new global order, pessimists claim that global economic trends that foster greater freedom of trade and investment exacerbate uneven social development, ethnic tensions, over-exploitation of natural resources, spreading disease, escalating crime and overpopulation (Kennedy, 1993).

In siding with the pessimists, and in extending the arguments in Section 1.2 above, I ask whether education in its present form is able to challenge the relentless way capitalist social systems attack and subdue nature and labour, simultaneously? Capitalism represents the dominant world system and, customarily, sees the education system as a means of increasing consumption so that capitalist processes can be sustained. The effect is to deny students alternative understandings and particular perspectives and interpretations that would foster

[19] *Political ecology* is research analysing the complexity of social, and environmental change as something produced by intersecting and conflicting economic, social, and ecological processes with (Chapter 4.6.2)

debate about the social and ecological impact of human development processes. When they lack engagement with social and ecological problems, students are vulnerable to being manipulated into believing that the way the capitalist world is currently ordered is the only possible model for humans to live now and in the future. Mainstream state education serves these economic imperatives when it supports linear, accumulative processes taking place in fixed structures that increase knowledge without changing the structures themselves. Cost-benefit analysis, behavioural and developmental psychology, and statistical validity and reliability riddle the prevailing educational discourse. Few philosophical concepts enter into mainstream debate about education and, if they do, they are set aside to avoid anything that hints at intellectualism. The consequence is, as Baudrillard (1992: 22), the enigmatic analyst of the postmodern social trend, notes, "all that we can do is replay the scenarios"; that is, present-day society is unable to escape from living in the wake of various modern social movements, including the forces of production.

The rationale underpinning the *MA in Environmental Education* course confronts this view about the apparent inevitability of economic progress. It encourages environmental educators to go beyond replaying the scenarios by engaging them in transformative education that develops new ways of comprehending the human social world and hence establishing a new identity for themselves as educators. It is in the nature of a transformative education that it calls attention to the need for students to critique political and economic systems that in practice degrade the natural environment and fragments and fractures human relationships to the detriment, misery and suffering of millions of people. This practice of providing personal empowerment to engage with the political aspects of their learning and the curriculum for which they are responsible is what I believe Aronowitz & Giroux (1985) have in mind when they speak of the 'transformative intellectual'.

> [Transformative intellectuals] define their political terrain by offering to students forms of alternative discourse and critical social practices whose interests are often at odds with the overall hegemonic role of the school and the society it supports.

Moreover, it requires critical reflection about whether forms of education to which they subject *their* students are not related, to some extent, to those that cloud and threaten their

individual and common futures (Peukert, 1992: 160). A curriculum that involves students in this kind of critique is radical and alternative to the models of education that pertain in almost every country of the world.

What I am advocating and, what this dissertation is essentially to do with, is a form of education that leads my students to deeper understanding and constructive action with regard to social and ecological dilemmas facing humanity. This kind of 'socially critical' environmental education is founded not on instrumental reason that aims at "objectification and domination but at the emancipation of the individual in an intersubjectivity of unconstrained agreement" (*ibid*: 163). In Chapter 2, I develop the ideas of consensus building and emancipatory education with reference to Habermas' claim (1972: 314) that it is language that raises humans above nature. This is not to say, as Rorty (1982) claims, "that there is no reality prior to language" for this is altogether too certain, and suggests the possibility for child-abuse; for example, that infants could be operated on without anaesthetics in the long-held belief that babies could feel no pain.

1.5 Emerging conceptions of education for sustainability

The *MA in Environmental Education* course was established at a time when there was renewed interest in environmental education arising, in part, from issues raised by the Brundtland Report (WCED, 1987), and the events following the Earth Summit in Rio (UNCED, 1992)[20]. Although these reports began to crystallise some of the key elements of 'education for sustainability', the roots of environmental education go back to the early 70s. At that time, the International Union for the Conservation of Nature and Natural Resources (IUCN, 1970) first acknowledged that environmental education was:

> A process of recognising values and clarifying concepts in order to develop skills and attitudes necessary to understand and appreciate the interrelatedness among man, his [sic] culture and his biophysical surroundings. Environmental education also entails practice in decision-making and self-formulation of a code of behaviour about issues concerning environmental quality.

[20] Notably, UNCED made three proposals: to improve basic education; to reorient existing education to address sustainable development; and to develop public understanding awareness and retraining (UNCED, 1992).

Several further conferences elaborated these principles, which advocated little more than a change in people's attitudes. Notable among these were the UN Conference on the Human Environment held in Stockholm in 1972, the International Workshop on Environmental Education in 1975 (*The Belgrade Charter: Global Framework for Environmental Education*), and the Tbilisi Intergovernmental Conference on Environmental Education in 1977 (UNESCO, 1977; Tbilisi Declaration, 1978; UNESCO, 1987). Furthermore, European initiatives, such as those of the Council of Europe (European Union, 1988), called on all countries to "reshape education so as to promote attitudes and behaviour conducive to the culture of sustainability". Subsequently, UNCED's Non-Government Organisation's Forum Treaty on Environmental Education for Sustainable Societies incorporated these features in a more critical consideration of human relationships to the human social and non-human worlds. It proposed that environmental education:

- Should be grounded in critical and innovative thinking, *promoting the transformation and construction of society*;
- Is both *individual and collective* aiming to develop *local and global citizenship*;
- Is not neutral but is *value-based.* It is an *act for social transformation*;
- Must *acknowledge, use and value the historical perspective of native peoples* as a way to change ethnocentric approaches and to recover and *promote cultural, linguistic and ecological diversity*;
- Should *empower all peoples* and *promote* opportunities for *grassroots democratic change and participation*;
- Must help *develop an ethical awareness* of all forms of life with which humans share this planet.

(Adapted from NGO's International Forum, 1992: 1-2; my italics)

The words in italics have come to be incorporated in what some environmental educators see is a reformulation of environmental education as 'education for sustainable living' (Fien, 1997), 'education for sustainability' (Huckle and Sterling, 1996) and, more recently, 'education for sustainable development' (WWF, 1999; ESDebate, 1999; Bonnett, 1999; Elliott, 1999). In

Fien's (1997: 22) analysis, these reformulations "align environmental education as an integral partner with development education, citizenship education, human rights education and peace education". They imply a lowering of the status of 'nature study' and the direct experience of nature that had contributed to traditional approaches to environmental education in favour of a more politically sensitised approach that embraces development practice, human rights, democracy and social justice issues (Williams, 1996a; Huckle & Sterling, 1996; Huckle, 1997; DETR, 1998). In particular, the case for social justice as a dimension of environmental education had been put forward earlier by the *Alternative Treaties* from the International NGO Forum, Rio de Janeiro, in June 1992:

> We consider that environmental education for equitable sustainability is a continuous learning process based on respect for life. Such education affirms values and actions that contribute to human and social transformation and ecological preservation. It fosters ecologically sound and equitable societies that live together in interdependence and diversity. This requires individual and collective responsibility at local, national and planetary levels.

Although they share similar attributes, the terms 'education for sustainability' (EfS) and 'education for sustainable development' (ESD) have different meanings and the various interpretations lead to confusing messages. There is a general understanding that EfS incorporates ideas of 'social transformation' and 'equitable societies', and emphasises matters such as democratic change and participation (Huckle & Sterling, 1996). From this perspective, EfS incorporates a critical theory of environmental education that advocates individual and community-inspired learning through shared reflection and action on forms of political economy directed towards enabling humans to live ecologically and socially sustainable lives (Huckle, 1997, 1999a; Firth, 1995, 1996; Plant; 1998a). Importantly, EfS recognises that the worsening of the crisis of environment and development comes from a failure of disorganised forms of capitalism to alleviate the poverty of poorer people in both the so-called 'developed' and 'undeveloped' countries. The assumption is that wealth will 'trickle down' from the rich to the poor[21] (Chapter 4.3).

Nevertheless, despite some common understanding about the meaning of EfS, it continues to present environmental educators with a semantic problem that is proving difficult to resolve. The web-based forum, ESDebate (1999) was set up to encourage debate about this difficulty aimed at contributing to the on-going International Work Programme on Education, Public Awareness and Training for Sustainability launched by the UN Commission on Sustainable Development in 1996. UNESCO and IUCN supported the debate, the core contradiction underlying it being between the 'strong' and weak' forms of sustainable development. The 'strong' interpretation emphasises ethical considerations and fosters the achievement of social goals subject to the meeting of certain prior environmental conditions, such as the requirement for keeping *natural* capital intact over time. Thus, the claim of strong sustainable development is a concern for a wider set of human relations rather than simply 'greening' patterns of production, consumption and lifestyles. For example, there is an international aspect to strong sustainable development which encourages a search for non-Western approaches to development; it elevates equity, futurity[22], ecological imperatives and the precautionary principle[23] rather than narrow economic goals; and it attempts to re-embed society in community, region, and ecosystems (Pepper, 1999: 3). Clearly, the strong version of sustainable development underpins the meaning of EfS as I have outlined it above. In contrast, the 'weak' interpretation of sustainable development takes into account environmental considerations in policy-making, but it allows the trading of these considerations against other goals in order to produce a socially optimal or desirable result. The stripping of weak sustainable development of its fundamental socially critical edge means that it is unable to respond to issues such as social justice.

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[21] The most readily seen aspects of *disorganised capitalism* are the economic and social processes of globalisation (Chapter 4.4). This is a post-Fordist labour process which regulates people so that they fit into the changing conditions of capital accumulation.

[22] The *futurity problem* (Kavka, 1981) questions moral responsibility for future generations. Some writers discount the issues of the temporal and spatial distancing between present and future generations and hold the position that "there is the same obligation to future people as to the present" (Attfield, 1983), an idea which is often paraphrased as 'don't cheat on your kids'. I discuss the futurity problem in Plant (1995a).

[23] As with so many of the defining principles in the environmental field, the *precautionary principle* is variously understood. Essentially, it means a reversing of the burden of proof (O'Riordan & Jordan, (1994). That is, until and unless it can be determined that an action (for example the dumping of wastes at sea) does not cause environmental damage, then that action ought to be prevented or restricted (Elliott, 1998: 102).

Where EfS is included as part of formal education, it is generally the weak version of sustainable development that influences educational reform. Bonnett (1999) thinks this is predictable considering that the cultural environment that shaped the subject fields is linked to the subordination and exploitation of nature and are, therefore, inappropriate curriculum vehicles for learning about strong sustainability. One might ask, then, whether the current policy in the National Curriculum of England and Wales is the best way of indicating the significance of sustainable development (DfEE/QCA, 2000); and if it is, where does that leave the moral, social, economic, aesthetic and spiritual dimensions of education for sustainability that I have discussed above? Are we not expecting too much from these traditional subjects as appropriate vehicles for environmental education? On the other hand, since the idea of sustainable development *is* now represented in the formal curriculum, albeit in a 'weak' sense, there is scope for harnessing its latent critical and emancipatory elements in pursuit of EfS.

1.6 Rationalising processes in higher education

The *MA in Environmental Education* course is subject to some of the political and economic forces that now pervade higher education which have resulted in a tendency, as in other sectors of state education, for curricula to focus on the acquisition of knowledge and skills free from social critique. Researchers in academe tend to concentrate on effectiveness and efficiency rather than having a central concern for issues of social justice and democracy (Tierney, 1991: 4). Smyth (1989: 197) claims that this tendency is located in a wider legitimation crisis in capitalist societies. Firstly, he argues that there is a 'crisis of rationality' in which scientific approaches to solving social and economic problems take the form of artificial separations: of facts from values, means from educational ends, of administration from pedagogy. The result is that only technical/rational administrative solutions are available in response to complex social questions of equity, access and the distribution of society's resources. Indeed, in chairing validation meetings of 'environmental studies' courses in my university, I have become aware that the aim of these courses is to produce eco-managerialists with the expertise to cope with the ecosocial crisis based on sound scientific and technical grounds. Therefore, they seem to offer little space for any social objectives beyond instrumental and technical ones. Luke (1999: 103) argues that by reducing the planet to a network of natural resource systems,

environmental studies courses "reframe 'the environment' as a highly complex domain far beyond the full comprehension of ordinary citizens". Since the natural world sustains economic growth, eco-managerialists are the best people to manage it. As Lyotard (1984: 46) sees it, these experts:

> [M]ust abandon the idealist and humanist narratives of legitimation in order to justify the new goals: in the discourse of today's financial backers of research, the only credible goal is power. Scientists, technicians, and instruments are purchased not to find the truth, but to augment power.

Since it offers no alternative model for how humanity can cope with escalating environmental and social problems, environmental studies, as portrayed above, yields to a faith in 'ecological modernisation' (see Chapter 4.3). It merely pins its hope on applying more technology to repair the wrongs misplaced technology causes to human social and non-human nature, and it therefore represents the weak version of sustainable development.

Secondly, Smyth (1989: 198) sees a deepening 'crisis of legitimacy' as:

> [These] centrally driven technological solutions ... are justified, packaged and perpetrated ... by recourse to the rhetoric of their supposed efficiency and cost effectiveness. Of course, they are nothing of the kind.

Within my Faculty and across the University, as elsewhere in higher education, efficiency and cost-effectiveness have come to dominate academic life. The visibility of this rationale is most evident in the expectation that the University's graduates should serve the economic needs of society. When this does not happen, the University is criticised for not helping society to become more productive (Tierney, 1994: 14).

Thirdly, Smyth (1987: 198) sees the crises of legitimacy and efficacy interacting with one another to produce a 'crisis of motivation' that leads to a condition where:

> [F]eelings of increasing alienation and powerlessness accompany the situation in which we feel that control lies 'out there', 'with them', and not with us in here, in this institution. Not only does this produce a loss of meaning, identity and purpose, but more importantly it imposes forms of language and discourse that

> further reinforce and bolster the orientation of measurement, technocracy and managerialism.

In arguing that the 'instrumental rationality' of education, 'efficacy' and the 'crisis of legitimacy' now infusing capitalist social systems are responsible for the crisis in education, Smyth seems to be acknowledging critical theory's concern that education must provide the necessary space for addressing pressing social and ecological issues. Critical theory dismisses crude forms of economic determinism that continue to dog educational reform, yet firstly under Conservatism and then New Labour discussion about the social causes of environmental decline and social inequalities have been largely neglected. In this respect, higher education is serving a neoliberal globalising world that is seen as principally economic in its dynamics and that is visible principally in terms of the globalisation of financial markets dependent on the fusion of satellite and computer technologies (Giddens, 1998: 31).

Are universities losing sight of their responsibility for social amelioration and taking responsibility for others? My experiences over recent years suggest they may be neglecting this obligation, at least as regards my Faculty's interests. Between March 1997 and March 2000, I collaborated with Kenyatta University staff in Nairobi in a programme of academic exchanges aimed at developing Kenyatta University's capacity for research and teaching in the fields of gender, poverty alleviation and natural resource use (Otieno & Plant, 1999). However, I am disheartened by Faculty's indifference to this British Council-funded Academic Link Programme since it is undervalued as a worthwhile venture on ethical grounds, e.g. in embracing issues of social justice and its links with poverty in Kenyan society. Neither is its potential recognised as the basis for a renewal of teaching and research that might enrich and energise my colleagues' intellectual interests in the Faculty. The refusal to acknowledge the curriculum and research potential of this on-going project shows a tendency to bow to government-inspired demands for accountability and, accordingly, to perpetuate those ideological ideas and beliefs that seek to preserve the inequalities and injustices of the capitalist economic order.

A critical view of my Faculty might analyse its purpose and identity and attempt to tie its curriculum and research to issues of social justice and democracy that would be in sharp contrast to the prevailing rationalist perspective. Instead of aiming to increase organisational effectiveness or neutrally to describe the organisational world, a critical theory of education aspires to understand the oppressive aspects of society, showing how these are determined largely by underlying economic laws (Tierney, 1994: 41). This aspiration energises the rationale of the *MA in Environmental Education* course, and its underpinning critical theory aims to ensure that educators do not lose their critical sensibilities that Marcuse (1969: 25, cited in Smyth & Hattam, 2000: 163) claims should emerge "in the struggle against violence and exploitation where this struggle is waged for new ways and forms of life". The MA course represents such a 'site of resistance' since it is designed to generate a *praxis* opposed to educational trends that I believe tries to downgrade my teaching to that of a technician serving market needs.

1.7 Considering my past

In the introduction to this research account, I acknowledge the likely influence that my early rural life in Cambridgeshire has had on my subsequent interest in environmental education. That I can recognise the possibility of this correspondence assumes that what I believe and how I act today is consistent with the extended and varied influences that have shaped my interests and philosophical outlook on life. This includes those influences that may have determined the particular critical stance motivating my approach to environmental education that I have revealed in Sections 1.4 to 1.6 above. However, I want to problematise this assumption and argue that one's significant life experiences (SLEs) are not simply connected in this way. Along with Grumet (1981), I think there is a too simple logic in extracting particular categories of life experience such as 'outdoor activities', 'rural lifestyle', 'parental influence', 'childhood experience' and 'vacations' and presenting them as exerting a positive influence on one's present worldview. Moreover, current research in SLEs raises the question as to the meaning of the 'experience' that is at the root of one's worldview[24]. SLEs might be significant

[24] Two issues of *Environmental Education Research* examine the arguments about the implications of *significant life experiences* for shaping the responsibilities and values of environmental activists (e.g. Palmer, *et al*, 1998; Tanner, 1998).

for all sorts of reasons, including the possibility of exercising a negative influence on one's perception of a 'good' environment. Specifically, how, if at all, do SLEs translate into culturally sensitive and contextually specific curriculum and pedagogical practices (Payne, 1999: 366)? Two examples from my own life experiences will help illuminate the problems, if not to answer them. The first example concerns my years growing up in rural Cambridgeshire and the second my experience of teaching in post-colonial Africa during the 1960s.

Should I believe, then, that the environmentally damaging consequences of intensive inorganic farming methods in Cambridgeshire since the 1960s are 'significant' in shaping my evolving sensitivity to environmental perspectives? And that these recollections have had a formative influence on my current view that intensive agriculture is linked to habitat destruction and decreasing biodiversity in the farming landscape? Perhaps I should be more cautious about such logical connections since, on further consideration, I believe that my awareness of the environmental consequences of intensive agriculture has been a more recent conviction following my understanding that these practices can lead to, for example, a dramatic decline in the populations of farmland birds through destruction of habitat and food sources. This conclusion suggests that I am at fault in reconstructing my past in the light of my present hopes, fears and expectations for the future; and refutes the likelihood of a direct correlation between significant life experiences and my present-day worldview. Nevertheless, such recollections can be transformative[25] in realising how human intervention has altered external nature. Thus, I conclude that this research account is not intended to help me recover a past frame of mind through an active reflection on the issues and processes in connection with the MA course. Instead, it is to explore avenues for resolving the contradictions arising from the alienation of my inner nature, i.e. my potential as a human being, from external nature, i.e. the rest of the biophysical world.

The second example relates to my experience of teaching science in East African schools during the 1960s. At that time, I had responded to the call for educational 'expertise' from

[25] The term *transformative* (and *transformation*) applies to diverse contexts in education. The use of 'transformative' in this study refers to the identification of educational processes that work to reduce the environmentally destructive consequences of capitalism (Section 1.3, above, and Chapter 3.5).

teachers from former colonial powers to participate in Africa's transition to Western style democracy underpinned by economic development. I taught science but with little critical reflection about whether the Western syllabus I taught had any relevance to my students or about the global forces of change that had drawn me into this unfamiliar cultural context. As with my experience of intensive farming practices, I now realise that the Science A-Level Cambridge Examinations Board syllabus I taught to my African students was unsuited to their needs in a newly independent African country. Yet, they and I assumed implicitly that this Western model of education would enable them to go to university in the West and when they returned they would help speed the transition of their country to a 'developed' state of economic and social well being. Subsequent political and economic crises in these African countries suggest that this development model is flawed, an observation that I expand on in Chapter 4.2. I now view my teaching in Africa in the immediate post-colonial era as 'significant' only in hindsight since I cannot claim that it has been formative in the sense that there is a logical connection between that experience and my present interest in addressing environment and development issues through education. What I can say is that my recollections of this teaching experience ought to be considered in the light of the transformative properties in enabling me to make amends for the shortcomings of this experience by a reconstructive learning process that has recently involved, for example, my collaboration with Kenyatta University described in the previous section.

What, then, do I conclude from these examples? Firstly, for an environmental activist like me, I should avoid making generalisable propositions about predictable relationships between significant life experiences and one's current environmental preoccupations. Instead, I would be wiser to believe that these recollections should point to understanding how one's present circumstances influence understanding of the past and the promise for the future rather than drawing on these experiences to illuminate the present (Gough, 1999: 412). The difficulty of assuming, uncritically, that significant life experiences are responsible for one's current worldview is that these experiences might be prejudiced and irrational in their allegiances, particularly in the political realm where opinions may hold sway over rational argument. One of the aims of a critical theory of education is to make them less so by ridding our beliefs and attitudes from prejudice and error in order to see our world in a different light. Secondly, it is

necessary to identify the ontological contexts of one's SLEs for it is our construction of reality, our ontology, that enable us to draw inferences from experience to illuminate our present worldview. All teaching and research should emphasise the importance of defining one's worldview in terms of an ontological perspective, and how to construct knowledge of that worldview, i.e. its epistemology. I examine these imperatives for environmental education research in Chapter 2.

1.8 Reflections

This chapter has oriented my research account with reference to the ecosocial crisis, my professional context, a critical theory of education, the *MA in Environmental Education* course, and my significant life experiences. I have expressed my belief that education should go beyond linear and accumulative learning that simply enables students to amass knowledge and, instead, to give them the opportunity to influence the social structures responsible for bringing about the ecosocial crisis. It is when learning is uncritical and traditional that it fails to acknowledge that what characterises humans is their potential to overcome the contradictory situations in which they now find themselves. Environmental education has to grapple with such contradictions that comprise:

- The alienation of individuals from external nature (the rest of the biophysical world) and their own inner nature (their potential as human beings);
- Consumption patterns that do not reveal the true environmental costs of goods and services; and
- Education and media presentations that fail to provide a coherent understanding of the relations between the human social and biophysical worlds.

These all contribute to the contradictory situation facing humanity *as a whole* as it continues to extend the scope of conventional economic and political systems in a finite world (Section 1.2).

I have argued, from personal experience and with reference to extant literature, that the *ecosocial* crisis is a consequence of following the 'old' rules of learning by which humans have

connected traditionally with the rest of the biophysical world, and that assume uncritically that ecological and social sustainability is possible within the existing paradigm of unrestrained economic growth[26]. The evidence I have presented suggests otherwise. The question that arises is to what extent humanity should discard the 'old rules' and what it should preserve in the transition to new ways of interacting with reality (Peukert, 1993: 160). Since modern societies are projects of the Enlightenment[27] and, *per se*, projects of learning, the problem for humanity is to evaluate whether the Enlightenment designs for learning are in some way responsible for having brought about the ecosocial crisis. Could systematised models of learning and the particular form of rationality supporting these models have contributed to the crisis? The emergence of such a line of questioning followed from the radical critique of reason and rationality that took place during the 20th century. This critique claimed that enlightened rationality is not a sufficient response to the social and environmental consequences of the mounting human intervention into the biophysical world that threatens the continuance of life on Earth, and it has prompted a revision of the meaning of rationality and education. In this chapter, I have referred to one of the most important attempts to revise the project of the Enlightenment, critical theory, undertaken by critical theorists of the Frankfurt School and for the most part by Jürgen Habermas in his theory of communicative action that I will develop further in Chapter 2.5. This will enable me more fully to consider Habermas' reconstruction of the modern process of rationalisation in accordance with Enlightenment principles and, from this background, to reflect on the significance of this reconstruction for environmental education. This analysis of critical theory and its potential for educational renewal leads to a justification for critical realism as a way of restructuring knowledge of reality, and an exploration of its potential for a more compatible relationship between humans and nature. Such a relationship would lead to a form of human emancipation that does not follow from exercising the Promethian spirit of controlling nature, but of learning to live in accordance with nature's limits.

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[26] It is necessary to distinguish here between 'old' rules following the modernist economic model of ecological modernisation (Section 1.6) and the 'old' rules characteristic of *some* traditional communities whose lifestyles and economies are ecologically and socially sustainable (Chapter 4.2).

[27] In Western thought, *Enlightenment* describes the European and North American movement, flourishing in the 18th century that stressed tolerance, reasonableness, commonsense and the encouragement of science and technology (Bullock, *et al* 1988).

CHAPTER 2
PHILOSOPHICAL AND METHODOLOGICAL CLAIMS

Different approaches to educational research do not simply represent different strategies for data collection but rest on and express different ideologies that implicate different political arrangements and relationships among teachers, students, subject-matters, schools, support agencies and researchers themselves. In other words, the field of educational research has come to recognise a politics of method.

(Robottom & Hart, 1993b: 594)

2.1 Introduction

2.1.1 International attention

Robottom & Hart's claim that research in environmental education ought to be concerned with matters of ideology draws attention to the main purpose of this chapter. It is to establish a theoretical basis for engaging with the conflict between humanity and the biophysical world through environmental education. By 'politics of method', Robottom & Hart are emphasising a distinctiveness about approaches to educational research. That is, it is not simply to do with considering methodology in *technical* terms, i.e. different tools in the researcher's toolbox, but in *political* terms of ideology, i.e. the assumptions which prefigure what is to count as appropriate research topics, appropriate research questions and even appropriate research outcomes, in addition to appropriate research methods. Without an examination of this kind, I would find it impossible to pursue this research.

Several international seminars have attempted to examine the appropriateness of differing research paradigms[28] for environmental education. For example, a seminar organised by the North American Association of Environmental Education (NAAEE) focused attention on the relative merits of positivist, interpretivist and critical philosophies, on matters of validity and generalisability and on the relationship between theory and practice (Mrazek, 1994). Subsequently, NAAEE organised an On-line Colloquium expressly designed to further this debate with an international audience[29]. A different emphasis on environmental education research has been steered by the Southern African Association of Environmental Education (EEASA) whose international conferences have attempted to identify research priorities in the

[28] The term *paradigm* is widely used and has its critics. For example, Gage (1989) refers to the 'paradigm wars' between conflicting methods of social research, e.g. positivism versus interpretivism; and Hammersley (1995: 65) argues that "the setting up of distinct methodological paradigms may create an obstacle to open debate, encouraging dogmatism on both sides". When related to a scientific discipline, Kuhn (1970) used the word to mean the general set of rules and procedures under which people study and investigate the subject matter of the discipline. In this respect, a paradigm is a worldview, a general perspective, a way of breaking down the complexity of the real world.

[29] A similar international on-line debate (ESDebate, 1999) was organised by the Dutch Inter-Departmental Steering Committtee on Environmental Education to explore connections between environmental education and education for sustainable development (Chapter 1.5).

context of environmental and political change in South Africa (Janse van Rensburg, 1994, 1995; Plant, 2000)[30].

More recently, researchers in Southern Africa have been keen to explore whether indigenous knowledge, or at least 'local' knowledge that was devalued during the apartheid era, has the potential for informing new directions for environmental education research (O'Donogue & Janse van Rensburg, 1998). For researchers in the UK and Australia, the focus has been on the relative merits of darker green or systemic[31] perspectives on ecosocial issues on the one hand, and the green socialist position on the other hand (Huckle & Sterling, 1996; Fien, 1993a/b/c, 1997). These paradigm debates have also responded to epistemological shifts emerging from socially-distributed knowledge production systems such as the globalisation of communications networks via the Internet[32], as well as by postmodern perspectives afforded by chaos theory and quantum physics (Section 2.3.2).

2.1.2 Theoretical issues

The foregoing debates concerning appropriate research paradigms are rooted in wider concerns about changes in the social, economic and political structures of present-day society. In the social sciences, these changes generally take into consideration two contrasting perspectives on the social world and its relations to nature, *viz* modernism and postmodernism. It is common to see these perspectives as polar opposites reflecting a belief in a 'postmodern breakthrough' that has radically changed our outlook on the world about us. However, between modernism and postmodernism there are fundamental differences with regard to how each shapes one's understanding of the relations between human social nature and the rest of

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[30] The Southern African Journal of Environmental Education (SAJEE) is the flagship of the Environmental Education Association of Southern Africa (EEASA) and its editorials have addressed the question of what counts as research in the Southern African context. For example, Hughes and Janse van Rensburg's paper presented at the EEASA 1998 conference and printed in SAJEE 1999 issue examines the methodological approaches that might count as research at a time when social science is no longer being dominated by positivist traditions (Hughes & Janse van Rensburg, 1998; Plant, 2000).

[31] *Systemic* reflects an interest in systems-like behaviour, that is a study of systems as comprising interacting parts that make a self-contained whole - an holistic approach.

[32] The term *globalisation*, like 'biodiversity' and 'sustainable development', are all vogue words that defy easy description (Bauman, 1998; Chapter 4.4).

the biophysical world. For example, consistent with modernism as a social perspective is a *positivist* ontology that assumes reality is what the concepts and theories of the scientist and social scientist say it is. On the other hand, associated with postmodernism is an *interpretivist* ontology that holds that social actors produce and reproduce social reality which is a pre-interpreted, inter-subjective world of cultural objects, meanings, interactions and institutions. A consequence of this perspective is that in any social context there may be multiple realities depending on the person who is interpreting the world within and around them. Interpretivism challenges positivism in that, as a view of reality, it asks whether the search for objectivity and truth is possible since knowledge is contextual and therefore relative and dynamic[33]. These differing perspectives of positivism and interpretivism influence thinking about an appropriate theoretical grounding for environmental education, significantly, as I shall show.

Prior consideration of ontology is part of what Crotty (1998: 3) sees as theoretical "scaffolding" for any research endeavour and comprises four elements: methods, methodology, ontology and epistemology: one's choice of methods is governed by what methodology is used and the ontology that lies behind this methodology is informed by an epistemology. Ontology is the study of being, a 'what is' question rather than a 'what it means to know' (epistemological) question. Thus, our different ways of knowing (epistemology) arises from our different ways of seeing (ontology) (Shotter, 1993: 221). The root definitions are: *ontology* refers to the study of the 'nature of being'; and *epistemology* refers to the theory of the method or grounds for knowledge[34]. Whereas Blaikie (1993: 6) sees ontology as "the claims or assumptions that a particular approach to social inquiry makes about social reality", Crotty (1998: 11) argues that this definition stretches the meaning of ontology well beyond its boundaries, for example, as it is embodied in Heidegger's philosophy of 'being' (Heidegger,

[33] There is a logical circularity in asserting that knowledge and truth are relative since it leaves the defender with no authority to make such a claim. Their claim to truth can be nothing more than an assertion based on an act of faith. Heidegger (1962; 272) blamed the impulse to believe in some form of *absolute* truth as belonging to "those residues of Christian theology within philosophical problematics which have not been radically extruded". To put one's faith in science as the instrument of progress and the key to understanding reality is merely to replace one theology with another.

[34] For example, Bhaskar (1989) argues that realist philosophy concentrates "first on the ontological question of the properties that societies possess, before shifting to the epistemological question of how these properties make them the possible objects of knowledge for us" (Section 2.4.2)

1962). In Heidegger's philosophy, 'being' is more fundamental than any series of actually existing beings or objects (Bullock, *et al*, 1988: 76). However, despite Crotty's objection, I shall use the term 'ontology' in a social manner and not in the foundational philosophical sense used by Heidegger[35].

A key concern in this chapter is to draw on Marx's concept of dialectical materialism (Section 2.4.1) in order to stress that the relations between humans and the biophysical world can be improved only in a dialectical relationship with social change and corresponding changes in economic organisation (Firth, 1994). This examination leads me to justify *critical realism* as an appropriate theoretical stance for my research. Critical realism is a way of reorganising knowledge of reality by recognising that humans exist in their relations to nature. These relations are dialectical and have the potential for emancipation provided prevailing forms of abstract and expert knowledge are linked to subordinated concrete and lay knowledge. Critical realism sees the social and biophysical worlds as socially constructed while accepting that social arrangements and understandings are determined by underlying structures and mechanisms of a real world (Davies, 1999: 17; Blaikie, 1993: 59; Hughes & Sharrock: 164).

Critical realism and its concern for emancipatory social goals enables me to justify critical ethnography and critical action research as appropriate methodologies for generating data to answer my research questions. As shown in Fig 2.1, critical realism is one of four paradigms of inquiry that I refer to in this chapter, each reflecting a different view of the relationship between human social nature and the rest of the biophysical world. Differing ontological, epistemological and methodological questions define each paradigm.

2.2 Modernism

2.2.1 As an Enlightenment abstraction

The discourse of modernism draws knowledge almost entirely from a European model of culture and civilisation and is characterised by learning associated with specialised bodies of

[35] In choosing to pin down an *a priori* theoretical viewpoint for my research, I am aware of the possibility of generating data in support of this viewpoint rather than adopting an open approach that subjects this viewpoint to evaluation. I discuss this issue in Chapter 5.

knowledge embodying Enlightenment principles. That is, it sustains a belief in the centrality of human reason and rational autonomy and having, as its cornerstones, a belief in an objective world and the virtues of rationality, the inclination for dualist thinking and the subject-object distinction[36]. Modernity, as an epoch, is widely regarded as having begun with the age of the

Paradigm → / Element ↓	Positivism	Interpretivism	Critical Theory	Critical realism
Ontology Study of the nature of reality or the essence of things	What exists is an apprehendable reality driven by immutable laws and made up of discrete and observable events.	What exists is contingent upon interaction between human beings and their world.	What exists can be understood through communicative rationality based on consensus.	What exists are socially constructed understandings of underlying structures and mechanisms of a real world.
Epistemology Study of the method or grounds for knowledge.	Knowledge formation arises objectively based on experience supported by verifiable evidence.	Knowledge formation arises subjectively in a world of interpretation.	Knowledge formation is transactional and subjectivist leading to findings that reflect different interests.	Knowledge formation depends on building of models of understanding of these structures and mechanisms that, were they to act and exist in the postulated way, would account for the phenomenon examined.
Methodology Study of the procedures that guide research.	The use of hypothesis-setting that is then subject to empirical testing to apprehend universal truth.	The use of procedures to enable people to socially construct meanings.	The use of critical theories in social conditions that favour dialogue and opportunities for fair assessment of the truth.	The use of hypothetical models for testing how real mechanisms shape events that we may or may not experience.

Fig 2.1 Four philosophies and their associated ontologies, epistemologies and methodologies.

[36] Delanty (2000: 9) points out that the idea of modernity is older than its association with the Enlightenment and provides the example, among others, that modernity as a political project was evident among the early Christian thinkers of the late Roman period who were able to define their age as modern in opposition to the pagan world of antiquity. Furthermore, Nederveen Pieterse (2000: 134) points out, there are spatio-temporal variations of modernity such as European, American, Japanese, and Asian modernities. Likewise, there are different capitalisms varying according to historical antecedents and cultures such as 'free enterprise' America and 'statis' in Japan. However, when I talk

Enlightenment spanning the 16th to the 18th century, when, following the Scientific Revolution, the Renaissance, the Reformation and the age of discoveries, the old certainties of the Middle Ages dissolved (Sachs, 1999). The "project of modernity", as Habermas (1987: 9) called it, was fashioned around the idea of the possibility of transforming nature and achieving social progress by the systematic development of scientific and technological understanding, and by its rational application to social and economic life. *Mechanical materialism* is the defining philosophy of these times, perceiving the world as inanimate and predictable through the application of mathematical principles. By controlling nature, humanity would gain freedom from scarcity, want and the arbitrariness of natural calamity (Harvey, 1989: 12). These principles are independent of particular historical, social and cultural circumstances, 'essential' human nature predating history and therefore predating particular cultural circumstances.

As a social movement and as an Enlightenment ideal, modernity saw the world as an arena for unfolding the natural laws of progress and the longing for "one true story [which has] been the psychic motor of (modern) Western science" (Harding, 1986: 193). The promotion of rational forms of social organisation and modes of thought promised liberation from the irrationalities of myth, religion and superstition that reflect the Hegelian-Marxist ideas of history as the arena for the progressive expansion of human freedom. Kant captures the Enlightenment philosophy as revolving around the themes of autonomy, critique and publicity: "Have the courage to use your own understanding! is the motto of the Enlightenment" (Kant, 1996: 58). In his essay published in 1784, 'An Answer to the Question: What is the Enlightenment?', Kant clearly equated 'enlightenment' with a particular way of thinking. On the other hand, Hegel saw the idea of modernity entailing a reflective consciousness of history through which the evolution of knowledge corresponds to phases in the development of society. In this reading of modernity, Hegel expresses the unity of past and present, with Greek civilization, Christianity, the French Revolutions and the modern state forming a totality (Delanty, 2000: 14).

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of capitalism in these pages, I refer to the dominant model that is associated with free market economics acting through globalised processes of world trade.

These ideas of modernity as elaborated by Kant, Hegel, Marx, Weber, and Durkheim are far from the totalising idea of metanarrative or a disciplinary and rationalistic order favoured by critics of modernity (Delanty, 2000: 31). This is because ideas of modernity have been masked through the industrialisation processes of the 19th and 20th century, and in recent times modernity has become associated with the development of capitalism and the exploitation of natural and human resources in the belief that free market forces can improve universal human wealth and welfare. Whilst, for some, the capitalist idea of modernity has brought higher levels of consumption, wealth and health, for millions of others on the margins of modernity it has brought poverty, disease and degraded environments. The holocaust[37], ethnic cleansing, environmental disasters, and high tec weaponry of mass destruction made the twentieth century the bloodiest century in human history and has stimulated a counter-cultural movement questioning modernity's destructiveness, its notions of progress and its insensitivity to the environment and other cultures and value-systems. Early forms of capitalism are associated with Fordist methods of production involving large-scale industrial development and growth. However, Fordism has given way to post-Fordist methods of production involving flexible capitalist accumulation (Harvey, 1989) and characterised by globally decentralised and smaller scale production that offer less secure and fragmentary employment patterns than that provided under Fordism. But, like Fordism, post-Fordist production has not alleviated social and environmental degradation for it locks society in a cycle of production and consumption. Both forms of production are a contradiction of the Enlightenment age of reason and its emancipatory vision of democratic societies peopled by rationally autonomous citizens. Indeed, Habermas (1981a: 9, cited in Delanty, 2000: 93) argued that:

> [The] twentieth century has shattered this optimism [i.e. Enlightenment ideals]. The differentiation of science, morality and art has come to mean the autonomy of the segments treated by the specialist and at the same time letting them split off from the hermeneutics of everyday communication.

Thus, Habermas had an image of modernity that was profoundly pessimistic (Delanty, 2000: 92) and he argued for a completion of the project of the Enlightenment (Section 2.5).

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[37] Bauman (1989) treats the holocaust as the test of the hidden possibilities of modern society, the most complete expresson of the process of rationalisation.

2.2.2 Associated research paradigm

Approaches to research reflecting the Enlightenment belief in the systematic development of scientific and technological understanding, are associated with the umbrella term *positivism*[38] the ontology of which expresses the view that discrete and observable events make up an ordered universe (Fig 2.1). Experimental science limits what is real and therefore worthy of the attention of science. Thus, Blaikie (1993: 94) argues that positivism sees social reality as:

> [A] complex of causal relations between events which are depicted as an emerging patchwork of relations between variables [so that] the causes of human behaviour are regarded as being external to the individual.

Positivism, then, has an objectivist epistemology and knowledge formation is possible so long as researchers follow prescribed procedures and ignore values and biases and focus on the 'facts' (Denzin & Lincoln, 1998: 204). The researcher removes doubt and ambiguity by insisting on objectivity to observe, describe and measure social phenomena directly. Descriptions of reality fall outside the individual's frame of reference (Williams, 1996b: 6).

This notion of decontextualised problem solving persists in providing coherence and authority when defining reliable and realistic options for a societal response to environmental degradation (Kincheloe, 1991: 119; 262; Wynne, 1994: 169), and may well be reinforced by the accountability tradition in education seeking measures of effectiveness, efficiency and economy in curriculum improvement (Chapter 1.2). It may also be that, in seeking legitimacy in its research effort by adhering to accepted research standards of 'what counts' as research, environmental educators base their research programmes on the prevailing positivist science paradigm (Robottom & Hart, 1993a: 31). Disillusionment with this paradigm occurs when it fails to address some of the educational issues deemed important for some researchers

[38] Positivism is often attributed to Auguste Comte (1798-1857) but then only in the form of the encyclopaedic classification of the findings of scientific enquiry (Bullock, *et al*, 1988; see Seidman 1994: Ch1, for a detailed account). However, positivism has its roots in Greek philosophy, was carried along on Scholastic realism throughout the Middle Ages, and rose to its zenith in the age of the Enlightenment. Francis Bacon (1561-1626) refers to positivist science. Griffiths (1999: 63) avoids referring to the term positivism, arguing that it is "vague and unhelpful especially as it so often used pejoratively [preferring instead to see it used] with precision, to refer to the logical positivists of the Vienna Circle". (Also , Hammersley, 1995, includes a detailed discussion).

(Williams, 1996b: 10). For example, Robottom & Hart (1993b: 598) argue that the instrumentalism of positivist research implies a flow of research-based knowledge from the academy to teachers; that it suggests a universality of applicability for the research-based knowledge; and that it is divisive in suggesting a division of labour, a difference in professional status and function, between the academy of researchers and practitioners. I review these concerns regarding my research findings in Chapter 7.

There is, I believe, a myth about positivist research for, while purporting to be objective, it often begins with researchers building in their own subjective value judgements as a benchmark against which to evaluate the activities of those who are being researched. Helen Perkins (UK; see also Chapter 6) recognises this bias in her study of biodiversity initiatives within the Derbyshire Wildlife Trust that employs her (Perkins, 1998)

> For ecologists and conservationists there is a strong motivation to privilege scientific knowledge. Facts can be used to support research and projects upon which reputation, promotion and consultancy fees depend. Nevertheless, the reality is that some of the scientific judgements are constructed within the scientific profession and subject to personal discretion.

Her point is that, whilst contentious environmental issues are obviously 'material' in the sense they have an effect on the social world, they are at the same time 'social' in that they are part of people's concepts and understandings. These are the insights of postmodernism where people consider concepts and understandings to have different meanings depending on their cultural setting and the symbolic values they attribute to different environmental 'harms'. Inadvertently, Helen was also recognising the existence of a real world that is open to interrogation through dialectical processes that are central to understanding the philosophy of critical realism (Section 2.4).

2.3 Postmodernism[39]

2.3.1 In response to Enlightenment principles

The postmodern insights that most seriously challenge modernist thinking arise from the critique of Enlightenment foundational philosophy, in particular the idea of a rationally autonomous subject grounded in *a priori* philosophical truths about the 'universal essence' of human nature itself. Against this, postmodernists argue that there is no privileged position that enables philosophers to transcend the particularities of their own culture and traditions, and there is no 'strategic' point that can provide their inquiries with a neutral ahistorical starting point. For postmodernists, the notion of an ahistorical, non-contingent rational self is a myth since the self is always mediated through the discourses (language and knowledge) learned and acquired in becoming participants in a historical culture[40].

This denial by postmodernists' of a privileged position from which to view the world is what the renowned postmodernist Lyotard (1984) calls a "scepticism towards metanarratives" i.e. a rejection of overarching theories that drive the Enlightenment's search for truth[41]. Postmodernism celebrates many narratives but no single intellectual tradition is able to assume authority. Indeed, there is a rejection of all religions, liberal democracy, development, and science, along with the validity of distinguishing between subjects and objects in the world. The object of analysis becomes the surface appearance; underlying structures are unimportant, and morality is replaced by meaningless relativism. There is, therefore, a vagueness and ambiguity surrounding postmodernism. For some environmentalists, postmodernism has an obvious critical appeal, not least because it accommodates a plurality of the voices, e.g. local knowledge, the rest of sentient nature and acknowledges the cultural economy, but for others it poses difficulties for understanding how to improve the human relationship between

[39] In its broadest sense, postmodernism refers to a pot-pourri of post-structuralist ideas about knowledge advanced by theorists in linguistics, literary criticism, cultural studies and history. The term has become synonymous with a new fluidity and flexibility for social life as it responds to the so-called 'new times'. It is often portrayed as a fondness for superficiality, style and ephemera, a common antipathy towards the modernist ideal of human progress, and a common interest in language and style, rather than explanation and content.

[40] *Discourse*, or what Foucault called 'discursive formations', is a view of language which assumes that language is a form of social practice (Fairclough, 1989: 22; Chapter 4).

humanity and the biophysical world. For example, if there are "an unlimited number of models of order, each one generated by a relatively autonomous set of practices" (Bauman, 1987: 4 cited in Dobson, 1995: 153), where 'truth' and 'rationality' assume less significance, is there not a danger of losing a sense of purpose in relation to educating for the environment? In postmodernism, objectivity gives way to relativism with the result that not only science, but also truth, goodness, justice, rationality, etc are concepts relative to time and place (May, 1997: 16). If postmodernism offers a vision of society that is moving from the stable singularities of knowledge characteristic of modernism to the ever-changing plurality of belief systems in postmodernism, how can anyone have any real conception of the environmental crisis? For example, the increased emphasis on the individual as opposed to the community in postmodern society would appear to represent the antithesis of one of the goals of environmental education which is the need for collective action by enlightened individuals. In a world without reason, how can we educate for the environment if we cannot share a common belief in, and moral commitment for, environmental protection and improvement?

Were I to accept that all meaning is socially constructed and lacks rootedness in any more substantial realm outside the social, then I might deny the existence of a separate natural world, one which is being destroyed and which urgently requires protection. As Anthias (1999:160) argues, "post-modernism does not provide sufficient help to produce theories that are particular and local and that look at interrelations". These doubts lead me to believe that the relativism of deconstructive forms of postmodernism offers little comfort for environmental educators seeking guidance on how communities can address the ecosocial crisis. As Gare (1995: 2) argues:

> [The] loss of overarching perspectives and grand narratives associated with postmodernity are threats to the efforts of environmentalists who are struggling to develop and proselytize a global perspective on environmental destruction.

On the other hand, to take postmodernism as reconstructive is to accept its transformational properties and valuing of dialogue among different forms of knowledge (scientific, experiential,

[41] It is paradoxical that postmodernists disallow any notion of a general theory yet their 'theories' or discourses do express a general view about the nature of knowledge!

traditional and so on). It has encouraged a more critical social thought, especially the way dualisms typically obscure connections, hierarchy and differences, and it also exposes particular perspectives based in power relationships hidden in metanarratives such as 'development' (Chapter 4.2). Reconstructive postmodernism supports understanding of strong sustainability with its advocacy of democratic processes through community action (Chapters 1.5 and 4.3) and the accommodation of different worldviews. Its approach to knowledge production encourages explorative methodologies and inter-disciplinary methodologies that challenge the hegemony of the metanarrative, the one way of seeing the world. Whilst, deconstructive postmodernists slide into relativism, idealism and the rejection of the ambitions of social science, reconstructive postmodernists point to a renewed social science that is conceptually cautious and more reflexive about its theoretical claims and its social and political position (Sayer, 2000: 6)[42].

Despite these claims for a reconstructive postmodernism, there is some doubt that postmodernity is a phase of social life beyond modernity, that it represents the most advanced phase of modernity. For example, Delanty (2000: 131) claims, "postmodernity is deeply rooted in the culture of modernity". Indeed, with regard to the popular idea that modernism implies scientific certainty, Delanty (2000: 2) argues that:

> [The] epistemic culture that modernity brought about was one of a deepening of uncertainty [following the belief that human cognitive powers can only anticipate possible worlds since] knowledge is always constrained to be mediated by experience.

Postmodernism, then, might be seen as simply a self-consciousness response to this deepening uncertainty by accepting that there are limits to what can be said and done. The idea that in modernism there is an early resonance of postmodernism suggests, not a sharp divide between the two, but a gradual cultural shift starting with premodern scepticism. That is, there is a recognition of limits, which paved the way for the next step, the distanciation of subjectivity

[42] Reconstructive postmodernism also adopts a cautious attitude to natural science regarding it as a fallible and evolving enterprise sometimes offering understanding and sometimes obscurity. This

and objectivity, thence the modern turn of discursivity, and the final step of 'postmodernity', i.e. the recognition of the reflexivity of the self (Delanty, 2000: 131). If, as Callincos (1989) argues, practically every characteristic that postmodernism claims to be unique has already emerged, postmodern discourses are not so different from the modernist ones that they profess to replace. As I have noted above with regard to Fordist and post-Fordist production, the alleged differences between modernism and postmodernism obscure the continuities in the economic and social world that threaten ecological and social sustainability (Smith, 1993). Could it be, as Harvey (1989) suggests, that postmodernism is simply the "cultural clothing" of flexible accumulation characteristic of post-Fordist production, and that the very flux and diversity of postmodern cultural life is required to mask the injustices of capitalism's route to flexible accumulation and society's transition to post-Fordism?

2.3.2 Postmodern sciences

In this section, I argue that insights of the 'new', or postmodern, sciences point towards the view that humans are embedded in a reality greater than the human social through a dialectical relationship with the biophysical world. This examination will provide the basis for a consideration of critical realism as a philosophical standpoint for my research. Postmodern sciences refers to 'new' forms of knowledge formation in the natural sciences that Doll (1989: 243, cited in Green and Bigum, 1993) sees represents a profound shift in:

> [O]ur vision of the universe ... from the simple, eternal one of Newtonian modernism to the complex, finite one of postmodernism [a movement which represents] a radical revision of the world and human consciousness [and which has in turn] radical implications for education and curriculum

Doll is referring to the so-called postmodern sciences of quantum physics[43] that emerged at the beginning of the 20th century, and chaos theory[44] that originated in the 1970s (Best, 1991;

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suggests that one should be sceptical of any proposal that science is an authoritative guide to the extent of the environmental crisis (Dickens, 1995: 100).

[43] *Quantum physics* (or quantum mechanics) is hardly a 'new science'. Following earlier work by Planck and Bohr, Dirac, Heisenberg and Schrödinger founded quantum physics in the 1920s (Bullock, et al, 1988).

[44] *Chaos theory* owes much of its development to the use of computers in the rapid and repetitive calculations needed in modelling non-linear systems. Complex systems that are apparently chaotic are able to undergo spontaneous self-organisation. Moreover, they are adaptive in that they do not just

Prigogine & Stengers, 1984). Both theories posit a rather different view of reality than that seen by classical, or Newtonian, science. Whereas classical science apprehends reality by identifying and understanding the properties of its constituent parts, postmodern science rejects such mechanistic and reductionist approaches. The findings of quantum physics reveal a cosmos in which the constituent parts can have no coherent identity or meaning except in relationship to everything else. The implication of this 'relational holism' is that there are no parts but merely "patterns in an inseparable web of relationships" (Capra & Steindl-Rast, 1992: 83). Enfolded into each part is the signature of the whole - what I believe Bohm (1985) refers to as the 'implicate order'[45]. 'Relational holism' implies a dialectical relationship between the units comprising complex systems, embracing human social nature and the rest of the biophysical world (Section 2.4.1).

A pivotal idea in understanding relational holism is that sub-atomic particles become manifest as either particles or waves - the so-called 'wave-particle duality' of matter and radiation (e.g. Zohar, 1990). A full description of any particle calls for a full description of both its wave and particle states. Yet, physicists cannot design an experiment to enable them to see both aspects of the duality at the same time. In 1927, Heisenberg called this the 'uncertainty principle'. They identify and measure waves or particles, a consequence of which is that "nothing is fixed or fully measurable, everything remains indeterminate, somewhat ghostly, and just beyond our grasp" (Zohar, 1990: 11). The point I am making here is that the uncertainty principle repudiates belief in a mechanistic gulf between observer and observed, subject and object. Context is, thus, crucial. Classically, things and events that are perceived as separate and

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passively respond to events since they are able to bring order and chaos into a special kind of balance. Complex systems such as society are often seen to be on the 'edge of chaos' which is the constantly shifting battle zone between stagnation and anarchy, the one place where a complex system can be spontaneous, adaptive and alive (Waldrop, 1994). Self-organising systems take chaos from the surrounding environment and pull it into a dynamic, ordered pattern. In the case of the conscious mind, the brain takes the plethora of information that bombards the brain every moment and draws it into a pattern - if this is cultural information, into a 'world view', or a lifestyle.

[45] Bohm's (1985, 1992) theory of the 'implicate order' arises from his interest in the philosophical implications of quantum and relativity physics and with discovering a metaphor that might make their meanings accessible to the general public. His work focused on the proposed idea of a 'quantum potential', a means by which the view of unbroken wholeness, implicit in relativity theory, is understood in the context of quantum theory.

parted in both time and space are seen by quantum theorists as so closely linked that their interdependence defies the reality of both space and time. In effect, the laws of physics become relativist statements rather than an expression of objective certainties (Crotty, 1998: 30).

In Selby's (1998) view, this radical interconnectedness of the quantum world carries potentially far-reaching assumptions at the level of our human-in-world reality, and argues that 'self' arises in large part out of the sum total of our ongoing dynamic relationships. If we are intimately embedded in a reality greater than ourselves; if all phenomena, including ourselves, are non-localised, then we experience a belonging, of being 'at home' with all life forms and all places. This is what Capra & Steindl-Rast (1992: 15, 57) call "that mystic sense of limitless belonging". In addition, both particle and wave aspects are recognised, the former giving us form, (permeable) boundaries and (some of) our identity, the latter giving us the "indeterminate, the relational, spread out all over space and time" (Zohar & Marshall, 1994: 95). Within a web of radical interconnectedness nothing is more fundamental than anything else; that within the web's dynamic complexity nothing is completely knowable and that concepts, theories and frameworks are, at best, provisional approximations.

These conclusions of quantum physics resonate with postmodern perspectives where knowledge is ephemeral, contingent and dependent on the socio-cultural partiality of the knower. However, this perspective is not simply integrative of positivism and interpretivism for it suggests a melding of reality with the social construction of the knower. Crotty (1998: 30) points to the significance of this understanding for our ways of knowing, in particular about the contradiction that exists in scientific practice:

> For all the positivist concern that statements be verified by observation before being accepted as meaningful, a host of elaborate scientific theories have emerged whose development clearly requires the acceptance of much more than direct conclusions from sense data.

As with quantum physics, chaos theory (Gleick, 1987) is characterised by a break away from universalising, totalising perspectives toward local, fractured systems and modes of analysis

(Hayles, 1990; Young, 1991; Abraham, 1994; Waldrop, 1992). By the 1980s, the new information technologies and communication technologies had contributed to the view that the world is a complex system interconnected by an array of feedback loops. In Kamminga's (1990: 58) terms, the study of complex systems provides "new insights [that] alert us to the possibility of a sensitive and fragile world, necessarily changing the way we think about it and (ought to) treat it". Thus, Best (1991) argues for a new research paradigm "based on principles of indeterminacy, chaos[46] and evolution", a paradigm shift[47] that responds to the dynamic, open-ended complexity of social and environmental issues which are implicated in the ecosocial crisis.

Grounded in complexity, chaos theory brings together the postmodern virtues of situatedness, *praxis* and process and, it is argued by Selby (1998), that chaos theory offers environmental education a way of transcending the fantasy of progress, of knowability and predictability that permeates much of the current response to the ecosocial crisis. This is because, as Best (1991: 194) notes, the notion of non-linearity, which is crucial to understanding chaos theory, "overturns the deterministic classical view to reinterpret the universe as being constituted by forces of disorder, diversity, instability and non-linearity". Instead, "chaos theory elevates variation, change, surprise and unpredictability to the centre of the knowledge process" (Young, 1991: 290). Accordingly, I see chaos theory suggesting that reality is apprehendable but only by recognising the intertwining of society with biophysical nature in a mutually dialectical relationship (Section 2.4). The complexity of this relationship recognises, on the one hand, the causal powers of nature and the material processes involved in these powers and, on the other hand, the particular ways in which people recognise and communicate these powers and processes to one another (Dickens, 1996: 83).

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[46] *Chaos* is a rather inappropriate term since chaotic systems (in the sense used in this discussion) are:

- Deterministic since they have some determining equation ruling their behaviour.
- Sensitive to initial conditions since even a very slight change in the starting point can lead to significantly different outcomes.
- Neither random, nor disorderly since truly random systems are not chaotic but have a sense of order.

[47] Although the idea of a *paradigm shift* was coined by Kuhn, the idea of bringing together data, discrepant results and tentative lines of thought from previous disconnected investigations to create new

2.3.3 Associated research paradigm

Interpretivism is the research paradigm most closely associated with the postmodern fondness for socially constructed meanings about the nature of reality (Fig 2.1). It has, therefore, a relativist ontology meaning that perceptions of reality are contingent upon human practices, being constructed in and out of interaction between human beings and their world, and developed and transmitted within a social context (Crotty, 1998: 42). It assumes that social reality is not some 'thing' that may be interpreted in different ways; it *is* those interpretations, which means that interpretations "are not more or less true in any absolute sense but just more or less informed and/or sophisticated" (Denzin & Lincoln, 1998: 206). It follows that the epistemology of interpretivism is transactional and subjectivist. This means that the conventional distinction between ontology and epistemology disappears: what it is possible to know, i.e. ontology, is inextricably intertwined with the interaction between a particular investigator and a particular object or group (Crotty, 1998: 206). In my reflections on postmodern sciences in Section 2.3.2 above, I noted how these sciences point to a 'web of relationships' that exist between the human observer and reality. Reality is apprehendable through these relationships.

Clearly, the meaning of interpretivism contrasts sharply with positivism both with regard to its theoretical perspective and to its epistemology. It is essentially concerned with the cultural, social, political, geographical and genderised specifications of experience, rejecting the possibility of universal laws and recognising that "our ways of knowing are inherently culture-bound and perspectival" (Lather, 1988: 570). Pines (1985: 111), too, sees the interpretation of reality via symbolic "conceptual filters" and sensation, "the raw data of the senses" just as Tarnas (1996: 397) states, "all human understanding is interpretation and no interpretation is final"[48]. Moreover, interpretivism asserts a way of knowing for postmodern times that

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conceptual patterns was advanced by Whewell (1847/1967: 73-78, cited in Macpherson, 1995). Whelwell coined the term 'consilience' to describe this process - very like a paradigm shift.

[48] I find it difficult to accept that the social construction of knowledge of 'reality' is wholly a linguistic process. For example, Jasanoff (1999: 141) draws attention to the book *The Songlines* (Chatwin, 1987) in which Chatwin describes how the Australian aborigine's totemic ancestors laid down a trail of musical notes along the line of their footprints as they travelled the country. These 'dreaming tracks' lay over the land as ways of communicating between the most far-flung tribes and enabled the construction of reality through particular modes of singing.

challenges the clockwork predictability of mechanical materialism associated with modernism and, instead, point to dialectical relations between humans and the biophysical world characteristic of dialectical materialism (Sections 2.2.1, above, and 2.5.1, below).

In contrast to positivism, interpretivism as a paradigm of enquiry for environmental education has gained a significant following despite its critics claiming that the element of subjectivity in interpretivist research weakens its value to others. However, the growing lack of certainty in people's knowledge of specific phenomenon such as the claims of science has encouraged interpretivist researchers to expand their investigations (Williams, 1996b: 14).

2.4 Realism

2.4.1 Dialectical materialism

The self-organising, non-linear features of chaos theory, and the interdependence of subject and object foreseen by quantum theory, suggests a world more complex and adaptive to change than classical science predicts. Martell (1994: 169) sees this change in terms of, for example, cultural change, changes in social structure, environmental change, technological change and personal change. Thus, technological change usually brings with it social and environmental change as in the field of communications. For example, the technology of fibre optics has brought with it rapid social change through faster and more accessible communications, as well as environmental change through the siting of communications towers and disturbance to urban trees caused by laying cables underground. Whilst examples such as these show the ease with which one can map such changes, understanding *how* these different factors interact and affect each is not so easy. However, dialectical materialism is a concept that offers a means of doing so.

Dialectical materialism derives from the teachings of Karl Marx and Friedrich Engels (1987) whose analysis of social change has become the starting point for some contemporary theories of the environment. This is not to say that they volunteered any ecological position related to environmental degradation, capitalism and social justice. On the contrary, Marx and Engels were only marginally concerned with environmental matters *per se*, and, in the later Marx,

there is evidence of a "distinctly anthropocentric direction depicting humans as achieving mastery over nature, in no small part because of technological innovation and automation" (Hannigan, 1996: 18-19). Moreover, ecofeminists and social ecologists have not approved of the masculine subtext of the 'mastery' sought by Marx. Neither do some Green theorists have much time for 'eco-Marxists' who continue to place faith in the working class as agents of revolutionary change, both societal and environmental (Eckersley, 1995: 86: Seidman, 1994: 179). Hence, where environmentalism is in support of Marxism, it usually opposes the utopianism, idealism and 'voluntarism' of much Green theorising (Eckersley, 1995: 84). For eco-Marxists, environmental degradation is simply a failure of society to use natural resources wisely, a view not at odds with Clifford Pinchot's argument for sustainable resource use (Footnote 2) but it is inconsistent with John Muir's vision of large tracts of the wilderness preserved in pristine condition (Turner, 1985). In this sense, Marxism embraces ecological modernisation in its preoccupation with human betterment through mastery of the biophysical world (see page 25).

These criticisms are not intended to dismiss eco-Marxists' critique of capitalism that regards the ecosocial crisis is a consequence of economic exploitation driven by capitalism so that only by understanding the global capitalist system is it possible to understand why it threatens social and ecological sustainability. The Marxist argument is that capitalism works only for the benefit of the owners and controllers of capital rather than for the benefit of the complete society of producers. The advance of bureaucracy within the capitalist order has far outstripped the progress of liberal democracy and has overshadowed the advance of moral and aesthetic reasoning. However, Marxism offers more than simply a perceptive analysis of capitalism. It also offers critical insights into the *dialectical* relationship between society and nature. I want to explore this relationship here. Essentially, for Marx and Engels, materialism means that the material world perceptible to the senses has objective reality independent of mind and spirit. They do not reject the reality of mental and spiritual processes but endorse the view that ideas could arise only as products and reflections of material conditions. This view is in opposition to metaphysical thought that allowed things to be viewed in abstraction since dialectics, as originally expounded by Hegel, considers things in their movements and changes, interrelations and interactions (Gare, 1995: 133). Thus, materialism is the opposite of

idealism (actually 'idea-ism') in that it treats mind and spirit as capable of existing independently of matter. The basic principle of dialectics is that an object is not simply a thing but has a history of development, and it is always 'caught up' in this process. In the case of human evolution, this is hardly surprising given since, during human development, increasingly sophisticated forms of retrospective and prospective awareness including the ability to recall past relationships with the world, compare them with the present and thereby project the most likely developments in the immediate future. The individual-in-environment achieves such ecological knowledge by employing and modifying adaptive strategies developed by communities over a long time. In this respect, I see the human mind actively engaging in seeking for, interpreting and responding to meaning.

Dialectical materialism addresses the weaknesses of mechanical materialism (Section 2.4.1) since it regards the innermost nature of things as dynamic and conflictual rather than inert and static[49]. That is, the world is not a ready-made system (as positivism would have it), but exists as a system of processes, flows and relations through which all things come into existence, then flourish and pass away. Objects structures and systems do not exist outside of the processes, flows and relations that create, sustain or undermine them. The idea that reality is the relationships *between* things, the latter simply constituting the structures through which relationships are realised, abandons the classical dichotomies of Cartesian philosophy: mind/body, human/animal, person/world; and resonates with the idea of relational holism discussed on page 61. This ontology transfers into method in which objects are analysed relationally rather than atomistically (Martell, 1994: 180). So, for example, when we recognise that the complex pattern of social life created by humans is currently responsible for exploiting the biophysical world in unsustainable ways, we may become motivated to change our technologies so as to bring about a more ecologically and socially sustainable future.

Dialectical materialism, therefore, stresses the possibility that the relations between humans and the biophysical world can be improved only in a dialectical relationship with social change

[49] There ought not to be any confusion between, *dialectical materialism* as a theoretical basis for a way of reasoning, and *historical materialism* that describes Marx's interpretation of history in terms of class struggle.

and corresponding changes in economic organisation (Firth, 1994). Marx thought that this relationship meant that the strength of the dependency on nature makes nature humanity's 'inorganic body' (Dickens, 1992). Paradoxically, this idea appears to resonate with ecocentrism claiming humans live from nature and that nature becomes part of 'human-being' (Chapter 4.6). However, in case I am tempted to label Marx an ecocentric, I repeat what I emphasised above that Marx puts heavy stress on humans actively appropriating nature, and his philosophy does not engage with moral concern for non-human nature. Indeed, Marx regarded animals as part of the division of labour, their work being alienated by their masters in a "master-servant relation" (Marx, 1973: 500, cited in Dickens, 1996: 63).

2.4.2 Critical realism

Dialectical materialism prefigures an environmental philosophy that considers how the relations between human society and non-human nature work. It looks for ways of understanding the role of contingent social circumstances in filtering and forming the specific mechanisms by which natural causal powers are recognised. Human society and non-human nature are not entities that are completely independent, but "their fortunes are locked together in a mutually constitutive dialectical relationship" (Martell, 1994: 178)[50]. This means acknowledging that reality can only be known under particular descriptions, in terms of available discourses, though it does not follow from this that no description or explanation is better than any other (Sayer, 2000: 2). The foundational beliefs of a realist philosophy are:

- There is a real world which humans have not made or constructed;
- This real existence is apprehendable by the human mind;
- Such knowledge is the only reliable guide to individual and social conduct.

It follows that a socially sensitive realist philosophy is opposed to strong forms of interpretivism that assume the biophysical world is purely a human construct, and contrasts sharply with positivism that gives too much power to nature's role in determining human

[50] I can see a connection here between an older tradition in biology, argued strongly by Haldane (1913: 79), that accepts a dialectical relationship between humans and other organisms: "There is no sharp line of demarcation between a living organism and its environment." Haldane's view is in sharp contrast to

activities[51]. Thus, while realism has an ontology claiming that reality is socially constructed, it maintains that underlying structures and mechanisms of a real world determine social arrangements and understandings (Davies, 1999: 17; Blaikie, 1993: 59; Hughes & Sharrock 1997: 164). In other words, a realist perspective does not turn its back on understanding nature as socially mediated but sees it "as having real independent objective causal powers of its own" (Martell, 1994: 177). It follows that a realist epistemological perspective depends on the building of models of understanding of these structures and mechanisms that, were they to act and exist in the postulated way, would account for the phenomenon examined (Blaikie, 1993: 98). Advocates of realism as a philosophy of sociology include Dickens (1992, 1996), Sayer (1992, 2000), Bhaskar (1978, 1989, 1993) and Collier (1994).

Critical realism[52] is a philosophy claiming a form of realism that addresses the project of universal human emancipation, including the ways in which science may aid and empower it. Bhaskar (1989, 1993) named this philosophy 'transcendental realism' for the natural sciences, and 'critical naturalism' for the social (or human) sciences. Critical realism is an elision of these two earlier conceptions (Corson, 1991). By 'transcendental', Bhaskar sees the world of science from the perspective of what scientific practices presuppose about the world and he offers this perspective in direct opposition to an empirical realist position. Whilst Bhaskar sees the former position upholding the idea of the independent existence and action of the causal structures and things investigated and discovered in science, he argues that the valid subject matter of the latter position "is exhausted by atomistic facts and their conjunctions" (*ibid*). In other words, Bhaskar means that empirical science rigourously eliminates subjective elements in order to obtain knowledge that is objective and verifiable. In turn, this reductionism has

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the (largely Western) idea that the environment is 'out there', separate from and independent of the human lifeworld with organisms simply adapting to places ('ecological niches') they occupy.

[51] *Realism* refers to a certain philosophic way of thought first inaugurated by Plato and Aristotle, developed and refined in the Middle Ages and as such, has been adopted and cultivated by more great minds for a longer time and in more diverse settings than any other philosophy available to us. Realism seems to me to be a philosophy of common sense for it overcomes philosophy's distancing from reality (or its assertion that there is no reality).

[52] *Critical realism* has developed into an international and multidisciplinary movement which has sought to explore the implications of the philosophical ideas developed by Roy Bhaskar and others since the publication of Bhaskar's *A Realist Perspective of Science* in 1975 to transform understanding of science (WSCR, 1999).

transformed many disciplines into robotic exercises in categorisation, taxonomy and inventory. I believe this transformation has removed from science its original creative passion, so that the meaning of any known thing is in the detailed arrangement of the particulars comprising it, rather than in the dialectical relation of these particulars to any gestalten of meaning.

Bhaskar wanted to mitigate the often detrimental influences of the mutually opposing positivist and interpretivist discourses on grasping the meaning of reality by seeing the social sciences as "a means to understanding and thus transforming and transcending the limitations and restrictions of special interests" (Sherman, 1991, cited in Corson, 1991: 231). In other words, Bhaskar's critical realist philosophy also embraces emancipatory social practice and this has common ground with contemporary interest in critical theory. Essentially, then, Bhaskar has socialist political interests in mind. When he talks of "reclaiming reality", Bhaskar (1989) means the elimination of prejudices, errors, and philosophical false trails that have covered or disguised reality; and he talks of using this reclaimed reality as the only basis for emancipatory social practice (Corson, 1991). For Bhaskar the social world cannot be understood and changed unless humans identify the structures at work that generate special interests and this interpretation has, as its prerequisite, the philosophical idea of the independent existence of the natural *and* the social worlds (Bhaskar, 1989, cited in Corson, 1991: 231).

By arguing for the existence of a discourse-independent reality, Bhasker accepts that while social phenomena are conditioned by, dependent upon and only materially manifest in natural phenomena, these same social phenomena remain taxonomically, causally, ontologically and epistemologically irreducible to natural phenomena (Corson, 1991: 231)[53]. That is, while the biological world is emergent from the physical world, the social world is emergent from the physical and biological worlds. Thus, Bhaskar's critical realism is epistemologically tentative in that it attempts to explain the reality of the generative mechanism(s) that brings about that which was to be explained; but it is "ontologically daring" (*ibid*: 238) in that it allows for the actual existence of generative mechanisms which explains social events in the past and the

[53] I would be surprised if it were otherwise. The being of humans, indeed the whole of biotic life is bound up indissolubly with evolutionary processes that originated and sustained this being. How, then,

present. For Dickens' (1996: 31, this means, "all human activities, relations and mechanisms are set within general biological processes and mechanisms". Thus, even though I may wish, through thoughtlessness or ignorance, to dissociate myself from these laws and mechanisms, I remain dependent on them. Bhaskar's claim that critical realism embraces emancipatory and critical social practice grounded in human reflexivity is in contrast to "the unthinking presupposition of closed systems" (Bhaskar, 1978: 14) that continue to characterise much of formal education. Critical ethnology and critical action research are two contemporary research methodologies that are consistent with Bhaskar's conception of how a reflexive and emancipatory social practice can help solve human social and ecological problems (Section 2.5 and Chapter 5). These methodologies have their theoretical basis in Habermas' 'communicative rationality' or 'ideal speech situation' as central concepts of critical theory.

2.5 Critical theory[54]

2.5.1 Background

During the 1980s, understanding of the complexity of the epistemological bases of educational research had advanced significantly so that by mid-decade Popkewitz (1984), following Habermas (1972), was able to elaborate three research paradigms which, besides positivism and interpretivism, included the critical paradigm. In this section, I extend the introduction to critical theory in Chapters 1.2 and 1.3 to consider the potential contribution of the critical paradigm to a better understanding of the human-nature relationship, in particular its critique of technological rationality, the concept of modernity and the relation between theory and

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can human consciousness, which is also a product of these material processes, be endowed with the capacity to fabricate this material reality as a fantasy? (See Dickens, below.)

[54] Any discussion of critical theory takes as its point of departure the work of The Frankfurt School established at the University of Frankfurt in 1923 as a centre for historical and sociological inquiry inspired by Marxist theory. Leading members of the Institute including, Horkheimer, Adorno, Benjamin and Marcuse were soon giving equal emphasis to purely theoretical work known as 'critical theory'. Critical theory is concerned with problems of aesthetics, culture and modernism. After dispersal during the Nazi period, the critical theory school of thought moved back to Frankfurt in 1949 where Habermas emerged as its leading figure (Urmason & Rée, 1993). He articulated a remarkable range of specialised literature in the social sciences, social theory and the history of ideas in the provocative critical theory of knowledge and human interests. Habermas points to the "objectivist illusion" of pure theory and, instead, espouses the Kantian posture that there are "indissoluble links among knowledge, methodology, and human interests" (Habermas, 1972: 309, cited in Denzin & Lincoln, 1998).

practice. This will lead me to relate dialectical materialism to a critical theory of environmental education.

While society is aware of the contradictions of capitalism, as Marx was, Marxism has not been able to bring about radical social change in favour of social justice and ecological sustainability (Delanty, 2000: 14). Critical theorists such as Marcuse and Habermas argue that this is because capitalism has developed new compensations and forms of social control, a feature of which, as I argued in Chapter 1.2 and 1.5, is that obligations of what is technically and bureaucratically expedient now take precedence over what is morally and politically right. This characteristic of 'ecological modernisation' prevents radical forms of democracy, governed by communicative rationality, from renewing social progress as originally embodied in Enlightenment principles. Basing sustainable development on what is morally and politically right, technically possible, culturally appropriate and accountable for the interests of present and future generations and the rest of the biophysical world, would allow for the renewal of Enlightenment principles.

Unlike the largely uncritical form of enquiry represented by interpretivism, Habermas' critical theory stresses that knowledge and scholarship are not neutral but serve a range of interests and power structures. That is, that knowledge is a power-laden concept that helps define reality (Chapter 4.1.1). The ontology of critical theory regards both natural and social realities as socially constructed, and its epistemology rejects objective observation in both the natural and social sciences owing to the assumptions made by the observer. However, whereas reality for interpretivism is mouldable depending on who is interpreting reality, for critical theory reality is "apprehendable" (Denzin & Lincoln, 1998: 206); that is, it is possible to grasp the fundamental nature of reality for what it is. Habermas claims that it is cognitive interests - the strategies for interpreting experiences - that determine the objects of reality; theoretical statements do not describe reality, they depend on assumptions embedded in theoretical constructs and common sense thinking (Blaikie, 1993: 97). For this reason, critical theory is not, as science assumes, value-free since the researcher and the investigated 'object' are interactively linked and, inevitably, the values and experiences of the researcher influence the inquiry (Denzin & Lincoln: 1998: 206). Therefore, Habermas is claiming that conceptions of

reality depend on dialectical social processes that assume a material reality is apprehendable through social processes, as do critical realists.

Habermas' critical theory has been influential in educational theory and research methodology through attempts to articulate the conditions under which a democratic society can emerge (Robottom & Hart, 1993a; Fagan, 1996; Williams, 1996a; Firth, 1995, 1996; Huckle, 1993, 1995, 1996a/b; Young, 1990; Fien, 1995: 23; 1997). The second theoretical strand to Habermas' critical theory, *knowledge constitutive interests*, gives rise to three forms of reflective practice. The first of these is 'technical' reflective practice (or 'work' knowledge) which can be called the 'management orientation' to research since it is characteristic of the *empirical-analytic sciences* and is concerned with prediction about, and control of, the environment (however defined). The intention of technical reflective practice is to make existing practice more efficient rather than transforming it. It is what Schön (1991) calls 'reflection in action' but without the necessity for any theoretical underpinning. This atheoretical approach to improving practice is evident in the competencies model of education that is marked by closure rather than openness, passivity rather than activity, control rather than freedom (Morrison, 1995).

Habermas (1972: 50-1) argues that 'hermeneutic' reflective practice (or 'practical' knowledge characteristic of liberal-progressive approaches to education) is a feature of the *historical hermeneutic sciences.* Its fundamental concern is clarifying, understanding and interpreting the meanings, intentions, actions and communications of "speaking and acting subjects" (Habermas, 1974: 8, cited in Morrison, 1995: 88). Unlike technical reflective practice, hermeneutic reflective practice means that teachers and researchers reflect on practice based on underpinning theory and it is by far the most widely adopted form of reflective practice (Schön, 1983, 1991). Not only does this approach respect participants' professional and informed judgements, it replaces the passivity of the technical model with an active constructive approach to understanding based on debate and discussion. However, the emphasis on understanding is sometimes criticised because it need not necessarily lead to improved practice or of empowerment (Morrison, 1995: 89). In other words, hermeneutic understanding might be reproductive rather than transformative of the *status quo* (Chapter

1.7). Much of the historical-hermeneutic disciplines, e.g. descriptive social science, history, aesthetics, legal, and ethnographic literary, are classified by Habermas as belonging to the domain of practical reflective practice.

Habermas called his third approach the 'critical sciences' and is concerned not with prediction or interpretation but with criticism (Habermas, 1974: 22). This approach to reflective practice leads to empowerment and emancipation and brings about a society based on freedom, equality and democracy in which repressive forces dissolve:

> [Through a process of rational] self clarity and moral autonomy of individuals who are inextricably connected to a social conscious form of political action that betters the social good through just and equitable means (Payne, 1999).

Clearly, critical reflective practice has all the attributes of the hermeneutic reflective practice but, additionally and significantly, it has a political agenda since it offers people a critique of their political and economic condition (Morrison, 1995: 90). Habermas appeals to the 'ideal speech situation' for emancipatory properties and principles and argues that 'ideal speech' is "oriented to reaching understanding" (Habermas, 1984: 227). Evidently, 'ideal speech' is a powerful call for emancipation for it enables people to take into account their current circumstances and to have them set their own agenda rather than to have it imposed. In terms of making a response to the ecosocial crisis, the emancipatory or critical approach to environmental education involves the identification of those aspects of the dominant worldview that frustrate the goal of ameliorating or reversing harm to human social and non-human nature.

Habermas' critical theory is explicitly socially normative and based on a society characterised by equality, freedom, democracy, autonomy, and collective empowerment. In this sense, Habermas follows his Enlightenment predecessors in asserting the centrality of human reason to any concept of human nature and the primacy of rational autonomy as a political and educational aim. Habermas justifies his normative theory with reference to his theory of communicative action which maintains that, while language is a vehicle for misinformation, lies, distortion and ideology, it carries with it emancipatory properties and principles that can

offer truth (Huckle, 1997: 3; Firth, 1995, 1996). In an ideal speech situation, people reach understanding discursively by recognising four validity claims. We claim that what we say is: intelligible (comprehensible); true (matches reality); is correct (legitimate and appropriate in context); and sincere (genuinely meant). There is a requirement for a discursive examination of these validity claims in the ideal speech situation since people arrive at consensus through argument alone.

2.5.2 Implications for curriculum and research

Critical or emancipatory research, then, is a dialectical process between researcher and the subjects of the inquiry as ignorance and misapprehensions become transformed into a more informed consciousness (Huckle, 1996, 1997; Habermas, 1972; Kemmis, 1986; Carr & Kemmis, 1983; Young, 1990). A critical research agenda entails recognising the socio-cultural, economic and political contexts of the research participants. It includes concern about how resources are distributed and how power is exercised over less privileged groups. Therefore, the intention of research based on critical theory is to reveal the relations of domination that exist in society. As Harvey (1989: 2), argues:

> At the heart of critical social research is the idea that knowledge is structured by existing sets of social relations. The aim of a critical methodology is to provide knowledge which engages the prevailing social structures. These social structures are seen by critical social researchers, in one way or another, as oppressive structures.

However, whilst I endorse the relevance of the emancipatory potential of critical theory to environmental education as discussed above, I am concerned that Habermas remains wedded to a modern idea of universal rationality, knowledge and values. For example, Eckersley (1992: 99) notes that Habermas believes that environmental movements will only succeed if they adopt "technical and economic solutions that must in turn be planned globally and implemented by administrative means" (Habermas, 1981b: 35). If the pathologies of capitalism are the result of purposive rationality, how is it possible to defend the life-world against the advance of bureaucratic and economic mechanisms without transforming those mechanisms (Eckersley, 1992: 99)?

Nevertheless, there is a need for environmental education to develop active and experiential learning that encourages students to reflect critically on the social, economic and political trends that influence and restrict their lives. Such 'socially critical' teaching and research is aimed at helping people overcome obstacles to social change and to commit them to working towards active community participation for understanding and resolving environmental problems; that is, they become 'transformative intellectuals' (Giroux and McClaren, 1989; Huckle, 1996a/b). Kemmis' (1986: 13) understanding of this term is that "we need to learn or re-learn what our bureaucratic culture has hidden from us - that we are not only the products of history but also the makers of history". Aronowitz & Giroux (1985) provide a useful typography that helps to position the idea of a transformative intellectual within a spectrum of intellectual stances. It has the following categories:

- *Hegemonic intellectuals*: "The interests that define the conditions as well as the nature of their work are tied to the preservation of the existing order" (39). This category aligns with the management orientation as discussed above in relation to critical theory;
- *Accommodating intellectuals*: "Those who function primarily to circulate uncritical ideas and social practices that serve to reproduce the status quo" (39). This category aligns with the liberal-progressive orientation as discussed above in relation to critical theory;
- *Critical intellectuals*: Those who are "critical of inequality and injustice, but they often refuse or are unable to move beyond their isolated posture to the terrain of collective solidarity and struggle" (37). This category attempts to make the transition from 'accommodation' to 'transformation';
- *Transformative intellectuals*: those who publicly raise embarrassing questions by confronting orthodoxy and dogma and "are not easily co-opted by governments or corporations, and whose raison d'être is to represent all those people and issues that are routinely forgotten or swept under the rug" (Said, 1994: 9). This category aligns with the socially critical orientation as discussed above in relation to critical theory.

In Chapter 3.5, I refer to the work of Australian and UK educators and researchers who have incorporated critical theory in postgraduate distance education courses. In addition, I respond to those who are opposed to critical theory of education.

2.6 Critical ethnography and critical action research

In this section, I want to argue for a research methodology that is appropriate for the ontological and epistemological stance of critical realism. Crotty (1998: 3) regards methodology as amounting to setting out a plan of action behind the choice and use of particular research methods. I account for two methodologies, *critical ethnography* and *critical action research* that play a role in the critical tradition of educational research which Kincheloe (1991: 24) sees as seeking to empower educators to "transform the bureaucratisation which wipes out our memory of what educational institutions might be" (Chapter 1.6 and Chapter 3.6).

Lousley (1999) notes that ethnography is increasingly popular in educational research for its epistemological emphasis on approaching people's understandings and actions within their cultural or institutional context. This involves the informants and ethnographer/researcher in social interaction from which the ethnographer, by being reflexive, constructs the observations that become his or her data. Thus, reflexivity acknowledges the shared subjectivity in the research process in which the informants, as reciprocators rather than respondents, and the researcher are engaged in the co-construction of knowledge. One of the main consequences of being reflexive, with its postmodernist resonance, is epistemological since it challenges the knowledge base of the research by problematising the relationship between theories and reality[55]. The 'critical' qualifier of critical ethnography arises from the combination of ethnography with critical theory, the latter seeking "a theory which will simultaneously *explain* the social world, *criticise* it, and *empower*[56] its audience to overthrow it" (Fay, 1987: 23, original italics). Masemann (1992: 1) defines critical ethnography as:

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[55] Habermas (1972) argues that conventional Marxism cannot cope with one of the defining features that make us human. This is our ability, as individuals and communities, to reflect on our own history and to change the course of history using that reflection (Chapter1.7).

[56] To 'empower' means to give or delegate power or entrust power to, to give ability to, to enable or permit (Firth, 1996: 17). It is a process requiring an agent and someone, or something, to empower. In education, even the something (such as a context for empowerment) requires an agent, usually the teacher. Theoretically, Foucault's analysis of power raises questions about the possibility of empowering and refutes the idea that one can give power to another (Chapter 4.1.2).

> [S]tudies which use a basically anthropological, qualitative, participant-observer methodology but which rely for their theoretical formulation on a body of theory deriving from critical sociology and philosophy [that is, from critical theory].

Thus, critical ethnography has an explicit political emphasis. As Thomas (1982: 32) sees it, critical ethnography enables the researcher, as a "historically shaped human subject [to understand and critique his or her research through a closer examination of] not only the social world, but also the theories, conceptions and understandings of it".

Critical action research (also known by some researchers as emancipatory action research and by others as participatory action research[57]) is summarised by Tesch (1990: 49):

> Emancipatory action research is a form of self-reflective inquiry undertaken by participants in social situations in order to improve the rationality and justice of their own practices, their understanding of these practices, and the situations in which the practices are carried out.

Yet, this reference to emancipatory action research does not make sufficiently explicit that critical action research is *socially critical* (Chapter 3.5) in that it involves enlisting curriculum approaches "concerned with an informed commitment to improve society" (Greenall Gough & Robottom, 1993: 301). Such an education is not neutral but is "steeped in the politics of justice and equality" (Fagan, 1996: 136). Thus the key aims of critical action research are:

- At one level, it is to produce knowledge and action directly useful to a particular group of people;
- At a second level, it is to empower people so that they 'see through' the ways in which authorities monopolise the production and use of knowledge for the benefit of its participants[58] (Denzin & Lincoln. 1988: 269).

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[57] Although there are several different communities of *participatory action research* (PAR), and practitioners who represent their work in different ways, Fals-Borda and Rahman, 1991 (cited in Denzin & Lincoln, 1988: 269) argue:

> Those who have adopted PAR have tried to practice with a radical commitment that has gone beyond usual institutional boundaries [and] implies an effort on the part of the people to understand the role of knowledge as a significant instrument of power and control.

In this research account, I argue that my research has 'gone beyond usual institutional boundaries' in that the research is based on a *distance* education course (Chapter 3) *and* focuses on social and environmental issues that are increasingly marginalised in higher education (Chapter 1.6).

Critical action research, then, goes beyond the normal understanding of action research (Altrichter, *et al*, 1993; Elliott, 1991) which presents a limited critique of one's professional practice, simply reflecting on delivery and practice rather than questioning underlying values. In a *critical* enquiry of professional practice related to environmental education, empowerment arises through finding out how and why society operates as it does and how to be fully involved in its transformation to a socially and ecologically sustainable society. By combining intellectual discourse with practical action, critical action research has a particular value for environmental education research as it can enable people to "take sustainable social action for a 'better' environment" (Hillcoat, 1996). Thus, empowerment is not simply a state of mind, of making each person aware of another person's life situation since it also requires activism, an intention to go beyond consciousness-raising and to provide a climate for each person to break free of oppression (Malone, 1999).

Carr (1995: 115) takes Tesch's definition of critical action research further by arguing that it:

> [D]erives from a fundamental desire to be free of those constraints on human reason, constraints of authority, ignorance, custom, tradition, which impede the freedom of individuals to determine their purposes and actions on the basis of their own rational reflections. The critical or reconstructionist paradigm of research is the basis for a form of education based on social critique.

As Fien & Hillcoat (1996) explain, the goals of explanation, critique and empowerment requires that critical social science is:

- *Scientific,* in that it provides comprehensive explanations that are subject to public and empirical evidence;
- *Critical,* in that it unmasks and analyses the structures of oppression that hinder educational reform;
- *Practical,* in the sense of providing educators with the sorts of understanding, skill and motivation they need to bring about desired changes.

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[58] Freire (1972) coined the idea of *conscientisation* for this process of self-awareness through collective

This discussion about socially critical environmental education continues in Chapter 3 in relation to the educational principles underpinning the MA course. In connection with the reflexivity of the research process, see Chapter 5.3 and the evaluative discussions in Chapter 6.

2.7 Reflections

In this chapter, I have attempted to identify the key philosophical and methodological issues that help to position my research account within a consistent theoretical framework. These theoretical efforts are aimed at more than simply integrating the scientific knowledge gained about the ecosocial crisis into existing sociological frameworks, since I have consciously attempted to show how it is possible to transform social and political structures as a necessary process of moving towards a better understanding of human relationships with the biophysical world. I chose to begin by referring these issues to the debate on modernity and postmodernity since this debate has been one of the central controversies in social and political theory for almost two decades. However, I have argued that the distinction between modernism and postmodernism is not as clear-cut as the polarisation of the two discourses often portray. Instead of a radical break with modernism, I have suggested that postmodernism is what modernism has become; i.e. *late* rather than *post* modernity, and associated with a self-conscious feeling of uncertainty about social life (Chapter 4.5).

I have argued that debates about the relative merits of positivist and interpretivist paradigms of inquiry are really questions about whether we live in a *post*modern or merely a *late* modern world. In order to break away from the dualistic tendencies in these debates, I have argued for a critical realist philosophy based on Marx's recognition that humanity is involved dialectically with the complexities of the social and biophysical worlds. With respect to debates concerning modernism and postmodernism, critical realism opposes the reductionism and closure of some positivist forms of social science "evident in the determinism and flattening of difference common in some versions of grand narratives" (Sayer, 2000: 3). On the other hand, it rejects

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self-inquiry and reflection.

the defeatist and deconstructionist forms of postmodernism that assume, in the absence of certainty and closure, that it is not possible to make reliable knowledge claims.

It follows that critical realism is a hybrid philosophy for it enables me to avoid the *impasse* generated by the postmodernism/modernism, interpretivist/positivist debates. On the one hand, if I were to align my worldview with an interpretivist ontology grounded in the epistemology of interpretivism, I might not see the necessity for taking responsibility for environmental degradation and its underlying causal mechanisms and powers. On the other hand, were I to adopt a wholly realist ontology of positivism, I might believe that the world consists of objectively defined facts and the way the world 'works' the result of mechanical interactions whose descriptions are detached from human emotions and therefore value-free. Since I find neither of these standpoints philosophically acceptable, I favour the philosophy of critical realism and hold the view that humanity must come to terms with its obvious dwelling *in* nature through its biological origins. In this respect, I am in agreement with Benton (cited in Redclift and Benton, 1994: 41) who contends that human beings are "unavoidably organically embodied and ecologically embedded". I find it interesting that critical realism proposes that our structuring of the human social and biophysical worlds is through *interaction* at every level from the quantum to the quasar. We rely on a *dialectical relationship* with the biophysical world to avail ourselves more effectively of the meanings and values we attach to the concrete reality of that world.

Critical realism represents a much more subtle and complex view of society. In this view, humans are neither passive products of social structures nor entirely their creators but place themselves in an iterative and naturally reflexive feedback relationship to them. That is to say, that biophysical world exists independently of our conceptions of it, its causal properties and its ability to exert deterministic force on individuals, yet it is dependent on human actions for its reproduction. It is both real and transcendent.

Following my advocacy of critical realism, I associate my research with the empowering and emancipatory *praxis* of a critical theory of education (Kemmis, 1986; Young, 1990) in support of a socially critical pedagogy. I am then able to justify critical action research and critical

ethnography as the methodological approaches consistent with the critical realism and its concern for emancipatory education. The following three proposals ensue from my discussions in this chapter (see also Fig A, page 17) and guide the formulation of a strategy for researching my *praxis* and that of my students in Chapter 5:

1. That critical realism recognises the sheer indispensability of the non-human world to sustaining planetary life and the way my relationship to it governs my everyday life;
2. That critical realism is concerned with understanding the dialectical relationship between human social systems and the rest of the biophysical world;
3. That critical realism offers an appropriate philosophical perspective from which to evaluate a critical theory of environmental education through the learning processes of the *MA in Environmental Education* course.

CHAPTER 3

THE MA IN ENVIRONMENTAL EDUCATION:

process, pedagogy, and distance education

Not one class throughout my education to graduate level explored the serious environmental issues of sustainable living raised in the limits to growth report (Meadows, *et al*, 1972). Cross-curricular concerns effectively became ex-curricular.

(Charles Paxton, *MA in Environmental Education* student, Japan. Module AN6 assessment, July 1998)

3.1 Introduction

In the above quotation, Charles Paxton reflects on the failure of his formal education to foreground issues of great importance to the welfare of human social and non-human nature. In Chapter 1.3, I reflected on the reasons for this neglect and argued that social and ecological sustainability is best served by a critical theory of environmental education in the belief that education needs to be radical if it is not to prop up existing environmentally damaging socio-economic patterns of living. Following further emphasis on critical theory in Chapter 2, in this chapter I focus on how the rationale of the *MA in Environmental Education* course encourages such critical approaches. To do this, I will be examining the procedural and theoretical issues underpinning this course that will lead me to establishing the first two of four research questions.

Firstly, I analyse how learning experiences are constructed and presented in the texts of this distance education course in order to encourage students to develop a critical action research stance with respect to their professional practice as environmental educators. Secondly, I explore how these MA students generate their environmental knowledge creatively and dynamically through their interaction with the socio-economic and ecological conditions in which they work. This involves me in examining the extent to which the course texts are compatible with the ambitions, cultural norms and ecological imperatives experienced by my students. The relevance of these texts raises not only epistemological questions concerning meaning variance across cultures, over time and between languages but also ontological questions concerning the worldviews of my students. Thirdly, in reflecting on the 'effectiveness' of my role as an environmental educator/researcher involved in running a postgraduate distance education programme, I want to advance and evaluate a particular view of distance education that is incorporated in the *MA in Environmental Education* course[59]. This view contrasts sharply with the prevailing technical model that assumes distance education students receive 'expert' knowledge passively and delivered to them from outside their cultural contexts. Instead, it involves a consideration of the critical and dialogical model

[59] I shall be consistent in my use of the term *distance education* rather than 'distance learning' unless the latter term appears in a source reference.

of distance education that operationalises the course texts so that students progress their theoretical understanding and professional competence in response to environment and development problems. I describe how I establish and sustain critical and dialogical tutoring that sensitises my students to issues and concepts that are appropriate to their socio-cultural and political environments. I also explain and justify the need to socialise them into the course processes and pedagogy in support of their professional development. In Chapter 6, I evaluate several 'critical encounters' arising from my intervention in the students' learning that illustrate how this professional development is effected through the course processes and how I understand my role in these processes.

3.2 Structural and assessment principles

The *MA in Environmental Education* course is concerned to promote the continuing professional development of students through distance education and, in this respect, contributes to their lifelong learning needs. It is designed as an integrated programme of study for students whose professional interests include both formal and non-formal education in schools, colleges, universities, conservation organisations, NGOs, wildlife trusts, field studies centres and community organisations. Once students have embarked on the course, its modular structure (shown in Fig 3.1) permits them to 'step off' at designated points with interim awards. The award of a Postgraduate Certificate in Higher Education follows completion of the first three 'single' modules. The award of an Advanced Graduate Diploma follows completion of the first six 'single' modules. An *MA in Environmental Education* is awarded after completing a further six modules comprising a 'double' module followed by a 'quadruple' module representing the research dissertation.

There are six assessment points for the first six 'single' modules, one for the double module and one for the quadruple module. There are no formal examinations and students submit a written assignment for assessment after completion of a self-study programme based on each Study Guide. For each module, a Study Guide is sent to students at specified times together with a Research Diary, Student Handbook and selected papers. Although students are encouraged to submit coursework on specified dates, they can study at their own rate without

committing themselves to the whole programme. Most students enter the programme after enrolment in October each year. Communication is mainly by e-mail but also via telephone and fax. Group tutorial meetings occur on Saturday 'Day Schools' every 12 weeks for students who are able to travel to Nottingham. I rarely meet my more distant students.

The course has two main structural features. Firstly, it offers a widening perspective on environmental issues as the programme unfolds. It begins with a focus on the individual student's needs and aspirations before moving on to focus on community issues and then on to a global focus (Module AN7/8). However, there is overlap of all three perspectives throughout the programme as students engage with learning processes designed to develop their professional roles and community responsibilities against their 'home' background of ecological, development and educational issues. Secondly, the students are required to address the three strands of 'environment', 'inquiry' and 'education' throughout their learning. Specific reference to these strands arises in modules AN2 (environment/concept of nature), AN3 (inquiry/nature of knowledge) and AN4 (action research/methodology). The three integrating strands are simultaneously addressed in a double unit, AN7/AN8, which deepens the students' critical reflections with respect to global issues and this is followed by a four-module block earmarked for the dissertation which requires all three strands to be addressed. Charles Paxton (Japan; Module AN6 assessment) reflects on the significance for him of these three integrating themes in terms of his studies as a whole:

> *I have empowered myself through following all three strands of environment, enquiry and education ... by relating my studies to my experience of life and teaching. This growing knowledge and confidence ... has been tested in course-related dialogues, discussion with peers and students and, most importantly, in terms of productivity. I am becoming a more effective environmental educator in terms of the approach and conduct, material development and classroom delivery.*

Here, Charles is referring to his growing confidence in developing his own, and his students', action research capabilities in a challenging educational and cultural context in Japan (Chapter 6.6).

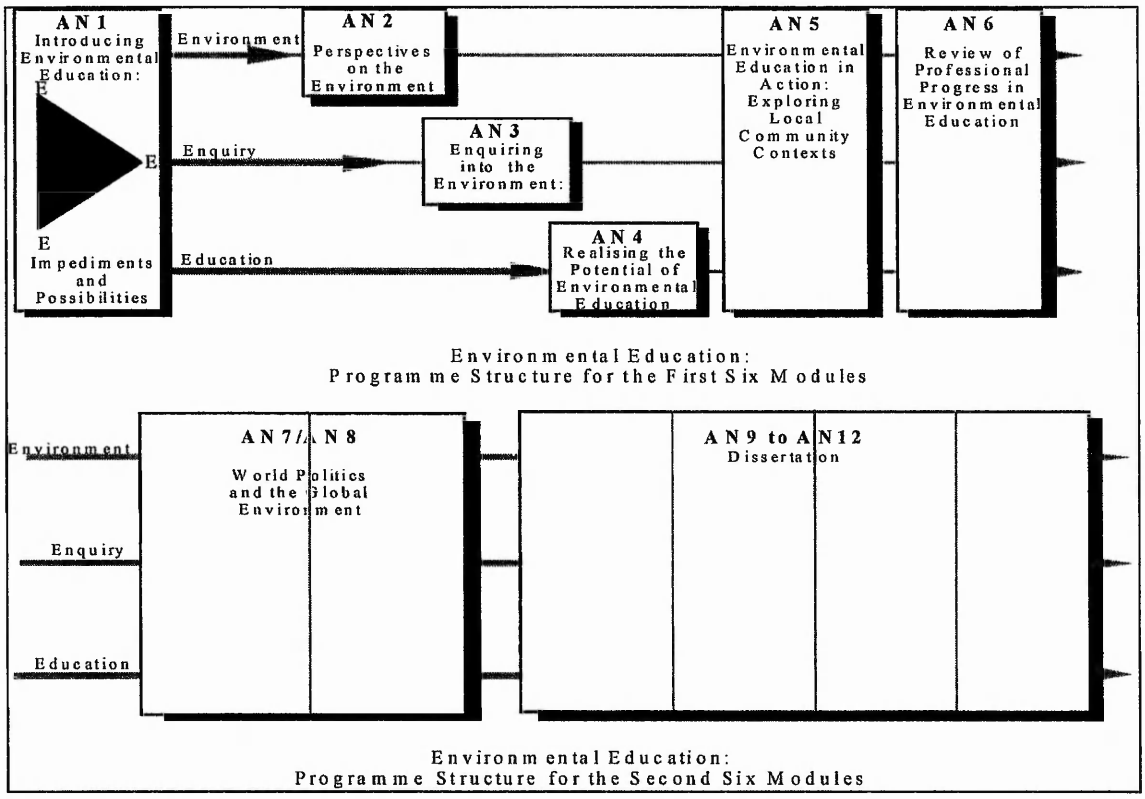

Fig 3.1 The modular structure of the MA in Environmental Education course

The extent to which the MA course empowers students is one of the key issues for investigation and is incorporated in the principal aim of the course:

> To facilitate the critical practice of environmental educators so that they become empowered to further the social conditions necessary for realising an ecologically and socially sustainable, democratic and just society.

By 'critical practice' I mean that students reflect analytically on their professional roles in order to gain insight into their own and other people's understanding of the socio-political origins of environmental issues with the aim of refining and evaluating educational frameworks that are effective in their different professional fields (Plant & Firth, 1994). To 'become empowered' requires that the MA students develop the confidence and means to move from insight to action in promoting socially critical form of environmental education, as I discuss in Section 3.5 and Chapter 6. To realise 'an ecologically and socially sustainable, democratic and just

society' is the overriding goal of a critical theory of environmental education (see Chapters 1.4, 1.5, and 2.5).

The monitoring of students through tutorial exchanges ensures that their responses to the course materials are meeting the aim of the course and that they are fulfilling the requirements of the formal assessment system. The examples shown in Fig 3.2 give some indication of how the assessment criteria[60] associated with each module endorse the twin goals of reflective practice and empowerment. The bold statements are general objectives of the course (Plant & Firth, 1995) coupled with a selected assessment criterion.

Develop students' powers of investigation and critical reflection.
Example assessment criterion: You are asked to be critically reflective in evaluating the views and opinions that you have recorded from your reading and any insights you have gained. (Notes made in the Research Diary, following by specified reading for Module AN1).
Develop students' action-oriented skills that enable them to shape the social uses of nature in ways that prefigure a future sustainable society.
Example assessment criterion: You are asked to reflect on your own values and understandings of nature. (Contribution to an essay on how, if at all, a student's environmental ethic has been influenced by the reading of selected texts, Module AN2).
Enhance the student's self-confidence in promoting well-considered arguments for implementing environmental education.
Example assessment criterion: You are asked to show the extent to which the report promotes a clearly argued strategy for EE in the organisation (In relation to a SWOT analysis and action plan for the student's organisation, Module AN4).
Assess the significance of a student's own cognitive and cultural development in relation to the environment and environmental education and to share these perspectives with others.
Example assessment criterion: You are asked to demonstrate how you establish and develop a dialogue related to an environmental issue with a person or persons outside of your professional life and responsibility (Related to a student's involvement in a small scale action research project, Module AN5).
Students to become aware of the significance of environmental education in the wider community and global context, especially with regard to moral dilemmas and other contentious issues arising from the impact of human activities.

[60] See Appendix C for the individual module assessment tasks and associated assessment criteria.

Example assessment criterion: You are asked to produce a portfolio including appropriate ideas and extracts as evidence of your critical involvement with the MA programme and the learning experiences it has provided to date (Contribution to the student's overview of how the learning processes have influenced a student's worldview Module AN6).
Improve the student's capacity to express their understanding of environmental issues through writing.
Example assessment criterion: You are asked to demonstrate to your peers and tutor your ability to communicate effectively and show personal engagement and commitment to the debate about environment and development issues. [This is a part requirement for an extended essay on global environment-development issues, Module AN7].
Develop a student's capacity for action inquiry through an extended dissertation that illuminates their professional ability to be proactive in fostering appropriate environmental education.
Example assessment criterion: You are asked to reflect on critically how personal experience is related to broader principles, to practice and to literature. [A demonstration of a student's capacity to base an extended piece of research following prior learning on the course and related to their professional context, Module AN9-12.]

Fig 3.2 Example assessment criteria

3.3 Priorities for distance education

3.3.1 Student-tutor dialogue

In addition to acting as course tutor, I am involved in the general management of the course procedures assisted by the normal university systems for ensuring quality of course provision, including the critical attention of an External Examiner. The breadth of my role leaves students with little choice but to consult with me on matters of course process and content[61], although each student is encouraged to confer with a 'critical friend' (Section 3.5). To my knowledge, this is the only distance education Masters programme in my university that manages to function on such limited resources for approximately 50 students[62]. This situation

[61] I am fortunate in working with course administrators whose skills, as 'go-betweens' are invaluable in helping me run a distance education course for more than 50 geographically scattered students.

[62] This reflects the marginal status of environmental education in my Faculty in spite of a consistently good level of recruitment to the *MA in Environmental Education* course. I also teach students on several different courses within the University and enjoy it greatly but I have come to know my distance education students professionally and personally as thoroughly as any of my University-based students. I think this has much to do with the liberal way I intervene in my students' learning and the 'open' nature of the course texts.

is recognised by John Huckle, the External Examiner for the course. In the 1999 External Examiner's Report, he writes (Huckle, 1999b):

> *It is to [the tutor's] great credit that he provides so much valuable support and guidance across 12 modules. My reading of his comments on students' assignments, his newsletters and course materials, together with my conversations with students, suggests that support and guidance are of a very high quality.*

My sensitivity to students' individual needs is set within the following contexts. Firstly, it is impossible to tutor the students as a single group since they are widely spread (Fig 3.3), have different professional needs and respond to varied ecological and cultural issues. For example, in the 1999 cohort there are five students based in England, one in Scotland, two in Canada, one in the USA, one in Australia, one in Malta, and one in Zanzibar, a 'mix' that makes me feel as though I am "choreographing a myriad of personal and collective movements in time-space" (Evans, 1989). Moreover, students are mainly attracted to the course because it offers a flexible approach to their professional needs that a traditional course may not offer so readily. For example, in response to the question whether the course texts encouraged her to reflect on the possibilities of social change in her professional context, Sarita Kendall (Colombia) replied: "*Very much so - and this is easily adapted to/acted on in my independent context, where there is constant room for change*" (Questionnaire response, November 1999; Appendix E).

Secondly, I am aware that distance education students take vacations at different times depending on their professional roles and locations. Moreover, those students who work in conservation, may be 'out in the field' and unable to contact me for long periods. Sarita Kendall (Colombia) notes that the course is "*extremely flexible, allowing me to fulfil a multitude of other commitments involving travelling, etc*" (Questionnaire response, November, 1999; Appendix E).

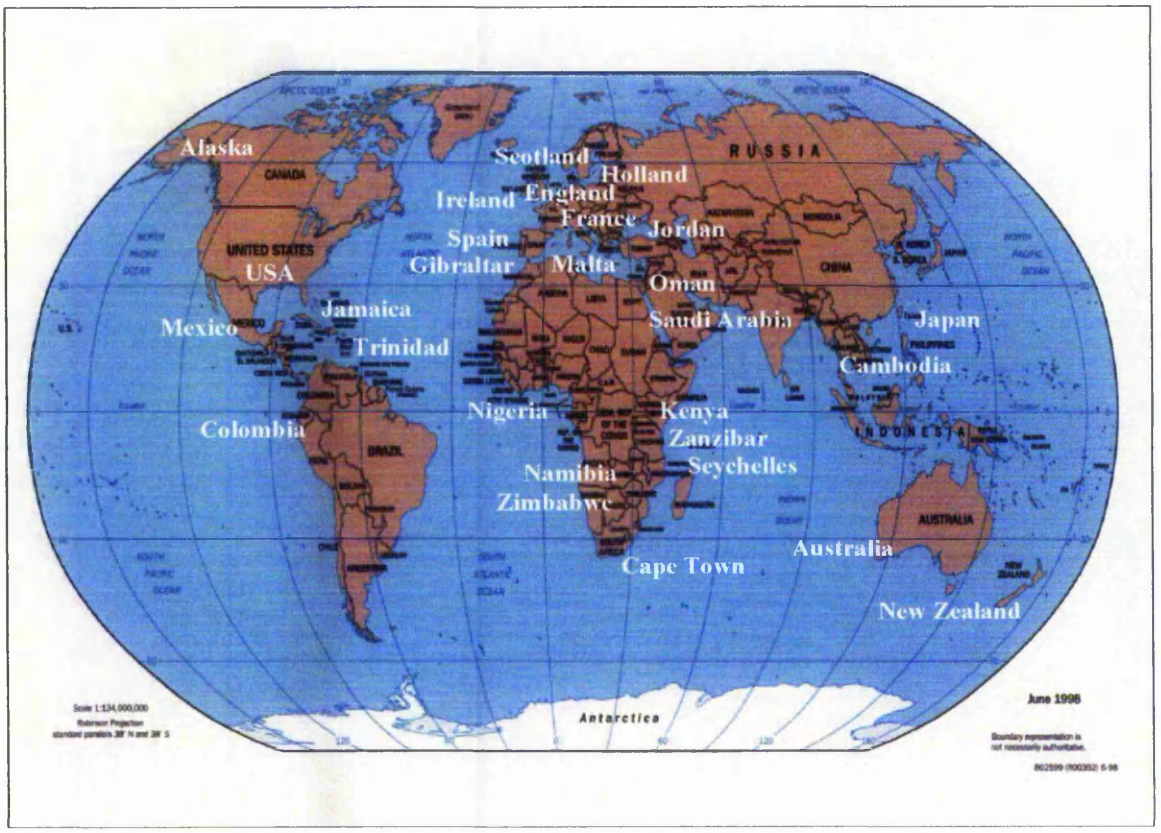

Fig 3.3 The location in Spring 2000 of the MA in Environmental Education students. Most students are isolated individuals except for those in Alaska (2), Saudi Arabia (2) and England (15). (Map adapted from an image accessed on 14/05/00)

Thirdly, to some extent students' individual time zones determine when and for what length of time I can conduct tutorials by phone, although most of the student-tutor dialogue is by email. Fourthly, postal services in some countries have proved slow and unreliable and it is not possible to guarantee prompt arrival of module study packs.

3.3.2 'Open' distance education texts[63]

My experience of chairing the validation of two MSc distance education courses in my university reveals that some distance educators are often more concerned with delivery

[63] By *texts*, I mean Study Guides and associated papers, records of email exchanges and letters. Since the inception of the course, I have been concerned with the 'authority' of these texts as perceived by my students (Section 3.5).

mechanisms, materials production, hardware, student contact procedures, and so on than with consideration of the ways their students go about their learning. Their interest in computer and telecommunications technology for course delivery can result in a "pre-digested and spoon-fed curriculum" (Harris, 1987) in which the course materials can be seen by students as *the* curriculum that they are expected to absorb without question. Such courses become constrained by what Giroux (1989) called the "technocratic rationality of education". Thus institutions extend their global reach for more students on the basis of "instructional industrialism" (Evans and Nation, 1989) supported by electronic tutoring that often 'decontextualises' students from their professional contexts. If distance education ignores the diversity of cultural and social identities of the participants, important learning outcomes may be lost for the sake of assessing easily measured and manipulated content. This is an issue which has particular significance for students in economically disadvantaged countries, i.e. those often referred to as 'the South' or 'Third world' who might be looking to benefit from distance education programmes sourced by higher education institutions in the economically advantaged, or 'developed', North. The distance educator's fascination for these new technologies is a particular example of what Arger (1987: 13) writes about in the promise and reality of distance education in the South:

> Distance education's promise of being able to provide a quality, cost-effective education for the masses [sic] of the third world remains unfulfilled because the modernisation paradigm on which it is based consists of false assumptions.

Whether electronically delivered or text-based, distance education materials may be seen by the students as manifestations of the power and autonomy of the tutor, a view that can have consequences for the tutor-student relationship. Lacking the immediacy of face-to-face engagement, these course materials can "regulate the forms of discourse in which the students can engage" (Evans & Nation, 1989). This happens, for example, when course tutors impose values and understanding from knowledge stocks that are unfamiliar to students in their own cultural contexts. Should distance education operate in this way, it can foreclose students' readiness to engage in dialogue with the tutor and perpetuate a tutor-centred approach to

learning in which students have little option but to conform to the tutor's norms and practices, and thereby be denied any consideration of their professional needs and cultural contexts[164].

On the other hand, an approach that is student-centred will view students as collaborative developers of their own learning and requires the written materials to be 'open'. By 'open' I mean that the materials encourage students to take advantage of the circumstances and events that are of significance to them, so avoiding 'tutor-proofing' their learning that forces them to respond to my expectations. For example, Sarita Kendall (Colombia; Module AN3, 1987) was faced with a module assessment that invited her to investigate the 'hegemonic hold' of post-industrial society on current social thought and its implications for the formulation of environmental education for local communities. In response, she protested that the indigenous Indian communities have little experience of what an industrial society is let alone a post-industrial one so what relevance had the question to her? However, she and I negotiated a form of assessment that met the criteria for module assessment but allowed her to explore the local impact of the international language of globalisation and development on the economic and social sustainability of forest people with whom she works. In this way it is possible for open texts to allow my students to bring their own practical experience of teaching to the interpretation of resources about teaching which may include challenging the authority of the materials and developing a critical stance. The implication of this is that some people, such as my Colombian student, may choose not to engage fully with a theoretical analysis that does not sit comfortably with the day-to-day demands on their practice (Thorpe, 1993). This view is endorsed by Evans and Nation's (1989: 248) claim that interactive, participatory and dialogic materials lessen the tension between wanting to develop students' capacity for critical reflection and the tendency to subjugate them by text and distance.

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[64] The approach of the *MA in Environmental Education* course differs sharply from the Research, Development, Diffusion, Adoption (RDDA) model where the focus is on the delivery of information from training institutions to practitioners about desired changes in practice (Altrichter, et al, 1993; Carr & Kemmis, 1983; Popkewitz, 1991; Robottom, 1994; Robottom & Hart, 1993b; Janse van Rensburg, 1994). The RDDA approach is based on assumptions that curriculum materials developed in one cultural context can be applied by educationalists as ready-made solutions to professional development in another cultural location. The separation of theory and practice in the RDDA approach means that practitioners do not have the power to appraise their theory and practice critically.

When Roger Firth and I prepared texts for the *MA in Environmental Education* course, we expected our students to be key agents in their own learning, and this makes the course fundamentally different from one in which the ownership of the knowledge is firmly in our hands. We believed that our students should participate in the construction and transformation of the study materials in ways that are meaningful in the particular socio-political contexts in which they live and work. As Wexler (1981: 289) asserts, "the open text ... is a process of activity rather than a dead object ... which is a form that teaches activity rather than passive consumption as its message." In this way, the course materials counters the tendency for technology to drive developments in distance education through rational and instrumental approaches that are liable to ignore the cultural context, learning styles and needs of students; and it allows the learners to generate their own questions and goals. Firth and I were aware that effective course design should be sensitive to the 'fit' between our materials and the cultural situations of the students. We believed that it is in this cultural context that distance education texts have relevance and survive if they relate to community interests, practical knowledge, and emphasise collectivism, group learning, dialogue, co-operation and agreed forms of knowledge (Guy, 1990). As Charles Paxton (Japan; questionnaire response, 1999; Appendix E) writes: *"It legitimises and redeems environmental education in my teaching context. It has forced an engagement with my contextual realities".*

The example shown in Fig 3.4 illustrates a way of operationalising the idea of the 'open text'. It is an extract from the Study Guide for Module AN2: *Perspectives on the Environment: Differing Ideologies and Utopias* (Fig 3.1*)*, which explores the changing relationship between humanity and nature over time. It centres on students' understanding of, and relationship to, nature as a basis for framing their 'environmental ethic' in an early attempt to provide grounds for a professional purpose to their studies. The text in this example is 'open' in that, by responding to the ideas presented in their prior reading, the students are encouraged to engage actively with the text. This example acknowledges that some views of nature may be markedly different from the dominant Western view that is apt to see nature and culture as independent rather than interdependent as is the 'view' of some indigenous peoples (Milton, 1996). I question the meaning of nature in this example, not to explore its culturally determined meaning in any depth, but to underline the need for distance education tutors to be aware of

the differentiation of cultural perceptions of such arguably well-understood Western notions as 'nature'. Such concepts and understanding may be unwittingly or insensitively written into distance education materials on the assumption they are cross-culturally invariant, that the text as established by authors in one cultural context is automatically relevant to another. These tensions arise in the *MA in Environmental Education* programme which is being accessed by students in Southern and East Africa, and other 'developing' countries, where it is necessary to encourage students to reflect on their particular social and colonial history (Chapter 6).

Student Activity: Thinking About YOUR Environmental Ethic
At this stage, we would like you to begin to consider in detail how you see your relationshi with nature. Describe in whatever way you think appropriate how you value nature. On suggestion would be to outline some practical ways in which you relate and respond t nature and then to consider how these illustrations can help to formulate the beginning o your own environmental ethics theory. From this first draft of your own environmental ethics theory, can you begin to pinpoint th main principles/considerations you might want to use in some more general theory o environmental ethics with other members of the MA group?

Fig 3.4 Instructions for drafting an environmental ethic

3.4 Socialising my MA students

I provide a learning environment that gives students a sense of 'belonging' to the course and enables them to make connections with and reflect on their professional and socio-cultural contexts as they engage with the course materials. To facilitate this *social* climate, I need to know what they want to achieve for themselves, for others and for the environment in joining the course. I want to know how they relate to the particular cultural and social circumstances in which they live. What social and environmental problems do they and their community experience? What expectations do they have of the MA course? In addition, how they see me as course director, and what role they want me to play as course tutor?

I have three main ways of bringing students 'inside' the MA course and giving them a sense of social belonging even though some of them choose to remain detached and isolated from any

attempt to bring them 'inside' the course. Firstly, at the start of the course I ask them to identify a 'critical friend', a person with whom they can confer for comment on their work from time to time and who shares with them their aspirations for professional development and for a critical understanding of environmental education. There is an expectation that the critical friend will submit a commentary on the MA students' coursework from time to time. Secondly, I invite students to Nottingham to attend a 'day school' every three-months to meet their peer group and the tutors. Thirdly, intermittently I send them a newsletter, 'EarthLink', to help them keep in touch with each other as well as updating them on, for example, course administration details, course content, resources and literature (Appendix B).

The process of beginning to establish a tutor-student dialogue, as well as ensuring that students find an appropriate 'academic' style for their written work, begins with the first formal assignment (Fig 3.1, Module AN1) which asks them to write an 'ecological autobiography' (Fig 3.5) and invites them to answer questions such as: How did I become interested in environmental issues? What do these recollections mean in my current practice? How might I develop my practice differently? Each member of the peer group receives the collected autobiographies to encourage them to make contact with their peers and begin the process of sharing their learning experiences throughout the course. Students value the ecological autobiography for different reasons. For example, Irena Popiolek (UK; Module AN3 assignment, March 1996) writes:

> *I first became interested in this area of research [the student used a similar technique with her class of junior children] when asked to write my own ecological autobiography as an introduction to the first module of the MA course in Environmental Education. I found it a rewarding exercise, enabling me to reflect on the experiences that have helped me to better understand my human-Earth relationship.*

In addition, in recognising the value of her own childhood experiences spent close to natural surroundings, Gillian Traverse (UK; Dissertation, July 1999) writes:

> *It remains one of the priorities of the EE team [she works as an environmental educator at The Wilderness Centre in Gloucestershire] to provide for children and young people essential environmental experiences of the natural world.*

Module AN1: Coursework: an ecological autobiography
As a way of exploring your own understanding of environmental interests and concerns, and as a way of introducing yourself to others, write a short (2 to 3 pages) 'ecological autobiography'. This should include: 1. Your name and address and telephone number; and a recent photograph. 2. A brief history of yourself which attempts to capture the experiences that you think have shaped your present concern for the environment; and why you have enrolled on the MA programme. 3. Your present situation: e.g. personal, work, other interests. 4. A justification of your present value-position in terms of the environment, environment-development issues and environmental education. 5. Your expectations of the programme.

Fig 3.5 Student guidance for writing an ecological autobiography

The example emails shown in Fig 3.6 captures the mood of the students' exchanges that appear to reflect their sense of social identity with the course.

A convivial response to my feedback: **Email from MA student Mike Relf, Jordan, February 2, 1999.**
Hi Malcolm, Thanks very much for the feedback from AN5 and 6. I enjoyed reading it and I have taken note of the comments criticisms etc. I would like to comment on a couple of the issues raised in your feedback. Firstly, you are very perceptive. ... Yes both were completed as if I were 'rushing to complete a race', though this approach is not ideal, it is the only one I manage to implement, as time this end is incredibly short so I only have very small windows of opportunity to complete assignments. This often means, as you rightly point out, that I do not participate in sufficient reflection, believe me I would like to do more! Secondly, I do enjoy the more 'academic' and less practical aspects of the course, as is apparent in my writing.
A more formal response to my feedback: **Email from student Karen Paul, Trinidad, January 25, 1999.**
Hello Malcolm, Thank you for the feedback you gave on module AN1. I shall try to bear your comments in mind as I write the paper for AN2. I have one question: should my style for the section about my environmental ethic be impersonal, staying away from excessive use of the first person, or is use of the first person acceptable? I was not sure last time and opted for the third person as much as possible.
On occasion, students are simply informative: **Email from student Paul Linares, Gibraltar, July 1998.**

Dear Malcolm,
I have been in touch with Peter Baldwin [an MA student in Spain]. In fact he lives only about 30 miles away and he visited me because he was having problems with AN3. We had a long chat and I lent him my essay to give him some idea of what you were looking for. Since then we met again and he told me he had done AN3. After that he has been trying to contact me but, unfortunately, due to the fact that I spend all of my weekend at the conservation park.

What little time is left over after work and my GONHS [Gibraltar Ornithological and Natural History Society] commitments I devote to my family. We have not met since.

And others are anxious:
Email from student Heather Willard, Alaska, March 27, 2000

Hi Malcolm,
It has been a crazy and weird week up here in Wha-Ti. Wha-Ti had a winter carnival last weekend. Unfortunately, the fun did not stop for some parents and they continued to drink during the week. To say the least, this was the hardest week for us and for the kids in school so far this year.

Aside from that, our monitor died on Sunday night and we have shipped it thousands of kilometres away to British Columbia where it is being fixed under warranty. So we cannot receive email at home or access our emails on hard drive until the monitor returns to Wha-Ti.

And others are dismayed:
Email from overseas student, March 23, 2000

I have just received your report on my work for AN1. Thanks. I have also received the autobiographies which I found extremely interesting and supportive.

Regarding AN2, as much as I hate to fall back on my work, I've just experienced my husband walking out on the family and requesting a separation. So I haven't progressed much in my work over the past two weeks. Will try my best to catch up and utilise my studies as healing therapy!

While others are occasionally fractious:
Letter from student Laurence Speight, Cambodia, February 1998.

Dear Mr Plant,
I am annoyed and disappointed that I have not received Module 2. What is the department's policy on the mailing of modules? Distance education courses are supposed to meet the needs of their students. This course is far from meeting my needs in terms of the receipt of the modules.

[Later, after my reply, he writes:]
Further to my letter of the 1 February, I do appreciate that your department has to meet the needs of the various students and I am sure it is doing its best in this regard.

My administrators share my view that informal yet efficient communication is necessary

to establish a student's sense of social belonging to the course. **Email from Natalie Seebaransingh, Course Administrator to student Andrew Speight, Cambodia, February 9, 1999.**
Hello Amanda, I hope this note reaches you in good spirits. I just wanted to know how you were getting along? Also I am off on vacation to my home in Trinidad and Tobago for two weeks on the 15th. If there is anything urgent you can contact Malcolm or email me, and my temping replacement will print it out for him. Continue on this progressive note and I will be in touch when I return. Good Luck. Natalie

Fig 3.6 Sample emails from MA in Environmental Education students

The above extracts disclose the social dimension of my role as teacher, facilitator and confidant for students on this course. Peter Baldwin (Spain; Questionnaire response, July 1999) reflects on the social significance to him of this way of engaging with the MA students:

> *Throughout the course [Malcolm Plant] was extremely thorough and nothing was too much trouble ... and I have no doubt that every word written by every student is read and analysed in the context of the assignment. ... The packaging of each module, the punctuality of its arrival, and the prompt return of the marked assignments [are] impressive.*

Charles Paxton (Japan; Module AN6 assessment, January 1998) endorses Baldwin's judgement of the course texts and tutorial exchanges with particular reference to the first module (Fig 3.1):

> *The work has been very appropriate, formative and informative. It was also highly enjoyable. It is exciting to be on this programme. I have already learned more than I bargained for ... The best aspects ... were the ones that shaped and channelled my viewpoint ... I would recommend no changes to the structure or organisation of the [first] module. It is well-conceived and thoughtfully laid out in a fashion that gave me confidence in its integrity and sense of direction.*

Sarita Kendall (Colombia) echoes these sentiments about the *social* support I give students:

> *The support was excellent all along - fast, personal and imaginative in trying to understand my world.*

These responses to the course processes from the students' perspectives point to the fundamentally different nature of my teaching on the MA course compared with the assumptions of the 'industrial' metaphor for distance education to which I have referred in Section 3.3.2 above.

3.5 Implementing a socially critical approach to EE

The learning processes of the MA course are not intended, primarily, to help my students resolve particular environmental problems but, rather, to help them understand how these problems are created, legitimised and contested with reference to their socio-economic contexts and professional needs. However, given the tendency for education at all levels to reflect a business management model that is concerned primarily with "compliant action" (Smyth, 1989: 210; see also Chapter 1.6), this task is not easy. In my attempts to implement a socially critical approach to teaching, I reject an instrumental view of education. I do not believe that if my students have a proper knowledge base, if my tuition is rigorous, if they listen to me as the 'expert', and if pay heed to the content of the course rather than its process, they will be effective through their own actions in helping to achieve ecological and social sustainability. As Greene (1986: 427) argues, instrumental views such as these overlook concerns that we live in a world in which there are "unwarranted inequities, shattered communities [and] unfulfilled lives". It is precisely the recognition of these concerns that underscores the critical pedagogy of the *MA in Environmental Education* course. By ensuring that they problematise their teaching, I hope that students will work actively against what Greene (1973, cited in Smyth, 1989: 211) calls "an unthinking submergence in the social reality that prevails". If education is to reflect "*praxis*-like" terms (Lather, 1986), if it is to assent to a dialectical process, then it follows that it has to reject dominant, hierarchical and instrumentalist approaches. Significantly, this rejection must be more inclusive of "oppositional viewpoints" about what constitutes teaching and learning (Smyth, 1989: 212). If I am to be 'oppositional' and, in turn, to propose that students confront rationalist trends in education, then I am opposed to the input-output view of what education means. Unfortunately, such ideals have to compete not only with government-inspired supervision in the form of performance indicators and appraisal schemes that currently proliferate in higher

education (Chapter 1.6), but also it has to compete with the hold on people of consumer-oriented lifestyles, and the hegemonic influence of global capitalism. It follows that courses such as the *MA in Environmental Education* are, routinely, likely to be subjected to increasing pressure to homogenise so that they fit the mould of what is pronounced as being efficient, effective and compliant - and, as a consequence, to deny students the rich and relevant teaching and learning opportunities that environmental education offers.

A socially critical theory of environmental education does not have the backing of some environmental educators (Firth, 1995). In relation to critical thought generally, Shor (1980) sees the major impediment as the comforting and soothing nature of everyday life that militates against people asking searching questions about how and why things come to be the way they are. In Shor's words (*ibid*: 47):

> Most people are alienated from their own conceptual habits of mind. How come? Why don't masses of people engage in critical reflection? Why isn't introspection an habitual feature of life? What prevents popular awareness of how the whole system operates, and which alternatives would best suit human needs?

In formulating his own reply to these questions, Shor (*ibid*) argues that critical thought is difficult to enact for four reasons:

- *Reification* – accepting the situation for what it is – spectator approach to life;
- *Beating the system* – remaining frozen in the system while fighting for illusory power;
- *Pre-scientific thinking* – ascribing causes to human nature;
- *Mystification* – blaming individuals for their failure in society which allegedly offers everyone opportunity.

In acknowledging these four impediments to emancipatory teaching, I think three issues need to be addressed here. Firstly, the adjective 'critical' carries a negative connotation conveying a sense that 'critical' action research springs essentially from the suppression of generalisable interests that is clearly at odds with the normative intentions of critical theory as Habermas understands it (Chapter 2.5). Secondly, the overt political role of producing transformative intellectuals able to challenge oppressive social structures and bring about egalitarian social

change demands a high level of maturity, confidence and resilience on the part of its exponents. Thirdly, Walker (1997) is concerned that a socially critical theory of education fails to give practitioners "an implementation theory [since] it *de facto* denies their own practical knowledge". This means that the proponents of a socially critical theory *expect* practitioners to reflect critically on their own practice so that "they adopt values of a more critical kind" (*ibid*). Robottom (1994: 65) provides evidence from the ENSI (Environment and Schools Initiative) project that supports Walker's view. He found that the critical form of environmental education embodied in the aims of the ENSI project (Laine & Posh, 1991) was difficult to implement in participating schools; and that participants and teachers would be unlikely to "engage the individuals and groups whose actions would threaten the environment". Instead, Robinson (1993, cited in Walker, 1997) argues that a more adequate curriculum theory is a problem-based methodology that accommodates the different theories held by practitioners, including the socially critical perspective, and, as a result, can provide a means to realise solutions to practitioners' problems. However, although I accept that a socially critical environmental education poses particular (but necessary) challenges for educators, my main unease about a problem-based approach to environmental education is that it might merely sanction technical fix solutions that do little to challenge the root socio-political origins of the ecosocial crisis. Whilst a problem-based approach would fit well with the model of education *about* and *through* the environment, it is not consistent with the emancipatory processes of education *for* the environment expressed as a socially critical theory of education[65]. The problem with Walker's analysis of impediments to socially critical approaches to environmental education is that Walker fails to recognise that critical education

[65] First described in the 1974 Schools Council Project *Project Environment* (Palmer and Neal, 1994) and later related to contemporary social ideologies by Huckle (1983), this model identifies three approaches to environmental education. These are education *about*, *through* and *for* the environment. Prominence to the model appears in various international governmental conferences, including UNESCO (1977), UNESCO/UNEP (1976), WCED (1987), IUCN, UNEP and WWF (1992), and UNCED (1992). Briefly, education *about* the environment is concerned to enable students to understand natural and human systems and their interaction and to appreciate cultural, political, economic, aesthetic, and spiritual perspectives on the environment. Education *through* the environment uses the environment as a resource for learning and to develop a range of skills and competencies. However, education *for* the environment encourages students to take personal responsibility for caring and protecting the environment. It involves nurturing concern for the quality of life of people and nature now and in the future and adopting a critical stance to the socio-economic and political conditions that lead to environmental degradation and social injustice.

is rooted in notions of *praxis* and communicative action as I argued in Chapters 1.3 and 2.5. That is that critical pedagogy is not simply being critical of social practices that lead to environmental degradation but seeks to engage dialectically with social forces as I explained in Chapter 2.5. Prevailing educational systems tend to shut out those teaching strategies that encourage personal experience and dynamic learning; they inhibit the attainment of the outcomes of informed and politically active citizenry since education, as an agent of economic and cultural reproduction, serves the needs of the dominant model in an uncritical way. Indeed, in relation to schools, Huckle (1991: 7) argues that:

> In many lessons, environmental issues are presented as asocial or universal problems. They are attributed to such problems as overpopulation, resource scarcity, inappropriate technology, overproduction and exploitative values, but these factors are not explored in a way that relates them to underlying social forces. The relationship between people and the environment is not taught in a context of economic, political, and cultural systems, with the result that pupils remain largely impotent as agents of social and environmental change.

Huckle's advocacy of socially critical environmental education is not widely favoured as an educational approach, but it has its international devotees. In Southern Africa, its main advocate is Janse van Rensburg (1994). In Australia, following collaboration between Griffith and Deakin universities through the Griffith Environmental Education Project, it has the support of Robottom & Hart (1993a/b)[66], Fien (1993a/b/c, 1995: 23, 1997), Greenall Gough & Robottom (1993), Malone (1999). In the UK, Huckle (1991, 1993, 1996a/b), Firth (1995), Plant & Firth (1994), Plant (1998b) are its main candidates. In the UK, the World Wide Fund for Nature supported the development of more critical forms of teacher education that materialised as the *Reaching Out: Education for Sustainability* outreach programme (Huckle, *et al*, 1995b). This programme, like the Australian programme, derives its rationale from critical theory and critical action research. In addition to the *MA in Environmental Education* course at Nottingham Trent University for which I am responsible, the *MSc in Environmental and Development Education* run by South Bank University London incorporates some aspects of critical theory though not as determinedly as in the former course.

[66] Hart is a Canadian environmental educator.

There has been criticism of socially critical forms of environmental education. For example, Jickling & Spork (1998) argue that it seeks to indoctrinate students rather than educate them; that it is a slogan, preventing educators themselves from thinking; that it is too anthropocentric in outlook. In a robust analysis of these criticisms, Fien (2000: 179-191) argues that Jickling & Spork neglect to consider several philosophical and pedagogical aspects of this approach to environmental education, including their failure to declare their own ideological dispositions. Fien (*ibid*) argues that they are guilty of three main assumptions or misinterpretations of education for the environment as originally expounded in Fien (1993a). In the first place, Fien (*ibid*: 181) argues that Jickling & Spork see education for the environment as 'anti-development' and therefore ideologically biased. However, in Fien's (1993a) paper there are several examples of pedagogical strategies, such as handling controversial issues and community problem-solving, that encourage teachers to encourage democratic debate. Secondly, Fien (2000: 182) argues that Jickling and Spork did not examine the underlying philosophy and pedagogy of education for the environment that shows it to be an educationally-oriented approach rather than an approach specifically oriented towards the achievement of a 'red-green' society. Thirdly, in their assumption that education for the environment does *not* mean the promotion of individual thinking and the capacity for decision-making, Jickling & Spork (1998) conclude that education for the environment can only mean indoctrination. As Fien (2000: 183) points out, this assumption neglects "the extensive range of material on the democratic nature of critical pedagogy in writings on education for the environment". However, despite Fien's robust response to Jickling & Spork, like Walker he neglects to remind them that a socially critical knowledge is practical, action-oriented knowledge that enlightens and therefore, catalyses social and political change (Green, 1990 cited in Robottom & Hart, 1993a: 11; Chapter 2.5).

In seeking a closure to this discussion about the challenges to implementing a socially critical theory of education, I want to refer to Elliott's (1993) four basic qualities of a 'critical' education. These are *empowerment*, *critical reflective thought*, *empathy* and *discrimination* but, with reference to Huckle (1999a), to stress that Elliott does not go far enough in advocating an emancipatory and socially critical approach to environmental education.

Firstly, Elliott (1993: 23) argues for students' 'cognitive initiative', that is their capacity to initiate a course of intelligent action on the understanding that they can do something to improve that situation. I take this to be Elliott's quality of *empowerment* in that he argues that the person who persists in the belief that they have no power to change things for the better cannot accept responsibility for the environment[67]. However, Huckle's (1999a: 40) view is that 'to improve a situation' students must be involved in "real or simulated involvement with democracy". Thus, for example, Tim Cox (UK; MA Dissertation, July 1998) refers to an evolving confidence in his role as environmental educator in a conservation organisation as follows:

> *It has taken the entire MA programme not only to give me the confidence to explain the importance of my own work but also to recognise my own contribution as an individual to [democratic] society.*

Secondly, Elliott argues for the enhancement of students' 'diagnostic capacity' (Elliott, 1993), that is their ability to discern and discriminate the practically relevant dimensions of a particular situation so that they try to understand themselves and others, to self-monitor their own actions and their consequences in the environment, reflexively[68]. I take this self-monitoring to be Elliott's quality of *critical reflective thought*. However, Huckle (1997; 1999a) argues that such reflexive self-monitoring needs to be transformative rather than reproductive (Chapter 1.7). Instead of education merely being an agent of economic and cultural reproduction that largely serves the needs of the dominant capitalist model in an uncritical way, it needs to evaluate critically the policies and actions of those seeking to use their economic, political and cultural power to ride roughshod over those wanting to develop sustainable livelihoods. For example, Susan Tyzak (UK; Module AN7/8 assessment, December 1996) reflects on how a reflexive approach to her teaching enabled her to see the advantage of her pupils acquiring the skills of critical analysis and decision-making since it will

[67] I have explored the meaning of *empowerment* in relation to critical theory in Chapter 2.5.
[68] I first highlighted the need for transformative rather than reproductive educational processes when discussing significant life experiences in Chapter 1.7.

Develop values which enable them not only to make decisions about their behaviour as individuals, which I believe is important, but also to take mindful action politically and in their local community.

Thirdly, students should be able to demonstrate a capacity to identify with the thoughts and feelings of others implicated in a particular situation, what Elliott calls the quality of *empathy*. For Huckle (1999a: 42) this is not simply a passive act of recognising others' misfortune but requires educated citizens who will ensure that the common interest in sustainability, human rights and equity finds institutional expression. For example, Charles Paxton (Japan; Module AN5 assessment, February 1997) records his empathy with his Japanese students' learning as they make progress on establishing the Hosei Island Trust (HIT)[69].

My research has become more overt, and the students conscious participants in my research process. My studies must support, not interfere. The HIT project is so precious to students.

Fourthly, students develop the quality of *discrimination*. In developing their discriminatory powers, students should engage in the continuing debate about contested meanings, crises of representation and questioning the authority of the 'facts'. However, Huckle (1999a) argues that there will be little progress towards education for sustainability unless students expose the contradiction, ideology and politics of the dominant discourse[70] of sustainable development. The quality of discrimination is illustrated by Sarita Kendall (Colombia; MA Dissertation, July 1998) who reflects on the challenges she faces in encouraging local Amazonian communities to use natural resources sustainably:

These communities are under considerable pressure to adapt to external economic forces whilst striving to preserve their livelihoods and traditions. Of particular interest is the way the international language of development has filtered down to these remote communities from international donor agencies. When we first arrived in the community, the Indians said we did not need to worry about protecting the dolphins because they looked after them. But

[69] The Hosei Island Trust (HIT) is a conservation organisation formed in 1996 to enable Japanese students to participate in conservation activities. Charles' MA dissertation evaluated his role in this project (Chapter 6.6).

[70] I am using *discourse* here in the sense used by deconstructors who, in relying on Foucault's ideas (Chapter 4.2), take the term to mean "a combination of both practice and the thoughts, ideas, and assumptions that shape such practice" (Crewe & Harrison, 1998: 17).

gradually they have agreed that we too have something to offer when it comes to knowledge and conservation.

I conclude that Huckle's transformative vision of education provides the basic indicators with which to assess the development of my students' critical capacities to bring about social change within their individual cultural contexts.

3.6 Reflections

The discussion in this chapter leads me to the following proposals:

1. That face-to-face contact with students is not a necessary condition for effective collaborative learning to take place, and that 'open' course texts allows me considerable scope to respond to students' written pieces on an individual basis as they work through the modules;
2. That by working dialogically with students in the important area of politicising environmental education, i.e. encouraging learning that is 'socially critical', I am able to develop their awareness of the social forces that hamper attempts to engage critically with environmental issues and the opportunities presented to them in their particular cultural contexts;
3. That I take a 'scholarly risk' in encouraging students to teach 'against the grain' since it involves them in emancipatory learning that may be in conflict with the dominant government policy that seeks to 'teacher-proof' the curriculum.

In Chapter 6, I subject these three assumptions to greater scrutiny by examining several 'critical encounters' arising from my tutoring of the course. The issues I have addressed in this chapter give rise to the following two research questions to guide this examination:

1. To what extent does a distance education course written and taught in a Western country stimulate a student's critical reflection about ecological and professional issues that are of significance to them in their particular socio-cultural context? Crucially, what are the goals and processes of distance education in a world that increasingly reconfigures space and time?

2. What critical insights does the research reveal about my role as an environmental educator/researcher in higher education? For example, to what extent am I able to empower my students to bring about social change through a socially critical approach to environmental education? Moreover, in what ways am I empowered in this process?

The first question follows from the critical reflections in this chapter on the processes of the MA course, including the 'open' nature of the course texts and the expectation that students develop critical perspectives on their educational roles. The second question, overlapping the first, is concerned to evaluate further the significance of my role in the MA course processes. At the end of Chapter 4, I derive two additional research questions from my reflections on the issues raised in that chapter.

CHAPTER 4

MA IN ENVIRONMENTAL EDUCATION COURSE

Contested knowledge: issues of power and complexity

[Discourses] systematically form the object of which they speak ...
[they] are not about objects; they constitute them.
(Foucault, 1974: 49)

4.1 Introduction

4.1.1 Contested concepts

The substantive 'content' of the *MA in Environmental Education* course as opposed to its critical action research learning processes, centres on six principal concepts. The concepts are:

- Development (Section 4.3);
- Sustainable development (Section 4.4);
- Globalisation and reflexive modernisation (Section 4.5);
- Environmentalism (Section 4.6);
- Nature (Section 4.7).

In debates about how human society should review its relationship to the biophysical world, there is considerable disagreement regarding the meaning of these concepts. The contentions arise not simply because the meanings are ambiguous but because they are not "'already there' in existence in a wholly determinate form, prior to our talk about them" (Shotter, 1993: 37). Thus, Foucault's observation above is important when considering these meanings since people can no longer assume that they know what the 'it' is that is represented by the concept they are talking about. That is, the arguments involved are not just to do with matters of the proper use of language but with the authority of language that brings what exists into the human world of 'knowing'. This ontological and epistemological stance is not at variance with the critical realist philosophy that assumes language can apprehend for us a 'knowable' objective reality (Chapter 2.4). So it is in this critical realist frame of mind that I embark on the discussion in this chapter since my intention is to expose the difficulties involved in giving meaning to these six concepts[71] as well as illustrating how these concepts are presented for critical appraisal in students' learning. This approach will lead not to condemning the lack of precision with regard to giving meaning to these concepts, but to accepting that human dealings with the biophysical world is troubled with complexity and uncertainty that needs to be the proper focus of a critical pedagogy of environmental education.

[71] Appendix A presents a summary of content of each module of the *MA in Environmental Education* course where students meet these five concepts for critical examination.

Bourke & Meppem (2000: 299) note one of the difficulties for educators and researchers with regard to understanding what to do about the ecosocial crisis. Their contention is that the prevailing environmental ideology[72] is an attempt to transcend the "tragic narrative of environmental disaster [by rewriting] the environmental epoch as an epic tale of human recovery and resolution with nature". What they mean by this is that concepts such as sustainable development and globalisation have acquired a status that "evoke totalising images of consensus, unity and purpose" (*ibid*). Nonetheless, there is not just one environmental ideology but several competing ones, only some of which seek social and political change as required of a critical theory of environmental education (Section 4.5 in this chapter). These differing ideologies present two main contradictions for environmental educators attempting to present coherent programmes.

Firstly, there is the contradiction that exists between the consensus that these concepts appear to suggest about the human relationship to the rest of the biophysical world, and the different socially constructed interpretations of these concepts. Contested are the nature and seriousness of environmental threats, the dynamics underlying them, the priority accorded one issue versus another, and how to restructure the social conditions responsible for precipitating these threats. Thus, 'sustainable development' (Chapter 1.5) evokes a sense that this particular response to the ecosocial crisis will help to improve humanity's relationship to human social and non-human nature. However, the consensus it brings to mind is a myth for there is what Bourke & Meppem (*ibid*) call a "fiction of consent" as various advocates of sustainable development, and other totalising concepts, present what is apparently a consensus view as to what these concepts mean for concerted action. The second contradiction is that knowledge production coming from the disciplines, principally from science, is not showing how these concepts offer new insights regarding the origins of, and solutions to, the ecosocial crisis. The

[72] I use *ideology* here, rather than 'discourse' in order to stress three distinctive features of environmental ideology: its legitimation through group action and its social acceptance; its links with people holding power, i.e. with politics; and its style of argument, i.e. it is usually associated with a heightened form of rhetoric (Apple, 1979:21). 'Discourse', in the sense used by deconstructors such as Foucault, means "a combination of both practice and the thoughts, ideas, and assumptions that shape such practice" (Crewe & Harrison, 1998: 17). This term is better used, I believe, in the analysis of texts and narratives.

role of science as the main provider of the 'truth' about the ecosocial crisis remains problematic, and I refer to this concern in Section 4.1.3, below.

4.1.2 Empowerment and power

Issues of power and complexity are central to students' engagement with the MA course materials, and they have particular implications for how students respond to the ecosocial crisis through their professional practice. The issue of 'power' is explicit in critical theory's concern with how the production of knowledge is socially and historically determined. However, critical theory refers to 'power' not in the sense of exerting power over others, that is, to oppress those who are not powerful, but in the sense that power is transformative or 'empowering' (Giddens, 1993: 109). I have referred to the use of this term in arguing that the intention of critical action research is to *empower* people to bring about personal and social change (Chapters 2.3.3 and 2.4.2). That is, "the transformative capacity of human agency is the capability of the actor to intervene in a series of events so as to alter their course" (*ibid*: 110). On the other hand, Foucault (1977) is almost exclusively concerned with 'power' in the sense of exercising domination over certain kinds of relationships, norms, interactions and practices (O'Brien, 1999). Foucault was very critical of the Enlightenment tradition that what counts as truth depends on epistemological criteria rather than on strategies of power (Hulme, 1992: 6). Instead of assuming, as Enlightenment philosophy argues, that thought can capture the ultimate nature of reality (Chapter 2.3.2), Foucault's ideas make it clear that what determines the nature of thought is not reality itself but "the sociohistorical conditions under which thinking is done" (Hughes & Sharrock, 1997: 189). That is to say, language and discourse are the agents of knowledge and history. Thus, Foucault, as a poststructuralist, claims that thought and its expression as language is capable of *representing* reality but not producing *authentic* representations of it. In this respect, he differs from the critical realist ontology that assumes the existence of a material reality that is apprehendable, albeit subject to human interpretation. Also absent from Foucault's postructuralist stance is any attention given to the institutional contexts or social effects of discourse; that is, to the *interconnection* of knowledge and power that is the concern of critical theory. Nevertheless, in drawing attention to the connection between knowledge and power, Foucault provides insights into the socio-political issues connected with development (Section 4.2, below).

4.1.3 Complexity

Social relations, including issues of power, determine how one understands society and the environment, and are of particular interest to researchers, policy-makers and educators trying to find ways of responding to the ecosocial crisis. As I have argued in Chapter 2.4, social relations are characterised by considerable complexity, especially when considering the social implications of chaos theory and quantum theory in Chapter 2.3.2. The uneven nature of our understandings of social relations simply points to the openness, contingency and contextually variable character of social change (Sayer, 2000: 3). Of particular significance is the view that complexity of the new forms of knowledge production can be best understood in a dialectical relationship with social change and corresponding changes in economic organisation (Chapter 2.4). Through this dialectical relationship, it is possible to know the real world, while accepting that the causal processes produce different results in different social contexts. Thus complexity is an issue for environmental education and research, as will be evident from my examination of the wide-ranging concepts addressed in this chapter.

In order to illustrate how these six concepts are presented for students' critical analysis, I refer to Student Activities in the Study Guides of the *MA in Environmental Education* course with particular reference to critical theory and critical realism. As students examine and reflect on the six concepts, my intention is to reveal the distinctive nature of the MA course in offering students a socially critical form of environmental education and thereby examine their *praxis* as environmental educators and advance their professionalism. I conclude the chapter by summarising the proposals that I feel I can make following the examination of the concepts in this chapter, and follow this with a further two research questions that are subject to evaluation in Chapter 6.

4.2 The concept of development

4.2.1 In the context of the MA course

The rationale for the *MA in Environmental Education* course assumes that to reduce the human impact on social systems and the rest of the biophysical world, students should engage critically with environment and development issues. Indeed, written into the first module is

request that students explore their value-position and consider the root causes of the links between environment and development. For example, Student Activity 1.2(a) shown in Fig 4.1 is taken from *Module AN1: Introducing Environmental Education: impediments and possibilities* where students explore their understanding of the link between environmental degradation and certain forms of development practices.

In thinking critically about their value position in relation the ranking of statements on the cards in Fig 4.2, students write down their own statement as to the root cause of environment and development problems and position it in the ranking. In response to this task, Amanda Stretton (UK; Module AN1 assessment, October 1997) wrote:

> *This useful, if demanding, exercise reinforced my perception of the root causes of the double crisis of environment and development because I was able to order the cards according to my own perception. However, I did feel that this activity increased my understanding of the environmental crisis by introducing causes I had not hitherto considered, such as modernity and feminist politics.*
>
> *Inevitably, I put my card,* ***Global Inequality,*** *at the top of the hierarchy alongside* ***A Global Revolution.*** *This card reiterated the important role of political processes and economic systems on environment and development and the consequent need for change.*

Here, Amanda is reflecting on the difficulties of coming to terms with the complex causes of the ecosocial crisis and the intellectual challenge of deciding the relative significance of the statements on the cards. At this early stage in her studies, she has recognised the connection between environment and development issues and economic and political practices, and of the consequent need for social change.

Another student, Sarita Kendall (Colombia; Module AN1 assessment, February 1997) argues for greater public participation in decision-making about environmental issues:

> *The exercise of choosing priorities was one I found very revealing, particularly the difficulty of relegating elements I thought I had considered important (e.g. environmental politics, green economics) to the bottom of the pyramid. In this and the other activities and reading I have found that the participation of people in decisions about environment-related issues has not received enough attention. Although democratic procedures are considered more appropriate than*

authoritarianism for small-scale communities, and imply greater participation in decision-making, none of this has been satisfactorily teased out.

1.2(a) Student Activity
Root Causes of the Link Between Environment and Development

On the following two pages are a list of statements regarding causes of what is often called the 'double crisis of environment and development'. Before examining the statements critically, write down on the blank card what in your view is the root cause that lies at the heart of the double crisis. Begin with the words: 'The basic problem is .....'

1. Now cut out these statements to make a set of cards.
2. Now consider all the cards including your own and arrange the whole set in a pyramid shape. The cards which in your view express the root causes of the double crisis are to be placed at the top of the pyramid and those which in your view are of marginal importance or irrelevant at or near the bottom. The resulting pyramid should represent an approximation of your 'worldview' or belief system concerning issues of environment and development. When you are satisfied with your positioning of the cards, glue them to a sheet of paper.
3. Now consider the following and record your comments in your Research Diary:

- Was the card you wrote initially duplicated within the set?
- If so, did the card have a high position within the pyramid?
- Which card(s) would be likely to cause most disagreement if you were doing this as a group activity?
- Are there any important causes that have not been included in the statements?
- What has determined the way in which you have diagnosed the causes of the double crisis (that is, explain your underlying philosophy and politics, i.e. ideological position)?
- When you have made your pyramid and considered its implications, briefly outline in your Research Diary possible solutions to the root causes.

Fig 4.1 Student Activity from Module AN1: Introducing Environmental Education

Sarita, like Amanda, recognises the importance of democratic procedures in working towards an understanding and resolution of environmental issues. At this point in the course, the sensitising of students to the social origins of the ecosocial crisis is an important point of departure for the rest of their studies.

ENVIRONMENTAL POLITICS	A GLOBAL REVOLUT ION
The basic problem is that our major political parties are too interested in propping up a non-sustainable economy and keeping the voters happy in the short term. The environment is generally low down on their agenda and is treated in a piecemeal, superficial and pragmatic way. We need government by a party which makes sustainable development its priority and legislates to bring about a national programme to integrate development and conservation.	The basic problem is that current forms of development and under-development result from the workings of global capitalism. The power of large companies and the richest nation states, together with the poverty and powerlessness of the majority of the world's people and countries, mean that the Earth's resources are increasingly used either to make profits for the rich or to enable the poor merely to survive. Only when power and resources are fairly distributed in the world will people be able to realise their common interest in sustainable development
FEMINIST POLITICS	**EDUCATION**
The basic problem is that dominant forms of development are largely controlled by men. They take the reproductive powers of women and nature for granted and make the work involved in sustaining and reproducing life more difficult. Only when all work and decision making is equally shared by men and women will we be able to realise sustainable futures which overcome women's disadvantage Women's knowledge, intuition and closeness to nature mean that they have the key role to play in guiding us towards sustainability.	The basic problem is that current forms of education maintain non-sustainable forms of development. They are part of the problem not the solution. If education is to assist the transition to sustainable development it must challenge prevailing ways of living with nature or existing economic, political and cultural realities. It should adopt an holistic philosophy, which recognises our essential connectedness with everything and everyone else. Only then will it be able to educate the whole person to live at peace with the whole world
MODERNITY AND POST MODERNITY	**CARD FOR YOUR OWN STATEMENT**
The basic problem is that more societies have adopted a view of the world that separates people from nature, and knowledge from values. This worldview facilitated the rise of science and the modern age that promised continual progress and human liberation. This promise was not realised because instrumental reason exerted an increasing hold on social affairs and was used to justify the exploitation of people and nature in both capitalist and socialist societies.	
ETHICS AND VALUES	**DEVELOPMENT TO MEET HUMAN NEEDS**
The basic problem is that we are neglecting our duty to care for each other and other forms of life. We must establish and teach a new world ethic to guide development so that it does not take place at the expense of other groups and species or of later generations. This new set of values would stress the rights of both human and non-human nature and would represent a break with the anthropocentric or human-centred values which form the basis of ethics and politics in modern societies	The basic problem is that development which puts the economy and economic growth before people and the quality of human life has failed to solve problems of poverty and has caused growing environmental problems. We need alternative forms of sustainable development which ensure a long and healthy life, education, access to the resources needed for a decent standard of living, political freedom, guaranteed human rights, and freedom from violence for all

GREEN LIFESTYLES	POPULATION CONTROL
The basic problem is that people in the rich countries of the world are living in ways which are not sustainable. We must reduce our use of energy and natural resources by changing our patterns of consumption and behaviour. Industry and government can encourage us to do this by providing us with appropriate information, products, and incentives. urgently.	The basic problem is that the global human population is now around 5.3 billion. It cannot stabilise at less than 10 billion and may reach 12 billion. This increase cannot be supported without doing irreversible damage to the Earth. Policies that bring human numbers into balance with the Earth's capacity to support people must be developed.
APPROPRIATE TECHNOLOGY	**ENVIRONMENTAL ECONOMICS**
The basic problem is that too much of our current technology wastes energy and resources and pollutes the environment. What we need are new forms of appropriate technology which are designed and made with local people in ways which meet their basic needs while conserving energy and materials an reducing waste. The private motor car is an inappropriate transport technology for our cities. Community bicycle schemes or public trams may be more appropriate.	The basic problem is that most of our environmental problems result from the misuse of natural resources and services. The environment is often treated as a free 'sink' for wastes and this results in such problems as marine pollution and global warming. We should alter the way in which Individuals, firms and governments have to do their economic accounting. If prices and other economic indicators reflected the real environmental costs of products and policies we would soon realise sustainable development

Fig 4.2 Statements concerning the root causes of the ecosocial crisis (Courtesy: Reaching Out: Education for Sustainability (Huckle, et al,1995b)

Further discussion about the relationship between environment and development occurs throughout the course. For example in *Module AN7: World Politics and the Global Environment*, students have moved from reflecting about environment and development in general terms to commenting critically on power and politics at a global level as shown in Fig 4.3. In this example from the module text, the focus is on students examining the implications of the Brundtland Report (WCED, 1987) for a renewed understanding of development – which I take up in Section 4.2.2.

Following these examples of where students engage with 'environment and development', I now reflect on the contested meanings of development, as presented within the course texts, with reference to the terms *deconstruction, development ideology*, and *relational ways of thinking*. This background will help inform my analysis of the 'critical encounter' discussed in Chapter 6.4.

7.3(b) Student Activity **Whose Common Future? Power, Politics and World Development**
Set Reading: Chatterjee, P. and Finger, M (1994) *The Earth Brokers: power, politics and world development*, London: Routledge, Chatterjee and Finger (1994: 27; Ch 1) conclude that the Brundtland Report basically reformulates the now old development myth - the myth of unlimited industrial development Having critically analysed the arguments presented, you are asked to attempt the following questions: 1. Identify the main arguments Chatterjee and Finger use to support this assertion. To what extent do you agree or disagree with these arguments? 2. Chatterjee and Finger (p28) claim that the Report strengthens the old development discourse and reflects the original development paradigm. 3. What do you think they mean by this?

Fig 4.3 Student Activity from Module AN7: World Politics and the Global Environment

4.2.2 Meanings and contradictions

A number of authors, including Escobar (1995) and Crush (1995), deconstruct the meaning of 'development'[73]. They argue that it is a Western idea founded in events immediately following the Second World War when those in power, including the United Nations, saw the objective of development as a means of devising procedures "for the economic development of underdeveloped countries" (UN, Department of Social and Economic Affairs, 1951, cited in Escobar: 1995: 4)[74]. In acceding to the concept of development, some newly independent ex-colonies began to see themselves as 'under-developed', mainly because of their growing perception that they were in poverty and economically backward. They proclaimed

[73] In this research account, I use the words *deconstruction* and *deconstruct*, not in the sense of simply breaking down of a concept, but in the sense of problematising or interrogating understanding about that concept. Deconstruction does not necessarily lead to a rejection of this understanding. When the deconstruction carries through, it may be necessary to revise this understanding. For example, defeatist versions of postmodernism lead one to 'deconstruct' understanding about modernism (Chapter 2.3).

[74] It was President Harry Truman, in his inauguration speech before Congress, who drew the attention of his audience to the conditions in poorer countries and for the first time defined than as 'undeveloped areas' (Sachs, 1999, cited in Fischer & Hajer, 1999: 25).

'development' as their primary aspiration in a mirror image of the North[75]. As Francois Partant, the French banker-turned-arch critic of development has put it (cited in Goldsmith, 1997: 69):

> The developed nations have discovered for themselves a new mission - to help the Third World advance along the road to development ... which is nothing more than the road on which the West has guided the rest of humanity for several centuries.

Escobar (1995: 9) argues that in this way the ideology of development, motivated and sustained by the West, has created "an extremely efficient apparatus for producing knowledge about, and the exercise of power over, the Third World". Deconstructionists see this ideology being produced within social fields of force, power and privilege (Polier & Roseberry, 1989) and reflects Foucault's (1977) view that, since the end of the eighteenth century, social order has been maintained not by overt, external, sovereign power, but by far more subtle forms of disciplinary power (Section 4.1.2). This includes the division and distribution of people in space, such as the North-South distinction, the division of time, and therefore of human activity, into periods, and the creation of tactical networks for the efficient deployment of people and activities, such as the world economic system[76].

The march to become 'developed' has resulted in a widening gulf between the rich and poor as the UN's *Human Development Report* (UNDP, 1998) claims:

- The poorest 20 percent of the world's people saw their share of global income decline from 2.3 percent to 1.4 percent in the past 30 years;
- The assets of the world's 358 billionaires exceed the combined annual incomes of countries with 45 percent of the world's people;

[75] None of the terms used to distinguish between the more or less economically advantaged countries (or communities) are satisfactory. Categories such as 'Third World' or 'North/South' or 'less' or 'more' developed countries are constructed by the economically privileged to categorise those less so.

[76] This particular meaning of development that I have begun to clarify in the preceding paragraph is a Western metaphor, one closely associated with colonisation. Indeed, for two thirds of the people on Earth the positive meaning of development, strongly rooted in three centuries of social construction, is a reminder of what they are not. See Esteva (1995) for a detailed discussion.

- In 70 of these countries, average incomes are less than they were in 1980, and in 43 countries less than they were in 1970;
- The United States has one of the greatest income disparities, and the greatest number (141) of billionaires. From 1975 to 1990, the wealthiest 1% of the population increased its control of total assets from 20% to 36% while the bottom 60% experienced a decline in income. The richest 4% stole as much as the bottom 51% earned. The income ratio between the top 20% and bottom 20% is 9 to 1.

Thus, on the global as well as the national level, in and between communities, there is a polarising dynamics at work creating an economically ambitious working class on the one side and large sections of the socially excluded on the other.

However, whilst there is statistical and visible evidence of widespread poverty, environmental degradation and inequality in many parts of the world (UNDP, 1998; Clarke, 1999), Crew & Harrison (1998: 18) are critical of the tendency of some deconstuctionists to maintain polarised and dichotomous views of the world, e.g. the 'developed' and the 'underdeveloped'. Their argument (*ibid*: 19) is that to "adhere to certain categories of actors as if their characteristics were known and fixed, means that power becomes reified in a deterministic way, which serves to perpetuate a view that nothing can change". Rather, they argue, one should question the apparently monolithic power of the developers and show the need for a more finely graded, contextual account of the complex and often ambiguous relationships that exist within the development industry. This implies creating new relational ways of thinking about development. As seen by Crew & Harrison (*ibid*: 19), this involves exploring "how the boundaries between one apparent category of social actors and another are bridged, transformed and shifted".

My recent involvement in a study of poverty alleviation, gender disparity and sustainable resource use in the Vihiga District, Kenya has not only allowed me to develop 'relational ways of thinking' about development, but it has also helped me to understand how the value-free interventions of traditional models of development assume that a sharp division exists between the stakeholders. This study, and a subsequent workshop held in Kisumu, Kenya (Otieno and

Plant, 1999), stem from my collaboration with Dorcas Otieno and her colleagues in Kenyatta University, Nairobi, between September 1997 and March 2000. This collaboration came about as a result of an Academic Link between the universities of Nottingham Trent and Kenyatta funded by British Council. A pre-study of poverty alleviation conducted jointly by the Department of Socio-Cultural Studies, Faculty of Environmental Studies, Kenyatta University and Nottingham Trent University (Otieno, *et al*, 1999) indicated that there was a need for community-oriented planning in the different areas that the people in the Vihiga district *had themselves identified as a way out of poverty.* Thus while intervention was necessary, the pre-study and the subsequent workshop recommended the design and implementation of entrepreneurship strategies which could lead to the promotion of viable and growing small-scale manufacturing enterprises such as pottery production, handicraft, textile, and fish farming.

The pre-study and workshop study noted that if these strategies were to be successful, strong linkages and partnerships are necessary among all stakeholders geared towards poverty alleviation. In order to facilitate entrepreneurship among the poor, the intention is to develop distance education materials in collaboration with Kenyatta University colleagues for the use of Extension Workers, Group Leaders, Youth Leaders and Adult Education Workers. This relational way of working stems not from intervening directly as in assuming top-down, expert-driven poverty alleviation programme works best. Rather, it first requires the identification of the needs of the community groups since they represent those in poverty and this must occur before the planning and development of educational materials that will arise subsequently from consultation with the communities involved. The recommendations of the pre-study and workshop is dependent on further funding of the British Council Academic Link programme and have yet to be acted upon.

This case study from Kenya is an example of how poor communities can resist or 'get round' the kind of top-down, value-free aid programmes that tend to dominate their lives in ways that are often incompatible with their traditional practices. For example, few of the almost 20 million people in India displaced by hydro projects in the fifty years since independence, have been compensated (Thomson, 1999: 140). It is not surprising, then, that the 400 megawatt

Maheshwar hydropower project of the New York-based Ogden Corporation is fiercely opposed, because of its social, environmental and economic impacts, by the Narmada Bachao Andolan (Save the Narmada Movement), which represents tens of thousands of local people, as well as by other Indian and international human rights and environment groups. (Rivernet: International News, 2000).

Needs-based, community-led resistance of this kind illustrates the potential of alternative forms of development to empower a community to oppose the misplaced authority of external agencies, and to implement solutions to their irrigation problems emerging from physical and biological contexts familiar to the recipients of the development programmes. In this way, the inflated concept of development, once offered as panacea for the backwardness and poverty of communities worldwide, now becomes disentangled from its colonial heritage and reconnected with local or indigenous knowledge. That is not to say that we should replace the former concept of development entirely by the latter for, as Dickens (1996: 205) recognises, matters are far more complex than this. Dickens argues that critical realism offers insights into how to engage with the complexities of working between different strata in the human and non-human worlds where "emancipation lies in linking dominant forms of abstract, explicit, global and expert knowledge to subordinated concrete tacit, local and lay understandings". As an example of this how this 'linking' takes place in practice, I refer to the 'critical encounter' in Chapter 6.4 with one of my students in Colombia who, in her educational work with Indian communities in the Amazon, was faced with reconciling the particularism of local practices with the universalism of economic and social development practices.

4.3 The concept of sustainable development

4.3.1 In the context of the MA course

As with development, sustainable development is problematised in the Study Guides of the *MA in Environmental Education* course. For example, Fig 4.4 shows one of the Student Activities from the first module of the course, *Module AN1: Introducing Environmental Education: impediments and possibilities.* The expectation that students consider the sustainability of their lifestyles as a basis for professional action reflects the requirement that they use a critical

action research methodology in their studies to enable them to recognise and resolve contradictions through dialectical processes of learning (Chapter 2.4). In her response to this activity, Marina Lewis (Mexico; Module AN1 assessment, October 1995) wrote about the contradictions she feels in recognising the need to act in ecologically and socially sustainable ways, yet not find it easy to do so.

> *One of the major contradictions in my life is the use of my car, which I know pollutes the atmosphere and has a huge effect on the environment. If I were to use public transport, it would be more expensive, and it would take three times as long to get to work. So, in this area I feel constrained by the time and money and my own laziness. In addition, when I recycle I drive to the recycling centre.*

Another student, Linda Round (Oman; Module AN1 assessment, December 1998) began to think about 'sustainability' in the context of her school rather than in her lifestyle. At the Sultan's School where she was a biology teacher (see Chapter 6.2), she saw possibilities for a whole school response to sustainability:

> *The school itself ought to be more sustainable as the curriculum should reflect the way the school is run. The ECIS[77] Charter for Sustainable Schools is, through its pilot schools, raising this issue. The most difficult task for education is to challenge their current political and social ideologies so that the programme does not merely reflect the views of society but rather seeks to change them.*

Later, in *Module AN7: World Politics and the Global Environment*, students are encouraged to develop a deeper understanding of sustainability in a global context. Their reading asks them to consider the intergovernmental reports such as UNCED (1992) and the call for the move towards sustainable development WCED (1989). The challenge of sustainability raises questions about the notions of progress and modernisation concealed in the concept of sustainable development. For example, in considering these questions, Susan Tyzak (UK; Module AN7 assessment; February 1996) reflected on the contradictory nature of sustainable development:

> *Currently the most widely accepted model for global progress is that of 'sustainable development' as outlined in the Brundtland Report (WCED, 1987)*

[77] European Congress of International Schools

and consolidated at the Rio Summit as Agenda 21 (UNCED 1992). Secondly, the obstacles that prevent this from being put into practice have to be overcome. Problems arise, however, over exact terminology and different usages of the words, so that concept of sustainable development is still a highly contested construct.

1.3(c) Student Activity **Sustainable Lifestyles**
To put the environment at or near the top of one's list of priorities sounds so reasonable and obvious. How could anyone possibly disagree, let alone seek to live in a way that imperils our very future as a species? Yet, that's exactly what the majority of human beings alive today either choose to do in the developed world, or are compelled to do by chronic poverty in the Third World. At this stage we would now like you to consider your own lifestyle. To what extent is it 'environmentally aware' and 'environmentally friendly'? 1. Consider carefully and describe in detail (with reference to the literature as necessary) what a 'sustainable' lifestyle means for you. 2. To what extent is your present lifestyle sustainable? Identify elements that can be regarded as sustainable. 3. Consider the contradictions and constraints within your present lifestyle that may prevent you from adopting a more sustainable way of life. 4. What could you do today which would make your lifestyle more consistently sustainable? 5. Consider the proposition that when examining sustainability the focus should be sustainable livelihoods rather than sustainable *lifestyles*.

Fig 4.4 Student Activity from Module AN1: Introducing Environmental Education: impediments and possibilities

Linda's and Susan's responses to the reading and Student Activities guided by the course texts raised concerns about the contested nature of sustainable development and whether it really does offer humanity a pathway to a socially and ecologically sustainable future. I have already given some attention to deconstructing the term in Chapter 1.3. In that context, I referred to the growing interest in orienting environmental education towards 'education for sustainable development' (ESD). I presented a case for the promotion of 'strong' sustainable development in order to counter government's tendency to use the term in its 'weak' sense as a mechanism for regulating both people and nature. In the rest of this section, I expand on that introduction in order to argue that strong sustainable development offers a form of institutional

learning and cultural politics that has the potential to reveal "a new way of seeing, with new constraints and opportunities" (Hajer, 1995: 262, cited in Pepper, 1999: 2). The key terms in this discussion are *strong sustainability*, *social justice* and *ecological modernisation*. This background will help inform my analysis of the 'critical encounter' discussed in Chapter 6.8.

7.4(b) Student Activity **Sustainability**
It appears from all that has been said so far that the idea of sustainable development as defined by UNCED contains at least four implications: 1. a concern about the relationship between resource use, population growth and technological development and advancement; 2. a concern about the production and the distribution of resources of food, energy and industry amongst the more developed and less developed nations of the world; 3. a concern about uneven development, about the gross imbalances between and within rich and poor nations, about economic dominance and ideological differences; 4. a concern about environmental degradation and ecological disaster. Overall, it exposes a concern that focuses on human need rather than human want. As such it offers a challenge to the materialist and consumerist values of much of the developed world. But does it go far enough? Does it offer a challenge to industrialism as such, or only to industrialism in certain forms? At this stage how would you want to articulate the notion of sustainability? In terms of growth, development or something else? Outline your ideas.

Fig 4.5 Student Activity from Module AN7: World Politics and the Global Environment

4.3.2 Meanings and contradictions

For some time, economists have been a concerned with how to sustain human society. During the early part of the 18th century, it was the orthodox economist Malthus who argued that the main constraint on human happiness is not the scarcity of resources, but the pressure of population on a limited resource base (Redclift, 1994: 7)[78]. This Malthusian tradition gave rise to the 'population ethic' that was taken up by neo-Malthusians such as Hardin (1968). In contrast, a more optimistic view of the relationship between economic growth, population and

resources was to evolve during the 50s and 60s of the twentieth century reflecting the Promethean spirit that human ingenuity is capable of fending off the day when population would outstrip the natural resource base. However, in 1972 Meadows *et al* (1972) undermined this Promethean spirit by publishing *Limits to Growth* that drew attention to how the clamour for economic growth neglected to consider the consequences of this growth on the sustainability of ecological systems[79]. Later, in an attempt to reconcile economic development with ecological and social sustainability, the authors of *Caring for the Earth* (IUCN/UNEP/WWF-UK, 1992) set out the following guiding principles for humanity:

- Respect and care for the community of life.
- Improve the quality of human life.
- Conserve the Earth's vitality and diversity.
- Minimise the depletion of non-renewable resources.
- Keep within the Earth's carrying capacity.
- Change personal attitudes and practice.
- Enable communities to care for their own environments.

However, as Jacob (1997: 115) points out, transformations in social practices implied by these principles are piecemeal in that they aim at changes in performance criteria of technological devices, such as more energy-efficient transport, rather than being concerned with factors requiring a more reflexive approach related to structural factors. The continued emphasis on economic growth as an essential component of sustainable development is evident in the Brundtland Report (WCED, 1987: 89), which calls for "more rapid economic growth in both industrial and developing countries". This 'business as usual' approach has come to be called 'ecological modernisation', or the 'greening of capitalism', which is a theory of late modernity that acknolwedges human ingenuity is the key to resolving environmental problems through the application of technical expertise. In its idea that the industrialisation process can be

[78] In his theory of populations (Malthusianism), Thomas Robert Malthus (1766-1834) argued that population needed to be kept in check as the laws of nature demanded a balance be kept between population and resources.

[79] For example, despite the failure of the 'green revolution' to fulfil its mission of feeding the world, current interest in genetically modified crops as a way of warding off global hunger shows that the Promethean spirit lives on. See 'ecological modernisation' in this section.

switched in a direction that takes into account the maintenance of the existing sustenance base (Spaargaren & Mol, 1992: 334), ecological modernisation rejects the Schumacher (1973)-inspired 'small is beautiful' ideology in favour of large-scale restructuring of production. In this respect, ecological modernisation makes no attempt to address problems of the Third World (Hannigan, 1995: 183) since it focuses on economies of Western European nations which are to be 'ecologised' through clean production such as microelectronics and genetic engineering.

At the Earth Summit (UNCED, 1992), Western governments were "unwilling to question the desirability of economic growth, the market or the development process itself" (Hildyard, 1995: 22). Indeed, a considerable part of the preparatory sessions was devoted to thrashing out arrangements to ensure accessibility of the Third World to North's development of the new generation of clean technologies (Jacob, 1997: 115). The consequence of this thinking is the assumption that if some less developed countries (LDCs) have not yet achieved sustainable development it is because they do not possess the financial, human, technological and organisational capacity to do so. Moreover, if more developed countries (MDCs) do not do well in terms of sustainable development, it is because they lack financial, human, technological and organisational efficiency. Accordingly, the interpretation of sustainable development occurs *within* the development paradigm rather than *alternative to* it. As it appears in the both the WCED and UNCED reports, sustainable development is firmly rooted in the existing Western model of society, an observation made by Chatterjee & Finger (1994) in relation to the Earth Summit:

> It is probably no exaggeration to say that technology is the biggest hope that emerges from UNCED in general and Agenda 21 in particular. Given the world-wide experience with technological progress over the past 100 years or so, the mythological belief in the miraculous emergence of fundamentally new more efficient, cleaner, and environmentally safer technologies is probably, above all, wishful thinking.

The foregoing considerations make it difficult not to concede that the principle of sustainable development has been foisted on marginalised communities and groups regardless of whether they are struggling to survive and unable to make choices about whether or not to do with less.

Is it not surprising, then, that these marginalised communities oppose the more developed countries' maverick assumptions that they oversee everything and everyone else in the name of resource managerialism to realise their goals of bioeconomic efficiency? The refusal to be subordinated to a worldview dominated by essentially alien values and assumptions identifies what Foucault termed 'resistance against subjection' to universalising messages such as sustainable development. Fundamentally, sustainable development raises the need for humanity to face up to the crisis of justice. Whilst the much vaunted WCED definition of sustainable development, "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987) appears to have succeeded in building a bridge between environmental concerns and development interests, two crucial questions remain: What needs? and Whose needs? Sachs (1999: 29) asks, is sustainable development supposed to meet the needs for water and land, and economic security or the needs for air travel and bank deposits?

All this talk about sustainable development can easily be criticised for its emphasis on speciesism, stressing the needs of humans above the rest of biophysical nature[80]. As Dickens (1996: 204) argues, "domineering ideas about and practices towards the environment are actually not the best way of fulfilling human needs". ... If nature is what Marx called "man's inorganic body", then there is every *human* reason why human beings should tend this external body" (original italics) (see, also, Chapter 2.4). In other words, there should be no conflict between humanism and the needs of non-human nature. As Dickens (*ibid*) points out with regard to this tension:

> [The] important point here is a dialectical one". Humans convert nature into the things they need but in doing so they develop their *own* nature. ... as indeed Marx, argued, humans naturalise themselves in the process of humanising nature. They enhance their own natural being".

The reconstruction of the prevailing view of nature through critical realism as Dickens sees it, has to topple the prevailing faith in technology as a way of righting the wrongs of technological impact on the environment. Technical solutions underpin the idea of ecological modernisation

[80] There is also an antihuman speciesism, which treats all human beings as equal enemies of nature.

suggesting that, in economically advanced societies, respect for science is far-reaching (Dickens, 1996: 98). However, siding with ecological modernisation would conflict with my experience that technicist forms of knowledge about environmental issues coexist in society with alternative forms of knowledge that are often marginalized (Section 4.3.1 above). Indeed, one would expect that scientifically uninformed people, including policy-makers and managers, would make use of a diverse array of epistemologies to interpret ecological information, and that science is only a single component of the complex framework that orients environmental decision-making (Cohen, 1998: 79). For example, the critical examination of an environmental issue such as genetically modified organisms needs to take into account greater social accountability and has given rise to the belief that values, beliefs and perceptions of lay people, the scientifically illiterate, should influence decision-making and not only scientific evidence (Wynne, 1994). That is not to ignore scientific knowledge for that would favour the positioning of values and norms purely within particular contexts, and make them immune to evaluation from outside. Rather, in line with a critical realist perspective, there is a need to engage with the complexities of knowledge formation about the human social relations with the rest of the biophysical world through dialectical processes linking dominant forms of external and expert knowledge with local and lay understandings.

Despite my interest in seeing strong sustainable development helping people to transcend consideration of the immediate economic-based interests of weak sustainable development, I am sceptical that the Western world will learn to use and manage the Earth's natural resources wisely. As significant as the idea of sustainable living has become, the concepts of sustainability and sustainable development may turn out to be a watchword that temporarily seduces humanity into thinking we have the answer to its survival. As the resource gap between the MDCs and LDCs widens, and present and upcoming industrialised nations continue to exploit the ecological capital of the Earth's natural resources, perhaps the democratic processes embodied in strong sustainable development, with its embrace of community action, will turn out to be ineffective in achieving global ecological and social sustainability. In order to reduce ecological destruction in the 21st century, it may be necessary to abandon democratic processes that strive to create an ecotopia based on ecological principles. As communities are driven progressively into social chaos as more

people compete for diminishing natural resources, authoritarian measures may be necessary. An immediate problem with this scenario is that it is likely to hit hardest at those sectors of humanity that are least to blame for ecological depletion and pollution (Soper, 1996: 27).

I believe it is best to view sustainability as a principle or as a way of stabilising and surviving during an interim phase in the human pursuit of a liveable society. As Davidson (2000) sees it, "communities need breathing space to restore, strengthen and revitalise themselves and particularly to develop the shared values and mutuality necessary for the restoration of a strong civil society". It provides a means of bridging the gap between a resource-greedy modernity and a socially and ecologically enlightened form of postmodernity. For this reason, the current vogue for the slogans 'education for sustainable development' or 'education for sustainability' (Chapter 1.5) may be useful interim declarations of intent by those of us concerned about how education can contribute to sustaining social life and ecological systems. That is, until there is greater clarity regarding the consequences of human impact on the only planet in the cosmos known to support life. As I have argued in connection with critical realism (Chapter 2.4), the key to achieving better understanding this impact is to recognise the dialectical relationship between humans and the human social and non-human worlds.

4.4 The concepts of globalisation and reflexive modernisation

4.4.1 In the context of the MA course

In the introductory module of the *MA in Environmental Education* course, *Module AN1: Introducing Environmental Education: impediments and possibilities*, the 'global economy' is considered briefly (it features on one of the cards – see Fig 4.2). In *Module AN7: World Politics and the Global Environment*, there is a more detailed examination of globalisation in the context of the environment-development debate. For example, the Student Activity shown in Fig 4.6 asks students to review a chapter in a text concerning the debate about globalisation. In responding to this Student Activity, Gillian Traverse (UK; Module AN7 assessment, March 1997) wrote:

> *McGrew (1992) identifies five dualities evidenced by the process [of globalisation]: the binary oppositions of universalisation and particularisation,*

integration and fragmentation, homogenisation and differentiation, centralisation and decentralisation, and juxtaposition (close proximity of differences) and syncretisation (the hybridisation of ideas, values and knowledge) which combine to express the markedly uneven globalisation experience resulting in a "highly asymmetrical structure of power relations " (ibid: 74).

7.5 (a) Student Activity **Formulations of a Global Society**
Set Reading: McGrew, A. (1992) A Global Society? in S. Hall, D. Held and T. McGrew (Eds) *Modernity and its Futures*, Cambridge: Polity Press/Open University. In the chapter, McGrew develops the debate on globalisation, supported by supplementary reading, which we also ask you to read. You are asked to critically analyse the set reading: NB: Although McGrew is the set reading, we suggest that you might wish to engage with some of the other publications listed in the reference section which deal with the issue of globalisation. Give a detailed and critical response to the following questions: 1. Identify and describe the primary theorisations within the ideology of globalisation? 2. What are the central ideas that have emerged from the debate about globalisation? 3. What distinguishes each of the central ideas? 4. Identify some of the ways a 'global society' is now being conceived?

Fig 4.6 Student Activity from Module AN7: World Politics and the Global Environment

In the next part of this section, I discuss how the binary oppositions (that Gillian refers to) permeating discussion about globalisation come about, and I do so with particular reference to the terms *space-time compression, risk society* and *reflexive modernisation.* I connect the discussion with the potential of these concepts for supporting a critical theory of environmental education.

4.4.2 Meanings and contradictions

Globalisation, even more than the concept of sustainable development, conjures up images of totality marked by an intensification of world-wide social relationships, a global connectedness comprising the multiplicity of linkages that transcends the boundaries of nation-states and societies (O'Brien, *et al*; 1999; Bauman, 1999). As McGrew (1992: 66) notes: "Nowadays

goods, capital, people, knowledge, images, communications, crime, culture, pollutants, drugs, fashions and beliefs all readily flow across territorial boundaries". For Giddens (1991) the universalising tendencies of industrial growth are seen in the spread beyond national boundaries of radioactivity from the Chernobyl nuclear reactor, an example of what Giddens calls "the globalisation of unintended consequences". To this Giddens (*ibid*: 23) adds 'time-space distanciation' and 'disembedding' mechanisms consequent on the "shrinking of the world to a 'global village' [which] amounts to a virtual annihilation of space through time" (Hoogvelt, 1997: 120)[81]. To describe time-space distanciation, Giddens (1990) argues that:

> Globalisation can thus be defined as the intensification of world wide social relations which link distant localities in such a way that local happenings are shaped by events occurring many miles away, and vice versa.

Globalisation, then, brings together space and time where they were once differentiated[82]. Modern communications results in people experiencing a compression of space-time referring to the idea that the world feels smaller since people are able to travel and communicate across great distances much more quickly and easily than hitherto. More flexible production methods enable post-Fordist economies to satisfy the demands of a mass market and this includes the supposed demands of 'clients' on distance education courses for educational 'products' that meet their individual needs. As tutor of a distance education course with students across the world, email provides the technical means for dialogue regardless of geography and time zones and there is no longer a constraint on when or where my students and I communicate with each other (Chapters 3.2 and 3.4).

A key argument for social theorists such as Giddens (1990, 1991, 1993, 1994a/b) and Beck (1992a/b, 1994) is that the disorganised capitalism characteristic of post-Fordism is the result of the transformation of society from being concerned largely with the distribution of wealth,

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[81] Giddens' term *disembedding* refers to how social and cultural relations are spread through different times and different places, e.g. through money and markets and the global dissemination of knowledge (Giddens, 1990: 38). Giddens draws a sharp distinction between tradition in which belief and social relations are embedded in particular places and particular times and rooted in local cultures, and the social consequences of modernity.

[82] For example, the wide availability of the mechanical clock in the 18th century separated time from space and resulted in the concept of time becoming a universal phenomenon (Soja, 1989).

income and jobs to a society dominated by ecological and technological risks that were previously unknown. The type of risk referred to here is *external* risk that originates from events that happen frequently enough to be broadly predictable, e.g. those risks deriving from natural events such as earthquakes, but *manufactured* risks that are created by the very progression of human development, e.g sea level rise and flooding caused by global warming. Such risks are an unknown quantity because there are no historical parameters against which to judge them and manage their consequences. Science and technology's impact has been global, affecting not only "their place of origin" (Beck, 1992a: 75) but, in the case of atomic accidents such as Chernobyl, affecting people in remote locations and those who are not yet born. For these reasons, 'risk society' describes a society where tradition has broken down and scientific and technological advances rather than nature, dominate our lives. New sources of risk and uncertainty, such as global warming and BSE, heighten the challenge of making everyday decisions, and contributes to people being increasingly reflexive as they experience the restructuring of economic, political, social and cultural life, a trend representing an emerging form of social organisation that has come to be called 'reflexive modernisation'.

Beck's (1994) thesis of 'reflexive modernisation' refers to the observation that, in a 'risk society', people are more inclined to increasing self-reflection about the risks and uncertainties within their own lives. His thesis of a 'risk society' was explored in an earlier work where Beck (1992a) writes that such risk is "not simply the result of foolhardy adventurism but is our common fate since, whether we like it or not, we live in a 'risk society'". Giddens (1994a: 59) sees reflexive modernisation responding to the realisation that:

> [On] the global level ... modernity has become an experiment ... it is not an experiment in the laboratory sense, because we do not govern the outcomes within fixed parameters - it is more like a dangerous adventure, in which each of us has to participate whether we like it or not.

The concept of reflexive modernisation does not simply imply reflection but a self-confrontation created by the dynamics of modernisation so that thought and action constantly reflect back on one another in the light of incoming knowledge. This process changes the nature of validation and the sources of authority because there is no validatation of the incoming knowledge by tradition. Thus, theoretically, the reflexive modernisation thesis

relates to debates about modernity and postmodernity and fits easily into the postmodern image of a world that is "contingent, hazardous and erratic" (Bauman, 1994: 143; Chapters 2.2 and 2.3). The important aspect of reflexive modernisation is that it is no longer possible to rely on tradition in responding to the unpredictable and unknown effects of manufactured risk; and these risks are more than economic for they are "medical, psychological, cultural and religious" (Beck, 1992a: 101).

Beck's insights into the nature of risk in modern society are interesting, particularly as he is drawing attention to how people gain knowledge through reflection on their own circumstances, and with regard to any possibility of a connection between science and technology and human progress. However, Beck's analysis of risk society seems to assume that all knowledge is a social construction and he does not recognise that there may be real causal mechanisms 'out there' independent of human discourse and social construction. Dickens (1996: 42) points to this confusion between Beck's (and Giddens') apparent belief that all forms of knowledge are under constant interrogation while at the same time his notion of risk society must presuppose a real causes at work that precipitate environmental problems of which he seems unaware. Beck and Giddens, so Dickens (*ibid*) argues, appear to be both realists *and* social constructionists but do not make the critical realist's case that there is a possibility of an independent nature of the kind constructed by disciplines other than sociology. Consequently, both Beck and Giddens contribute little to a better understanding of the social processes by which society combines with the natural world (*ibid*: 43) of which Marx was aware[83]. Beck and Giddens do differ in respect of their views as to whether humanity can 'learn itself out of the ecosocial crisis', for neither view meets critical realism's condition that what determines understanding and action regarding the ecosocial crisis is the recognition that humanity is implicated unquestionably in the crisis. While Giddens seems to be offering as an optimistic solution to social change by arguing that, while knowledge is no longer stable, it is possible to create workable solutions of knowing that can be reflexively adapted as circumstances change. Beck, in contrast, is pessimistic in offering the uncomfortable scenario

[83] In emphasising the social processes by which capitalism combines with nature to produce commodities for sale, Marx was able to draw attention to the processes of dialectical materialism that underscores critical theory and critical realism (Chapter 2.4; see Section 4.6, below).

of unanticipated and often dangerous consequences of knowledge and its uses in society driven by technological advances. Both positions seem to 'give in' to the inevitability of the ecosocial crisis which humanity has to accept.

Shiva (1995: 154) reflects a view held by people who actively resist the vision of the global market place stimulated by capitalism: "the visual image of planet earth used in the discourse on global ecology disguises the fact that at the ethical level the global construct does not symbolise planetary consciousness". By this, Shiva means that the construction of global environmental problems conceals the fact that globalisation of the local is responsible for destroying the environment which supports subjugated local peoples. The discourse of knowledge-power that operates here is seen in the way that the G-7 can demand that the Third World plant trees while the latter is powerless to demand that the industrialised countries reduce their burning of fossil fuels (Section 4.1.2). In order to overturn this relationship it would be necessary for the 'global' to disappear from the offices of global corporations such as IMF and the World Bank and comply with the 'local' coexisting with nature.

Thus, Shiva endorses the idea that the clamour for 'globalisation' hides the widening economic gap between the industrialised economies and the world's poor and disadvantaged. Thus, my view, shared by others, is that the globalisation debate should be addressing uneven development not how new technologies can make the rich get richer. The consequence of this, is that, as Nederveen Pieterse (2000: 130) argues, "[whilst] international capital flows ... there has been a marked downturn in participation in the world economy by less developed countries since the beginning of the 1980s". The majority of people living in large parts of Africa, Asia and Latin America, whilst being excluded from participation in the 'fast lane', "are *within* reach of global mass communications and advertising; within reach of the message but not necessarily the action" (*ibid*: 132, original italics).

In contrast, then, to the utopian tenor of talk about globalisation that assumes the constraints of location and institutional constraints are irrelevant, there is a deepening scepticism that global capital feeds upon the manifestly uneven development of the various regions of the global economy (Grey, 1998, cited in Bourke & Meppem, 2000: 305). The notion of

inclusiveness in the concept of 'globalisation' conceals social inequality and overarching power relations and denies people access to lay, tacit or indigenous knowledge while concentrating understanding on abstract systems that are often unfamiliar to the communities on which they impact. Therefore, once again, a critical realist argument makes the case for connecting abstract information such as scientific understanding of global warming with practical knowledge and wisdom if communities are to understand how to live socially and ecologically sustainable lives. I present in Chapter 6.4, a case study of an MA student's attempt to do this with Amazonian communities.

This brief analysis of the concept of globalisation, and its informing ideas of 'risk society', 'disorganised capitalism' and 'reflexive modernisation', raises issues of social justice, hegemonic power, empowerment and reflexivity, and these have implications for the critical processes of learning students undertake in the *MA in Environmental Education* course (Chapter 6).

4.5 The concept of environmentalism

4.5.1 In the context of the MA course

The MA students are encouraged to appraise educational processes that have the potential to bring about economic restructuring and social change in the interests of social and ecological sustainability. Their task is to question whether leaving a concern for the environment to the economic and political institutions of society is the best course of action given the apparent difficulty politicians have in coming to any forms of international agreement over, for example, what actions should be taken to prevent global warming. That is not to say that individuals can be left to sort out the ecosocial crisis. Although collaborative individual action must count in the end, it does mean encouraging a radical form of ecology that involves calling for structural changes in economic systems, lifestyles and beliefs in the developed world, and extending moral values from human society to the rest of the biophysical world. As Student Activity 1.3(a) in the *Module AN1: Introducing Environmental Education: impediments and possibilities* shows (Fig 4.7), students begin this process of critical appraisal of their 'ecologism' by examining contrasting perspectives on the environment, including

technocentrism, ecocentrism and anthropocentrism[84]. For example, in response to her reading, Linda Round (Oman; Module AN1 assessment, December 1998) wrote:

> *Dobson (1995) challenges the technocentric ideologies with an account of computer model runs to solve five major trends of global concern. He concludes that when humans attempt to solve one problem, they then create another one. The cornucopians would argue that at least we keep one step ahead whereas the ecocentric view is that real environmental change can only occur if there is radical change in human values and morality and that this may have to enforced by authoritarian governments, regardless of opposition or current morality.*

1.3(a) Student Activity
Perspectives on the Environment

Set Reading:
Please read section 4.1 and 4.2 from Chapter 4 'Concerning Environmentalism' in Plant, M. (1998) *Education for the Environment: stimulating practice*, Dereham: Peter Francis Publishers. Also read at least two of the following texts.
Dobson, A. (1995) *Green Political Thought*

- Eckersley, R. (1992) *Environmentalism and Political Theory: Towards an Ecocentric Approach*
- Pepper, D. (1993) *Eco-Socialism: from deep ecology to social justice*
- Adams, M. W. (1996) *Future Nature: a vision for conservation*, London: Earthscan Publications

Use the texts to summarise the various distinctions recognised within anthropocentric (or technocentric), and ecocentric perspectives. In particular you need to emphasise:

1. how the relationship between human and natural components of the environment are viewed;
2. the main arguments being put forward;
3. the environmental implications of such arguments;
4. the social and political implications of such arguments.

Fig 4.7 Student Activity from Module AN1: Introducing Environmental Education

[84] The difference between *ecologism* and 'environmentalism' is as follows. The latter argues for solving of environmental problems via a managerial approach without requiring any fundamental changes in present values or patterns of production. The former holds that a sustainable and fulfilling existence presupposes radical changes in our relationship with the non-human world, and in our mode of social and political life. While ecologism appears most closely aligned with 'education for sustainability' (Chapter 1.5) supported by a critical theory of education, environmentalism aligns with ecological modernisation (Chapter 1.2) and an open belief in technical solutions to the ecosocial crisis. Some authors, e.g. Dobson, 1995, argue for the establishment of ecologism as a political ideology in its own right.

Student Activity 2.6(a) Thinking About YOUR Ecologism
Dobson (1995) highlights some interesting ideas and questions about ecologism that are worth considering in more detail. This Student Activity is a way of facilitating the consideration of your own ecologism, which you have begun to explore already in the Module. **Set reading:** Please read Dobson (1995) *Green Political Thought*, Ch 1, pp14-38, and answer the following questions: 1. Summarise briefly the eight characterisations of ecologism by Dobson in no more than 50 words for each. 2. The 'limits to growth' thesis is of central concern to Green ideology and strongly resurfaced at the Rio Summit. What is your view of the population-resource issue? 3. Highlight any other points that Dobson makes which you do not agree with. Explain your reasoning. 4. To what extent do you agree with the notion of a 'private' and 'public' ecologism?

Fig 4.8 Student Activity from Module AN2: Perspectives on the Environment

Further analysis of environmentalist perspectives occurs in *Module AN2: Perspectives on the Environment: differing ideologies and utopias* where, for example, the Student Activity 2.6(a) asks students to explore their ecologism (Fig 4.7). Again, Linda Round's response to reading Dobson is as follows:

> *Dobson (1995) ... characterises ecologism, or Green politics, from an ecocentric/biocentric perspective. His concern over the public view of ecologism hiding its real ideology could, in my opinion, be a natural way in which environmentalists change from their anthropocentric solutions to more ecocentric ones. ... I would argue that ecologisms's appeal is currently showing slow progress because it has to compete with the current political structures.*

In the rest of this section, I examine the contradictions and tensions within the environmental movement caused by a failure to agree over causes, symptoms and actions of the ecosocial crisis. I do this in the belief that my students should acknowledge the links between environmental decline and development policies and thereby gain a deeper perspective about the different standpoints within the environmental movement. The discussion refers to the key words: *anthropocentrism*, *ecocentrism*, *ecosocialism*, and *ecofeminism*.

4.5.2 Meanings and contradictions

Environmentalism is one of the most powerful social and political movements demonstrating widespread fears about the increasingly detrimental effects of humanity on human social systems and the non-human world. Wherever one's political preference is positioned on the spectrum of green politics, there is generally a requirement that the roots of existing society are chopped away; and since education is more a means of maintaining the *status quo*, nothing short of a radical reform of the curriculum is demanded. In beginning an exploration of the various shades of green of environmentalism, Milton (1996: 74) notes that in the more developed countries:

> [T]here have always been two environmentalisms, or at least since the beginning of this century when the battle of words between Muir and Pinchot over the damming of a river in Yosemite National Park laid the foundations of a split between the 'conservationists' and 'preservationists'.

While conservationists are keen to protect nature as a resource for human use, preservationists recognise a moral obligation towards nature itself and want to protect it *from* human use. There is evidenceof this Janus-like nature of environmentalism in more recent analyses where it is possible to differentiate between people who favour an *anthropocentric* worldview, and those whose interests are nature-centred or *ecocentric.* People who face towards anthropocentrism see nature as socially constructed and locate all worth within a framework of human significances. Generally, they demand more responsiveness and accountability in political, regulatory, planning and educational institutions, and they support the retention of the *status quo* in the existing structure of political power. This anthropocentric standpoint has two broad subdivisions: *interventionism* and *accommodation.* Interventionists have faith in the limitless capacity of people to exploit the Earth, to improve public welfare and to transform ecosystems through the application of science, market forces and managerial ingenuity. It is the position adopted by most people with economic and political power. Interventionists have faith in technology and assume that humanity is in control. For this reason, their environmentalism is sometimes called 'technocentrism' and by others 'egocentrism' (Merchant, 1999: 204). On the other hand, 'accommodationists' adopt a comfortable position of modest reform and it is the basis of UNCED's sustainable development programme. They keep faith with the adaptability of institutions and approaches to assessment and evaluation to

accommodate environmental demands. It is based on the precept of the greatest good for the greatest number for the longest time and is the conservation ethic of Roosevelt and Pinchot during the Progressive Era in the early 20th century. The accommodationist's ethic is what Merchant (*ibid*: 210) calls a 'homocentric ethic'.

Unlike anthropocentrism, ecocentrism has customarily been the driving force behind the other face of environmentalism and has shaped contemporary ecological sensibilities (Cohen, 1998; 78). Developed by ecologist Aldo Leopold who formulated the land ethic in the 1940s, the followers of ecocentrism maintain that the developmental process is far from inevitable and they advocate humility towards the natural world and regard people as part of nature. Leopold's land ethic has expanded the human community to include soils water, plants, animals, or collectively the land. Leopold said that a "thing is right when it tends to preserve the integrity, beauty, and stability of the biotic community. It is wrong when it tends otherwise" (Leopold, cited in Merchant, 1999: 211). Ecocentrists often refer to the wasting and polluting of a pre-discursive nature where humans have failed to appreciate their affinities and ties of dependency (Soper, 1995: 312). Their nature-centred beliefs urge them to tend 'God's Earth', avoid waste and excess, recognise the spiritual in all non-human existence and, above all, to revere the creative force through acts of homage and environmental responsibility. For some ecocentrics (arguing for a weak anthropocentrism), the starting point is human consciousness and social concerns such as social justice or the quality of life. They look to radical changes in the ways societies are organised and interact with one another. For example, they demand the redistribution of power towards a decentralised, federate economy with more emphasis on informal economic and social transactions and the pursuit of participatory justice. Ecocentrism is broadly divided into two categories: 'communalism' and 'deep ecology'. Communalism sees in the nature metaphor a symbol of a new community based on federated political structures which is economically self-contained and much more effective collectively and at the individual level. Deep ecology and 'gaianism' ' propose faith in the rights of nature and of the essential need for co-evolution of human and natural ethics.

However, things are not as clear as it appears above since the practical issue of getting the green ideology across has led to contradictory messages from its theorists about the nature of

anthropocentrism. For example, Dobson (1995: 61) argues that concern for humanity at the expense of concern for the non-human world is the basic cause of continuing environmental degradation and potential environmental disaster. To help resolve the contradictions, Dobson distinguishes between 'strong' and 'weak' meanings of anthropocentrism. Drawing on Fox's ideas, he understands the strong meaning as seeing "the non-human world purely as a means to human ends" (Fox, 1984). This is similar to Arendt's (1958) criticism of Man *qua Homo faber* for his "anthropocentric utilitarianism" who, as "measure of all things" regards nature and the "things themselves" as mere means and as valueless material for his own consumption or production-related ends. On the other hand, Fox (1984) refers to the weak meaning as having to do with being 'human-centred'. For Dobson this means that the weak sense is more obviously 'neutral' than the strong sense in that it is an unavoidable trait of the human condition. Thus, people's conscious actions are anthropocentric by definition. Sometimes, these two positions, the strong and the weak forms of anthropocentrism, are called 'human instrumental' and 'human-centred', respectively, and they are comparable with the above description of *interventionism* and *accommodation*, respectively. My view is that it is essential to avoid human instrumental reasons for taking care of the environment and it is necessary to encourage the re-introduction of the human into the green political agenda in a non-anthropocentric way (or weak anthropocentric way). By placing the onus on human hubris and domination rather than on capitalist appropriation of human social and non-human nature, these dominant forms of environmentalism appear to mask the role of economics and particularly capitalism in the continuing environmental destruction.

Over the years, green politics has moved from the fringe of voluntary pressure groups into mainstream party politics, manifesting itself in debates over defence, energy production, transport and the protection of wild places and habitats. The political message of green politics is supported eloquently by a small group of media-responsive people such as Jonathon Porritt in the UK, Ken Saro-Wiwa in Nigeria (executed by the Nigerian military government in 1995 for leading the Ogoni people's objections to Shell's environmental devastation of their land), Wangai Maathi in Kenya, Kim Chi-ha in Korea, Petra Kelley in Germany, Bruce Lalonde in France, and Hazel Henderson in the United States who all argue for the imposition of

constraints on the free operation of economic rationality as developed by capitalism. Merchant (1992) sees in this radical message an assertion that green politics represents a

> new consciousness of our responsibilities to the rest of nature and to other humans. It seeks a new ethic of the nature and the nurture of people. It empowers people to make changes in the world consistent with a new social vision and a new ethic.

However, Wissenburg (1997: 40) explains that the categorisation of greens in politics is difficult since one must distinguish between deep and shallow green, green and Green, and green and grey. Whereas 'grey' is consistent with every denial of an environmental crisis", advocates of both 'green' and 'Green' both recognise the reality of a global environmental crisis. However, whereas 'Green' refers to theories in which nature has overall importance, in 'green' theories nature is one consideration among others. The labels 'deep' and 'shallow' are used in two ways: either as synonyms for Green and green, respectively, or aligned with the philosophical and ethical ideas of shallow and deep ecology.

Like ecocentric environmentalism, the brand of green politics called 'ecosocialism' also rejects the excesses of capitalism. Its concern is to expose the romanticism, utopianism, idealism and conservatism that much Western environmentalism subsumes. Moreover, it questions whether nature or ecology can be unambiguous sources of moral and political values, in the way that some greens suggest. In arguing that ecosocialist politics appeals more widely to the mass of the world's people, ecosocialism builds on Marxist analysis, and the shared perspective of Marxism, anarchism and deep ecology, so that people can control their own lives and their relationships with nature. For ecosocialists, the 1992 Earth Summit (UNCED, 1992) clearly confirmed their view that Western capitalism is reluctant to change the ideology and practices that perpetuate environmental degradation and social injustice. The primary aim of a radical curriculum reflecting ecosocialist ideals is the questioning of conventional wisdoms of our society, which has a worldview substantially predicated on the assumption of capitalist ideology. This involves questioning the role of science and technology in worsening the ecosocial crisis. This radical curriculum would also expect students to consider alternative worldviews, to explore how, and from where, particular worldviews come about, and to believe that humans can act collectively and successfully to change and shape their society, and

their own nature (Pepper, 1987: 68). A socially critical theory of education embraces these aims (Section 2.5).

Ecofeminism is a conspicuous strand of environmentalism. First used in 1974 by the French writer Francoise d'Eaubonne, the term *ecofeminism* represents a convergence of environmental, feminist and women's spirituality movements. The recurring theme in the ecofeminist movement is "that women are less severely alienated from nature than most men" (Griffin, 1988). However, as (Segal, 1987) notes, the male/female images of nature differ. In some of these, the male is regarded as closer to nature by being forceful, violent, animal like and instinctive. In others, the female is seen as the product of culture, tamed, domestic, and civilised. In other symbolisms, there is a reversal of this dichotomy. The male becomes the creature of culture while the female becomes instinct and biology. It would appear, then, that there is no consistent connection of man or women with nature. Nevertheless, ecofeminism is a diverse activity and finds expression worldwide through feminist poets, historians and philosophers who have begun to explore and revalue the relationship between women and nature. By searching for an understanding of nature and society from a perspective that is different from the dominant Western cultural view, ecofeminists see the women-nature link as a vantage point in the struggle for new ways of relating to nature that are not characterised by domination and control. Thus, Shiva (1989: 47) calls for an 'environmental science' that incorporates a feminist perspective that values diverse ways of knowing and is holistic in approach. She says:

> [W]omen and nature are intimately related, and their domination and liberation similarly linked. The women's ecology movements are therefore one, and are primarily counter-trends to a patriarchal maldevelopment.

Indeed, Jackson (1994: 124) sees women closer to nature than men since they oppose the domination of nature by humanity and insist that nature has no hierarchies like those derived from hierarchical human societies and imposed on nature. However, whilst Jackson accepts that ecofeminism is essentially ecocentric, she argues that the empirical evidence for women being universally closer to nature than men seems to be limited. She suggests that part of the

problem is that ecofeminists tend to see nature not as culturally relative but as biological facts; for example, as a nurturing mother, whereas what is needed is a feminine 'essence' that "remakes humanity in a feminine form through historically and culturally specific understandings".

Yet, many early societies were at least matrilineal, if not fully matriarchal and some ecocentric environmentalists continue to use the imagery of Mother Earth - 'Gaia' is a name taken from the Ancient Greek Earth goddess (Lovelock, 1991). However, ecofeminism has now moved beyond a direct association with goddess religions but these origins of the ecofeminist movement still attract some criticism. Whilst most feminist scholars agree that women are to nature as men are to culture, construed as a 'natural law' and as a power relationship, ecofeminists are not so clear about the implications of this 'law' for forging a strategy to advance their struggle to protect the environment. Indeed, Jackson (1994) questions the idea of a positive synergism between women's gender interests and environmental interests and argues that this represents a denial of the social and historical construction of nature. For example, the Chipko movement in India is widely regarded as an example of the spontaneous mobilisation of women in defence of the environment. Its slogan 'What do the forests bear? Soil, water and pure air' are said to show women's essential ecological understanding. Yet, what is under-emphasised is an analysis of the material and historical conditions that led the Chipko movement into environmentally protective behaviour.

I have shown that it is not easy to resolve the differing ideological strands within the environmental movement since people use the terms ecocentric, technocentric, and anthropocentric in somewhat different ways. Moreover, it is common in the literature to see reference to such green political categories as radical and mainstream environmentalists and ecologists, light or dark greens, Greens or greens, red-greens or green-greens and so on. O'Riordan (1989) sees this complexity as the reason why it is wrong to equate environmentalism with green politics, since the former embraces "a collage of values and views of the world, a general patterning of predispositions, being first and foremost a social movement, though one with political overtones". Indeed, many radical environmentalists distance themselves from electoral politics because they believe politics is 'part of the problem

not the solution'. The prevailing inclination for the acquisition and accumulation of various forms of power that lead to the domination and exploitation of both humans and non-human nature, underscores mainstream politics. Thus, radical environmentalists shun any involvement with electoral politics since it results in contamination of principles and cooptation into the existing system, and therefore inadvertently legitimates domination and exploitation. Radical ecologists frequently reject questions of difference and commonality, unity and diversity, since they claim that benefits and strengths spring from a tolerant eclecticism. However, the diversity of views within the traditional environmental movement is seen sometimes simplistically, e.g. as the work of extremist sections of society, and they tend to overlook the various shades of being 'green' reflected in the technocentrism to ecocentrism range of beliefs.

I have noted two key challenges for environmentalism. Firstly, how should it respond to the environmental risks accompanying the spread of disorganised capitalism? For many environmentalists, people's indifference to the state of the environment is because of the spatial and temporal scale of these risks and, as a result, people become increasingly reflexive about environmental risk whilst pursuing consumer lifestyles that contribute to more risk; and so the ecosocial crisis continues to worsen. Secondly, and a related concern for environmentalists and environmental educators, is how it should resist becoming wedded to the worldview of global economics since, in the names of sustainable development, global management and fragile Earth, it is progressively cleansed of its radical nature and refashioned as expert, value-free knowledge (Hajer & Fischer, 1999: 2). Radical environmentalism needs to resist this tendency for it falls into line with the ecological modernisers who see technical solutions to the ecosocial crisis as the preferred way of repairing the wrongs misplaced technology causes to human social and non-human nature, and it therefore represents the weak version of sustainable development (Chapter 1.6).

4.6 The concept of nature

4.6.1 In the context of the MA course

The concept of nature lies at the heart of concerns about the environment and is therefore a matter for students' critical attention in the *MA in Environmental Education* course. Nature is

seen by different people in different ways reflecting, as Soper (1995) points out, nature as a metaphysical concept relating to the non-human, nature as realist concept referring to the causal powers and processes of a physical world, and nature as a lay concept referring to an environment unspoiled by humans. Students begin a critical analysis of 'nature' in *Module AN2: Perspectives on the Environment: differing ideologies and utopias.* This Module explores the changing relationship between humanity and nature over time. It considers European accounts of nature from the late Middle Ages until the present day, and it reflects on differing historical and cultural interpretations, whether nature means 'wilderness', or is 'socially constructed', or is regarded as a physical or spiritual resource, and so on.

Fig 4.8 shows an example of a Student Activity from this module that focuses on students' understanding of 'otherness' in nature, on the concept of 'wildness' and how difficult it is to escape our anthropocentric view of the reality of nature. Yet, as the philosophy of critical realism asserts (Chapter 2.4), human activities are an indissoluble part of natural processes and systems so that the existence of 'nature' is a condition for sustaining these activities. As Soper's (*ibid*) distinctions indicate, students' responses vary as to how they see and respond to nature. For example, Rita Dent (Malawi; Module AN2 assessment, January 1995) wrote:

> *The statement "we should value nature not only for its instrumental value to us but also for its own sake" (Eckersley, 1993: 42) feels to me to be acceptable in the sense that we can value nature for its own sake and not see it in only relation to its usefulness. However, I feel it is not acceptable for us to claim to know the values that nature would have and would make for itself, if it could. Sylvan & Bennett (1994: 5) include this statement:*
>
> > *"The well-being and flourishing of human and non-human life on Earth have value in themselves (synonyms: intrinsic value, inherent value). These values are independent of the usefulness of the non-human world for human purposes."*
>
> *While I can agree that non-human life should not be categorised simply as being useful to humans or not (I can use the argument that it is immoral to do so), it would be a leap of faith for me to say that I can know anything about the intrinsic value of a bird because I am firmly rooted in my human-ness and cannot say what values the bird has to itself.*

Further consideration of nature takes place in *Module AN3: Student Activity from Module AN3: Enquiring into the Environment: What Knowledge? For What Purposes?* Here the

purpose is to encourage a more philosophical understanding of nature through an examination of the claims of modernist and postmodernist thought as they relate to science, society and the environment (Chapter 2). Module AN3 is concerned with ways of knowing, modes of representation, and contrasting beliefs and values for establishing a framework of meaning for analysing the contemporary socio-environmental debate and the significance of the 'nature' concept to it. Fig 4.8 shows an example Student Activity from this Module where the focus is on ontological and epistemological questions concerning the nature of reality. In response to some of the issues raised in Module AN3, Marina Lewis (Mexico; Module assessment, November 1996) wrote:

> *The overarching paradigm of Western science is not environmentally propitious. It may be that the authority of science is actually preventing us from recognising and responding to the real global crisis. So far, science is seemingly untouched by critical political, cultural educational and societal analysis. This reductionist cultural notion of sound science has been so widely accepted that it has become institutionalised in both the United Kingdom's research policy and indeed, educational policy. In recent history, science as an enterprise devoted to domination and exploitation of nature is used to prop up the status quo. [She quotes Seagar, (1993)]:*
>
> > *For every expert who says that global warming is imminent, there is another who says there is not problem; for every claim that a given chemical will cause health damage, there is a counter-claim, both based equally on scientific fact. Scientific uncertainty promotes inertia ... Rich world governments that have the biggest fiscal and policy stake in science are the most likely to defer environmental action in favour of more research.*

In the rest of this section, I extend the discussion in Chapter 2.4 to argue that the interpretivist view of reality, specifically in relation to the social construction of nature, overlooks certain ecological imperatives that derive from my understanding that nature, as a closed system, cannot sustain endless economic growth. Key terms guiding this discussion are *positivism*, *strong* and *weak interpretivism*, and *critical realism*.

4.6.2 Meanings and contradictions

Debates about human relationships to non-human nature (Dickens, 1996; Adams, 1996; Soper, 1996; Gorz, 1980; Peterson, 1999; Bonnett, 1997) derive not just from the significance of nature to sustaining life on Earth but from the meeting of two differing philosophies: positivism

and interpretivism. On the one side stand broadly 'naturalist' or 'realist' philosophies premised on the ontological assumption that there exists a natural world separate from human

2.3(a) Student Activity
Representations of Nature

Set reading:
Please read Sections 1.4 and 1.5 in Chapter 1 of Plant, M. (1998) *Education for the Environment: stimulating practice*, and answer the following questions in your Research Diary.

1. To what extent do you agree that humans need to re-establish an ethical relationship to nature if they are to halt environmental destruction?
2. What do you think is meant by saying that something has a 'natural status'?
3. Can you recall an experience that revealed to you the idea of 'otherness' in nature which some writers invite us to consider? Is it possible to describe, or convey in some other way, that experience to others?
4. In about a 100 words describe what you mean by the quality of wildness in nature. Do you think we can ever know what wildness means?
5. How difficult is it to escape our inevitable anthropocentric view of the world and experience what nature is really like? Can we be certain that there is a real nature?

Fig 4.9 Student Activity from *Module AN2: Perspectives on the Environment: differing ideologies*

3.3(a) Student Activity
Reflections on Reality

At the beginning of the section two fundamental questions were highlighted, one ontological and the other epistemological. Consider the claims and assumptions involved in asking such questions. Then reflect upon the observations and statements you have made in your Research Diary and also in your previous assessments and attempt to answer these questions in the form:

1. How do you represent social reality within your writing? Implicitly, you will be making ontological claims and assumptions about social reality - what exists, what it looks like, what units make it up and how these interact with each other.
2. How can knowledge of this social reality be obtained? Again, implicitly you will be making epistemological claims and assumptions about how what exists can be known - how it is possible to gain knowledge of this reality, and the criteria such knowledge must satisfy in order to be called knowledge.
3. Attempt to construct your own philosophical position and represent it in table form as shown above.

Fig 4.10 *Student Activity from Module AN3: Enquiring into the Environment: What Knowledge? For What Purposes?*

experience, a concept-independent reality of the natural world that has been made the object of human exploitation and destruction and which needs to be protected from these excesses. The implication of this assumption is that the natural world exists whether humans exist or not - an assumption with which I agree as I explained in Chapter 2.4. On the other side, stand interpretivist approaches that focus upon ways by which different conceptions of nature are culturally constructed and used to fulfil different social norms. Soper (1995) refers to these two positions as 'nature-endorsing' (of the positivists, or realists) and 'nature-sceptical' (of the interpretivists, of constructionists). Burningham & Cooper (1999) see this distinction as a rather tiresome debate but I want to explore it here because of its relevance to the *MA in Environmental Education* course processes.

The classic statement of the constructivist approach, that all knowledge is irretrievably connected to a reality that is produced, bounded and sustained by human meanings and constructions, was advanced by Berger and Luckman (1967: 1) who claim that:

> The basic contentions of the argument of this book [their book, *The Social Construction of Reality*] are implicit in its title and subtitle [*a treatise in the sociology of knowledge*], namely, that reality is socially constructed and that the sociology of knowledge must analyse the processes in which this occurs ... It will be enough, for our purposes, to define 'reality' as a quality appertaining to phenomena that we recognise as having a being independent of our own volition (we cannot 'wish them away').

Thus, phenomena that we recognise as beyond being 'wished away' are socially constructed. In this focus on the cultural construction of nature, nature has no place since Berger and Luckman base their research on the idea that "man produces reality and therefore produces himself" (*ibid*, 1967: 183). Murphy (1995: 689) sees this view deriving from a belief in "a radical discontinuity between humans and non-human animals", following Berger and Luckman's contention (1967: 47) that:

> All non-human animals ... live in closed worlds whose structures are predetermined by the biological equipment of the several animal species. By contrast, man's relationship to his environment is characterised by world-openness.

Berger and Luckman's view that wanton collective human disregard for the ecosocial crisis is justified on the grounds that 'world-openness' appears to absolve humans from any consideration of natural limits. If this is so, then the limits to economic growth are social not ecological which supports Bookchin's view (1987: 51, cited in Murphy, 1995: 689) that "sociology sees itself as the analysis of 'man's' ascent from 'animality". Dunlap & Catton (1994) also argue that sociologists ignore the relationship between the processes of nature and social action, choosing instead to interpret environmental issues as socially constructed 'social scares'. This implies that, in the epistemology of the social construction of knowledge (Whitty, 1977: 37),

> truth and objectivity are seen as nothing but human products and man rather than nature is seen as the ultimate author of 'knowledge' and 'reality'. Any attempt to appeal to an external 'reality' in order to support claims for the superiority of one way of seeing over another is dismissed as ideological[85].

If Whitty is correct, then the consequences of humans 'constructing nature' is that both non-human nature and human social nature are progressively reduced as science and technology continue to intervene in non-human nature in a reckless bid to satisfy human longing for material progress. There is a contrasting view that nature exists only as a human construction. It is the idea that there is no great divide between humans and nature, no privileging of the human species above all others; rather it is the idea that human kind is intimately bound in with the rest of nature, at least ecologically speaking as Beck (1992a, 80-1) argues:

> Nature can no longer be understood *outside* of society, or society *outside* of nature ... in advanced modernity, society with all its subsystems of the economy, politics, culture and the family can no longer be understood as autonomous of nature (original italics).

Beck here is reflecting my own worldview for to say that meaningful reality is socially constructed is not to say that it is not real. Humans and their environment - unlike subject and

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[85] Hoffman (1994: 75) argues that the danger of using interpretivism as a paradigm of enquiry most suited to address environmental problems is that "within constructivist methodology there lurks Nietzsche's abyss". Here Hoffman is referring to the Nietzsche's (1968) realisation that since he was no longer bound to any 'truths' he was free to make his own 'truths'. Since reality has no real

object - are actually inseparable. For sociologists to propose that there is a radical distinction between humans and other life forms has allowed them and those who support them to present a lopsided view of the human-nature relationship. Sociology's myopic emphasis on the social has prevented sociologists from engaging with the interdisciplinary task of seeing the relationship between humans and nature (Murphy, 1995: 695). As Hoffmann (1994) argues, we should neither accept that reality is the inculcation of objective facts about it, nor believe that an observer can socially construct it; a view in keeping with the epistemology of critical realism (Chapter 2.3.4).

Dickens (1996: 73) asks whether there is a false dichotomy between the contrasting ontologies of realism and constructionism. Whilst accepting that our understanding of reality is socially constructed (it cannot be otherwise), Dickens (*ibid*: 73) differentiates between 'strong' and 'weak' constructions of nature. The strong version "denies the importance of nature as an object external to human experience" while the weak version, though still recognising "that all knowledge is both socially constructed and contestable", does not view all knowledge as endlessly contestable: "Some concepts and theories can be considered verifiable through repeated experience and intersubjective agreement". In other words, realists do not rely solely on constructions of nature to explain concrete events but depend on mechanisms and structures that are "real, causal and extra-discursive" (*ibid*: 74). Therefore, I argue, along with Dickens (*ibid*: 42) and Murphy (1995) that it is insufficient for sociologists to contain an understanding of the relationship between humanity and the natural world within sociology itself since such a position does little to address the urgency of finding ways to improve human consideration of nature.

My summary of this positivist-interpretivist debate with regard to nature is that I believe that there are serious consequences for sustaining life on Earth if nature is understood as simply a human construct because, while science and technology continue to intervene in non-human nature, both non-human nature and human social nature are progressively reduced. In advocating restraint on human (ab)use of nature, Benton (1999: 60) contends:

'existence and thus provides no criteria for decision-making, he was free to make his own decisions; a

> [Environmentalists] are not naïvely calling for a return to a past 'pristine' nature. On the contrary, they are drawing upon a much richer and inclusive concept of interconnected complexity and dynamic process in nature.

How can an ideology be established that truly describes nature in itself when any claims that nature might be real and have intrinsic value is problematised by the inescapable deduction that humans cannot speak *for* nature, only speak for *their interpretation of* nature? Moreover, this 'interpretation' cannot be a universal concept since how we understand nature and our relations to the non-human world varies widely by culture and epoch, even to the extent that individuals within a culture may interpret nature in radically divergent ways (Peterson, 1999: 340)[86]. As far as Western culture is concerned, Manes' contention is that "nature is silent" (Manes, 1992: 339, cited in Torgerson, 1999: 188).

Part of the problem of pinning down an understanding of 'nature' is that very little of the world we know today is 'natural' if that means free from human intervention. Indeed, there is evidence that considerable destructive exploitation of nature occurred before industrialism (Simmons, 1993). People in pre-industrial times altered environments by hunting, fire, and agriculture by virtue of their need for survival so when we speak of nature it is already a cultural product or construction (Soper, 1995: 152). Moreover, as McKibben (1989: 49) argues, climate changes caused by burning fossil fuels have radically altered global ecosystems so extensively that one can no longer speak of a 'nature' free from human intervention. Although I accept that whatever nature means is a fleeting and culturally inclusive concept, I believe that in the interests of sustaining life on Earth environmental education should not simply be concerned with understanding the complexity, diversity and vulnerability of a nature as reality 'out there'. Rather, Bonnett (1997) confirms my belief that:

> [H]ow we reveal [nature] to ourselves is a primal conditioner of our experience as a whole and is constitutive of our own identity, our sense of place and purpose in

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self-determined 'will to power' was all that was left in the face of nothingness.

[86] Peterson (1999: 43) argues that ways of constructing nature might more accurately be described as ways of *construing* it since what is constructed is not the objects themselves but their identities and worth in a particular cultural context.

> the greater scheme of things. We exist *in* our relationship to nature (original italics).

By recognising that humanity appropriates nature through labour and technological advancement, political ecology[87] avoids what the Brundtland Report (WCED, 1987: xi) asserts is a tendency to dissociate human behaviour and environmental problems. That is, between humans and non-nature there is a dialectical relationship; it is a reciprocal process since, while humans transform nature, nature plays its part in transforming humans. In this sense, political ecology links with Marx's critical thought regarding the role of politics in the relationship between humans and non-human nature (Chapter 2.4). Moreover, political ecology cuts across the traditional spectrum of ideologies from ecocentrism to anthropocentrism and carries with it all the ideological currents that have characterised modern political thought (Eder, 1996: 178). That is, conservative, liberal and socialist ideologies all provide legitimation for human agency on the environment, and means that political ecology has neutralised the competing deep-ecological and conservationist ideologies by integrating them (*ibid*, 191).

4.7 Reflections

This chapter shows the learning opportunities presented to *MA in Environmental Education* students so that they can engage critically with the complexity of human relations with the biophysical world. Through self-supporting reading and research, this is achieved by focussing principally on the six concepts that structure this chapter. In Section 4.6, I have drawn attention to the political dimensions of these concepts as fundamentals of the prevailing environmental ideology. For example, that 'environmental' matters are not simply to do with the world 'out there' requiring intervention to protect it as conservationists would have it, but with economic and political matters that are an integral part of the dialectic between humans and the rest of the biophysical world.

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[87] The term 'political ecology' focuses attention on the social and political relations between humanity and nature, and to emphasise that there are natural limits to human activities. The integration of political ecology into a consideration of how to respond to environmental concerns moves one's understanding away from the idea of an *environmental crisis* (that is, a crisis affecting 'first nature') towards the idea of an *ecosocial* crisis (that is, a crisis affecting 'second' nature). Indeed, underlining discussion of the six concepts examined in this chapter, is the ambiguity surrounding the meaning of 'nature'.

The conflicts that I have drawn attention to in this chapter, marked by the diversity of interpretations of the six concepts, are all an expression of divergent values taking the form of political narratives in which certain values are allowed to determine public discourse. In advancing a discursive, socially critical approach to averting the ecosocial crisis, I conclude the following. That it is not only necessary to embrace fully the contradictions of language when examining the conceptual understanding of the ecosocial crisis, but also to "face the vexed issue of political agency head-on [so as not to obscure] the realities of conflict and vested interests" (Bourke & Meppem, 2000: 309). The examples of student activities and selected students' responses illustrate how the *MA in Environmental Education* course encourages the exploration of these discursive practices within present socio-political structures. Whilst it could be argued that the complexity and conflicting viewpoints characterising environmental ideology is negative and constraining, blurring the students' vision and understanding of the ecosocial crisis, I believe that the ambiguity and decentredness of the concepts are potentially liberating in that they offer the students alternatives to unchanging assumptions. This postmodern stance celebrates difference, contradiction and uncertainty, and is an essential qualification for students' access to the kind of learning offered in the *MA in Environmental Education* course through which they can practise argument and contemplate alternatives when exploring the relationship between human social systems and the rest of the biophysical world.

Just what are the implications for my students engagement with 'difference and contradiction' in connection with humanity's dialectical relationship with the biophysical world? In the first, place it reveals the "uncertainty and lack of understanding that really constitutes today's 'life politics'" (Dickens, 1999: 111). This uncertainty demands, as I have argued in Section 4.4.2 in connection with Beck's (1994) thesis of reflexive modernisation, that my students are more reflexive about the political forces that shape their lives, as to be expected of a critical social theory of education (Chapter 2.5). However, is reflective learning the same as reflexivity? Dyke (1997: 2) conflates the terms by arguing that, "education in the form of reflective learning has a central role to play in enabling people to meet the demands of living in a risk society and a period of 'reflexive modernisation'". Giddens (1995, cited in Chignell & Abbott, 1995: 11) also quite explicitly associates reflexivity with reflection:

> I use it to mean just the generic fact that we are reasoning beings who reflect on the conditions of our activity, and that all human beings are like that; but I also use it in the sense of social reflexivity or institutional reflexivity ... essentially a world where you have constant or organised reflection on the conditions of our existence as a means of living those conditions.

Students' reflective/reflexive approach to their studies is evident from the excerpts included in this chapter, and these approaches are essential ingredients for a critical theory of education that subscribes to a critical realist worldview. In the next chapter, I reflect on how reflective/reflexive learning enables me to apply a critical realist perspective to engaging my students in constructing knowledge that can advance their professionalism in environmental education.

The discussion in this chapter leads me to propose:

1. That Foucault's insights into how power is situated at the heart of any consideration of social change and experience, is revealed by the examination of the six concepts in this chapter.
2. That political ecology provides insights into the social and political relations between humanity and nature, and it emphasises that there are natural limits to human activities.
3. That unfettered capital accumulation is the principal cause of escalating inequality, exclusion and environmental destruction.
4. That, as a student becomes confronted with the reality of political power structures, and becomes more reflexive about themselves and the society in which they live, they undergo shifts transforming their self-identity.
5. That critical realism recognises the inescapable embeddedness of all human activities in natural processes and systems; and that recognition of the existence of a real world is a pre-condition that these activities can be practised and sustained.

Chapter 6 evaluates these proposals by means of the following two further research questions (in addition to the two at the end of Chapter 3):

1. What are the implications of the contradictions surrounding the concept of sustainable development for the content, pedagogy and evaluation of the MA course?

2. How does the students' critical engagement with the difficult theoretical issues in the MA course advance their professionalism in the field of environmental education?

The first question follows from my reflections in this chapter on the complex issues associated with understanding and responding to the ecosocial crisis, in particular the significance that students attach to the concept of sustainable development in their varied cultural contexts. The second question extends the first by asking how MA students engage with the conceptual complexity of the ecosocial crisis and the implication of this for their understanding of the nature of environmental education in a risk society.

CHAPTER 5

RESEARCHING *PRAXIS*: a strategy

If our research is to be *praxis*-oriented, if our purpose is somehow to change the world, then of necessity we must get involved with those whom we study. I am arguing that the researcher/author has three tasks: the researcher engages the researched in a self-reflexive encounter; the research 'act' - the book, article or presentation - brings to light the inequities of power that may exist; and that the researcher actively works for care and change.
(Tierney, 1994: 110, 111)

5.1 Introduction

On page 8 I justify an unconventional format for this dissertation allowing me to theorise at every stage of the research by adopting a reflexive stance throughout. This break with the "theory/method/results nexus" (McWilliam, 1993: 200) has allowed me to present the preceding chapters as important foundations to the present focus on evaluating my students' *praxis*[88]. Chapters 1-4 are an integral part of this reflexive research process that continues in the next chapter where I evaluate particular theoretical issues arising from the dialogical course processes. I suggest that this reflexive orientation is appropriate for the *MA in Environmental Education* course since it does not align with any ready-made model for such courses charged with advising me *what* 'content' I should include in the course, *how* it should be administered and *whether* what it offers is appropriate for an international body of students. The course is in no way a standardised programme taken 'off the shelf' and run according to prescription. Of course, the programme is subject to assessment review and quality appraisal pertaining to Masters courses in my university and faculty, but hitherto little guidance has been available as to the academic standards required of such an MA course from within the University or from Government. What I have been able to do is to refer in Chapter 3.5 to two other international MA/MSc courses in the field of environment and development in order to show that critical pedagogy and the substantive environment and development issues these courses deal with are similar to my own course.

Tierney's (1994: 110, 111) quotation above is important for it draws attention to the three assumptions that guide my research:

- That my research account shows a 'self-reflexive encounter' with theoretical issues (Chapter 2), and with the pedagogical and operational issues embedded in the MA course (Chapter 3);
- That my 'research act' ... brings to light the dialectical processes involved in mediating the course to my students (Chapters 2 and 4);

[88] I have already referred to the meaning of *praxis* and its significance for my research in Chapters 1.3, 2.3.2, 2.5.1 and 3.5.

- That "the researcher actively works for care and change", as in relation to my own professionalism (Chapter 1) and that of my students with whom I am involved dialogically (Chapters 3 and 6)[89].

These three assumptions will lead me, via Chapter 6, to respond to the four component research questions, following the main research question, which I repeat below:

Main research question

To what extent can I establish a sound theoretical basis for realising socio-cultural and ecological sustainability through a Masters course in environmental education?

The component questions

1. To what extent does a distance education course that is written and taught in a western country stimulate a student's critical reflection about ecological and professional issues that are of significance to them in their particular socio-cultural context? Crucially, what are the goals and processes of distance education in a world that increasingly reconfigures space and time?

2. What critical insights does the research reveal about my role as an environmental educator/researcher in higher education? For example, to what extent am I able to empower my students to bring about social change through a socially critical approach to environmental education? Moreover, in what ways am I empowered in this process?

3. What are the implications of the contradictions surrounding the concept of sustainable development for the content, pedagogy and evaluation of the MA course?

4. How does the students' critical engagement with the difficult theoretical issues in the MA course advance their professionalism in the field of environmental education?

[89] Fig A (page 15) shows the chapter sequencing, and Fig B (page 16) the reflexive nature of the

In this chapter, I set out a strategy enabling me to deepen my response to these questions and to enlarge my understanding of the *praxis* of a critical theory of environmental education as it has emerged from the students' professional activities and my role as their tutor. In identifying a point of departure for doing this, one that is '*praxis*-oriented' as Tierney proposes in the quotation above, I assume three essential 'truths':

1. The intention of the dialogical processes that I have drawn attention to in Chapter 3.3 and 3.4 is to help students reflect on their teaching in ways that are supportive of social change through empowerment, ideology-critique and political action (Malone, 1999). This close student-tutor relationship makes it difficult for me regard the MA course as the *object* of my research, but as the *subject* of my research since I am 'caught up' in the students' learning (Section 5.2.2, below).

2. In trying to effect social change and individual empowerment as environmental educators/researchers, we (the students and myself) behave as environmental activists in the sense that we want to go beyond consciousness-raising and engage in political processes that face up to the *social* causes of the ecosocial crisis - that is we aim to become 'socially critical'. This activism acknowledges the role of power relations in the formation of knowledge about the ecosocial crisis to which I have drawn attention in Chapter 4.2.

3. My research does not exist independently of my values and assumptions, and therefore contradicts positivist claims that research requires value-neutral objectivity (Lather, 1986, 1988; Robottom and Hart, 1993b; Tilbury and Walford, 1996; Chapter 2.3.1). That is, I make my theoretical perspective explicit through the reflexivity of the research account. However, by making my partiality known, this research account may be open to the charge of bias but, as Griffiths (1999: 133) argues, "bias comes not from having ethical and political positions - this is inevitable - but from not acknowledging them". Therefore, by being reflexive, I am less likely to discredit any insights that I

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research account.

arrive at, and I am more likely to respond critically in my evaluation of the research processes and research outcomes (see Section 5.2.2, below and Chapter 7).

These three 'truths' help to structure this chapter. Section 5.2.1 summarises the theoretical perspective of critical realism and its underpinning critical theory as it emerges from the discussions, largely in Chapter 2. Section 5.2.2 expands on the notion of reflexivity that shapes this research account and to which I have already drawn attention to in Chapters 1.6, 2.4.2, 2.6 and 4.7. In Section 5.3, I discuss the relevance to my research account of reliability, validity and generalisability in connection with research findings. Section 5.4 brings into the open ethical matters that govern this research process and that mainly centre on issues connected with my tutorial interactions with students. Section 5.5 summarises the methods I have used in deriving data from these interactions including a strategy that provides further insights into the four research questions that are listed above. Finally, in Section 5.6, I reflect on the potential of the research strategy outlined in this chapter to answer the research questions.

5.2 Theoretical perspective

5.2.1 Review of philosophy and methodology

In Chapter 2, I argue that theoretical issues are not purely a technical matter since that could lead researchers to consider only those questions that conform to the methods for gathering data. In that case, the researcher could lose sight of the way research questions tend to influence methodology and outcome. That is why the four component questions I have derived *follow* rather than precede analysis of pedagogical issues (Chapter 3) and theoretical issues (Chapter 4). In other words, as Popkewitz (1991: 78) argues, my "choice of technique is a moral responsibility [for it] "emerge[s] from a theoretical position and therefore reflect values, beliefs and dispositions towards the social world". In taking on this 'moral responsibility', and following the discussion in Chapter 2.4, I have considered that my *ontological perspective* (or worldview) corresponds to a socially constructed social reality but one in which social arrangements and understandings are determined by underlying structures and mechanisms of a real world. Bhaskar's critical realist philosophy inscribes this worldview.

As I explained in Chapter 2.4, it follows that my realist *epistemological perspective* aims to substantiate theories of the structures and mechanisms that would account for this ontological perspective by evaluating the theoretical grounding of the interactions I have with my students.

In Chapter 3.5, I emphasised my interest in evaluating the educational processes that are disclosed principally through the dialogical and written communication between the students and me. The four component questions listed above in Section 5.1 refer to these processes. Following the discussion in Chapter 2.4, the methodology used for this evaluation is by means of two overlapping methodologies, critical ethnography and critical action research. Critical ethnography means approaching students' understandings within their cultural and/or institutional context while critical action research means extending these understandings by producing knowledge that is directly useful in enabling us to "take sustainable social action for a 'better' environment" (Hillcoat, 1996). Critical ethnography allows me to use methods such as analysis of students' coursework and their formal assignments in order to understand the meanings students give to the learning processes and substantive content of the MA course. In order to extend the goals of critical ethnography, I use critical action research with its inherent reflexivity to help the students to become more active professionally (Chapter 2.6). Critical action research also focuses on my competence to negotiate the course processes and content to a culturally and professionally diverse group of postgraduate students; and to reflect critically on my role in these transactions. In acknowledging the experiences of my students (Fien & Hillcoat, 1996: 36), I am interested in understanding and critique as we share meanings in our attempts to overcome barriers to educational change. Clearly, in emphasising this dialectical relationship, I am not investigating something that is 'outside' of myself since I am connected to the object of my research, the students, through social interaction[90]. Thus, I am claiming to be an active participant in the social worlds of my students "who are already busy interpreting and understanding their environments" (May, 1997: 138). Reflexivity is fundamental to these dialectical interactions as I explain below.

[90] I hold, along with Davies (1999: 3) and Selby (1998), that even in the most objective of sciences such as astronomy or fundamental particle physics, questions arise as to whether observers are as cut off from the focus of their research as they might think.

5.2.2 Critical realism and reflexivity

In Chapter 1, I reflected on Habermas' project to reconstruct the modern process of rationalisation in accordance with Enlightenment principles in order to argue for a socially critical theory with the potential to transform environmental education. As the previous chapters have shown, my understanding of the challenges and opportunities for a critical theory of environmental education draw from the critical action research focus of the students' learning and my dialogical interaction with them. A key aspect of the methodology of critical ethnography/critical action research learning processes is reflexivity so long as, as Davies (1999) warns, "they [the researchers] do not lose sight of their responsibility to seek *explanatory* abstraction and not primarily to report on individual experience". Huckle (1999a) adds that reflection must go beyond explanation to become transformative so that reflexive self-monitoring occurs (Chapter 3.6). In presenting the assumptions of the contextual and theoretical issues discussed in previous chapters, I believe I am being both explanatory and transformative in three ways.

Firstly, I am interested in how the support of my students' reflective practice leads to their empowerment in bringing about a socially conscious form of political action in the interests of social and ecological sustainability. The examples in Chapter 3 of how I sustain dialogue with my students, and the illustrative material from the Study Guides provided in Chapter 4, show how the course processes and content attempt to bring about students' empowerment (Chapter 2.6). The open nature of the course materials (Chapter 3.3.2) and the kind of tutorial support I give them (Chapter 3.4) acknowledges the social, cultural and political contexts of the students, and is an attempt to adopt Habermas' ideal speech situation which is orientated towards reaching mutual understanding of how and why a critical theory of environmental education is necessary. As I explained in Chapter 2.5.1, this understanding involves the identification of those aspects of the dominant worldview that frustrate the goal of ameliorating relations between human social nature and non-human nature.

Secondly, is the aim of achieving what Habermas calls 'an ideal speech situation' which he justifies with reference to his theory of communicative action. From the evidence provided in Chapter 6, I will judge the extent to which the students and I reach mutual understanding

discursively. By trying to establish and sustain these dialectical processes through communicative action, I aim to ensure that ther theoretical understandings of the contradictions we recognise in society should lead us to transform the conditions that give rise to these contradictions. These contradictions are evident in modern-day society whereby humans are alienated from external nature and their own inner natures by consumption patterns and media distortions that fail to see that humanity is deeply implicated in the ecosocial crisis Chapters 1.5 and 1.8.

Thirdly, my interest in seeing a critical theory of environmental education engage with the contradictions in the society-nature relationship leads me to argue as follows. The critically reflective stance required of a critical theory of environmental education is compatible with the ontological and epistemological perspectives of critical realism; and, crucially, that the perspective of critical realism underpinned by critical theory guides my tutoring of MA students. Thus, in summarising the discussion in Chapter 3, I claim that the 'open' nature of the *MA in Environmental Education* course texts and the dialectical style of the learning processes stimulated by the course texts are necessary conditions for encouraging students to engage critically with the issues and opportunities presented to them in their own cultural contexts. Furthermore, at the end of Chapter 4, I argue that a discursive and socially critical approach to their learning enables students to engage with 'difference and contradiction' in connection with humanity's dialectical relationship with the biophysical world, and with the political forces that shape their lives. In favouring the ontology of critical realism, I am holding the view that humanity must come to terms with its obvious dwelling *in* nature, and the ecological limits that this supposes, but at the same time it allows me to acknowledge a 'weak' socially constructivist perspective rooted in the inevitable anthropocentrism of human knowing.

A facet of the peculiar ontological status of society posed by critical realism is the fundamental reflexivity involved in obtaining knowledge of it (Davies, 1999: 19; Chapter 2.6 and 4.7). The consequence of this reflexive and dynamic research process is that methodology, findings and theoretical issues interact continuously as my work with students progressively focuses on meanings, contexts and learning processes (Maxwell, 1996). By being reflexive, I am able to

explore what it is that students experience in their *praxis* as they attempt to implement environmental education in their professional contexts, and to reflect on my own ideological subjectivity as representative of a critical theorist position (Chapter 2.5). From the perspective of critical realism, I am able to provide explanatory abstractions of my students' understanding of their *praxis* while at the same time acknowledging that this *praxis* is rooted in the concrete experiences of their everyday living. This implies the generation of a creative tension between *my* interpretation of students' environmental knowledge and *praxis*, and *their* understanding as lived experience.

By being reflexive, I am also able to draw on my experience of sharing ideas within the international research community, especially with regard to the possibilities for socially critical approaches to professional practice through distance education. For example, I have presented papers to research conferences in Southern Africa, Europe and the UK (Plant, 1994, 1998b, 1999a; Plant and Lawson; 1999b). In addition, I have contributed papers to refereed international environmental education journals (Plant, 1995a/b, 1997; 1999b), and I have had an academic book published (Plant, 1998a). These publications and the conversations I have had have enabled me to clarify my understanding of the research aims, context, process and findings and to situate my research account within the wider research community.

Not least, I have become sensitive to inequalities of power in my dealings with students. To use the 'captain/shipmate' metaphor, my inclination is to respond to students as 'captain' since the students perceive me to be the originator and 'guardian' of the MA course in keeping with my role as Course Director. Whilst my students know that the course materials contribute to evolving perceptions of what constitutes 'environmental education' teaching and research, they may want me to interpret these developments for them. In Chapter 3.4, I use example email exchanges to illustrate how the open dialogue I encourage provides the social context for this interpretation in order to avoid the power relations implicit in the tutor/student and insider/outsider dualisms. The extent to which I am a 'shipmate' or 'captain' in collaborating with them in trying to understand and operationalise environmental education in their professional and cultural contexts is an issue I return to in Chapter 6 7.

5.3 Reliability, validity and generalisability

If the making of knowledge claims is dependent on my reflexive involvement in the research, can such knowledge ever be truthful representation? Since my own involvement in the research process inevitably influences what can be known, nothing can be known except through those activities. Am I researching the world 'out there' or myself as maker of knowledge claims? If the latter, what is the relevance of the terms reliability, validity and generalisability to my research account if these terms are normally associated with quantitative and objective research in the natural sciences? In this section, I shall examine the relevance of these terms to my research, but I take a more critical view of their significance in Chapter 7 in the light of the insights I have gained from a reflexive examination of this reflexive research account.

Reliability refers to the repeatability of research findings and the accessibility of these findings to other researchers. It is concerned with knowing whether another researcher under the same circumstances would make the same observations leading to the same conclusions (Davies, 1999: 84). Given the reflexive nature of my research account, and the individual and quite personal way I carry out my role as course tutor for the *MA in Environmental Education* course, it is unlikely that another researcher could reach the same conclusions as I have. However, the MA course does advocate a 'course of action' for students following a critical theory of environmental education so I ought to test 'reliability' within the confines of my research account by cross checking any interpretations that I come to. Moreover, different students in different contexts examine similar concepts and have similar professional challenges. This means that whatever conclusions I draw from one student's response to an assertion or an argument can be checked for consistency with another student's response while bearing in mind that the varied cultural and professional contexts of students are likely to differentiate their responses. In reflecting on the challenges inherent in achieving this, I admit to a tension between reaching some kind of overall consistency in my interpretations in making reliability a desirable end in itself, and giving recognition to students' individual and cultural understandings of the relevance of a critical pedagogy to their educational circumstances.

Validity is related to reliability and refers to the 'truth' or 'correctness' of research findings[91]. However, as with reliability, some social science researchers tend to view the relevance of validity in qualitative research somewhat sceptically (Wolcott, 1990). In acknowledging this scepticism, I ask whether validity is a valid criterion for judging the 'truth' of my qualitative research[92]. Can I know anything other than that which expresses *my* understanding of the data? Can I claim that my findings represent the 'true' answers to the questions posed at the beginning of this chapter? Such uncertainties regarding validity in social science research confront the usual meaning of validity that has acquired considerable status in research methods involving tests and measurements. In echoing some of the doubts about the significance of validity in qualitative research, Wolcott (*ibid*: 148) sees a case "for cutting the concept of validity down to size". Wolcott's position revolves around his experience of ethnographic research where he recognises the uniqueness of a field worker's understanding of another person or of a social system and the difficulty of presenting that understanding to another person as 'the truth'. In qualitative research, it is simply not possible to 'know' with the same satisfying levels of certainty what a quantitative researcher can know[93]. Indeed, in writing this research account I am aware that any understanding I achieve will be largely 'answers' to research questions that are not matters of fact. This uncertainty about the concept of validity in qualitative research is summarised by Vendler (1984, cited in Wolcott, 1990: 147).

> There is no 'ready-made world', a realm of virginal noumena[94], immaculately perceived and untainted by the perceptual patterns and conceptual network imposed upon it by the human observer.

In drawing attention to this quotation, I am not reneging on the philosophical perspective of critical realism because Vendler reflects a 'strong' social constructivist perspective of reality

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[91] The classic distinction between reliability and validity is to consider the use of thermometer that consistently records the temperature of boiling water under standard atmospheric conditions as 98°C instead of 100°C. The measurement is reliable but not valid.

[92] In Chapter 1.5, I drew attention to the caution needed in making claims about the causes and effects of the ecosocial crisis since these claims are inevitably personal interpretations.

[93] Refer to my discussion in Chapters 1.8 and 2.3 about the issue of values in relation to what science can know.

[94] *Noumena*: an object of purely intellectual intuition (*The Shorter English Dictionary*).

which differs from the critical realist perspective that assumes a real world exists even though it is knowable only through human perception – the 'weak' constructivist position as in Section 5.2.2, above.

Maxwell (1996: 87) looks at the issue of validity in qualitative research in a "commonsense way", not as a search for "the existence of any objective truth to which an account can be compared" but as reaching a conclusion that "you can stand on securely". What Maxwell (*ibid*: 88) means by this is that I need to rule out any "validity threat" to the findings *after* the research has begun rather than attempting to rule out such threats before it. What I shall be doing is testing the validity of my conclusions and the possibility of threats to these conclusions by showing evidence that students apply what they write and say to their practice. This approach to validity is not at variance with the critical realist perspective in seeking to establish a dialectical relationship that allows me to develop my students' *praxis* while at the same time respecting the need for that *praxis* to be relevant to their differing cultural and professional contexts. Thus, a continuous reflexive awareness during the research is a necessary condition for acknowledging the existence of the students' cultural and professional realities, and from which I can draw theoretical abstractions. I am, therefore, a participant in the social worlds of my students "who are already busy interpreting and understanding their environments" (May, 1997: 138).

I believe the collaborative processes of discussing observations and conclusions with students gives me the confidence in the validity and reliability of my research, even though I am aware that my students are geographically remote from my professional context so I cannot substantiate any claims through direct observation and personal interaction. Any validity claims made must rest on the evidence obtained by the above processes. I propose to leave further discussion of validity and generalisability until Chapter 7.

5.4 Ethical matters

The social nature of the research I have been undertaking raises questions about the proper conduct of the research, especially with regard to my professional relationship with students.

These questions relate to the ethical dilemmas which Hammersley (1995: 175) sees being "formulated in terms of the right of privacy and protection of those being researched". I shall draw on Bassey (1995: 15) to explain how these dilemmas are comprised of three ethical values: respect for persons, respect for truth and respect for democratic values.

The first of these, *respect for persons*, means that in taking and using data from my students I do so in ways that acknowledge that they have initial ownership of the data. This 'ethical value' is not seen as an issue since the research data draws mainly on evidence from the day-to-day dealings with my students such as assignment setting, tutorial exchanges and assignment feedback which is open to scrutiny in the normal processes of monitoring courses in the Faculty of Education. When making students aware of their participation in my research, they give their consent readily. In particular, they:

- Are aware of the nature of the research programme;
- Agree to participate when required in a mutual exploration of the research issues;
- Agree to my drawing on evidence from their verbal and written contributions to coursework and its assessment;
- Are informed that they can access my research findings.

Bassey's second research ethic, *respect for truth*, involves an expectation that researchers "be truthful in data collection, analysis and the reporting of findings" (*ibid*). It is possible to gauge the extent to which this ethic applies to this research project from the records, e.g. evidence of conversations and student coursework drawn throughout the research programme. As Bassey (*ibid*: 17) points out, in this context 'respect for truth' is not the same as the search for *scientific* truth that might be the purpose of research in the natural sciences where the researchers are involved in a quest for generalisations within a positivist paradigm with fellow researchers as the prime audience (Section 5.3 above).

Bassey's (*ibid*) third ethic, *respect for democratic values*, means that in a democratic society researchers ought to feel free, for example: to express ideas and criticise the ideas of others; publish research findings; to give and receive information; and to investigate and ask questions.

Respect for democratic values has a high priority in this research account, not only for democratic reasons but also because of the socially critical orientation of the inquiry processes. As I have argued in Chapter 2.3.3, the grounding of socially critical environmental education in Habermas' critical social theory seeks to empower students' *praxis* (and of mine) so that we work together to actualise a society based on equality, autonomy, sustainability and empowerment. In summarising these ethical considerations, I agree with Ely's *et al* (1991: 218) justification for ethical research:

> Striving to be faithful to another's viewpoint is striving to be ethical. Striving to maintain confidentiality is striving to be ethical. Striving to be trustworthy is striving to be ethical. It is impossible to confine ethical considerations to a chapter or section. Actually, they are present from the beginning and are woven throughout every step of the methodology.

5.5 Data collection

The data sources drawn on so far are primarily:

- The growing body of literature that is associated with environmental education research and teaching, particularly that connected with critical approaches to education for sustainable development (Chapters 1, 2, 3 and 4);
- The philosophical and methodological issues informing environmental education research (Chapters 2 and 5);
- The literature on education for sustainability and distance education (Chapters 1 and 3).
- Recent social sciences literature with regard to: the reciprocity of knowledge and power; the hegemony of capitalist-inspired economic and social development; the ambiguities of sustainable development; the contradictions of globalisation; and the enigma of nature (Chapter 4).

For the methodology of both critical ethnography and critical action research, I find the following methods of data collection to be appropriate:

- The primary method of data collection is the extensive student-tutor dialogue by emails and letter. Normally, this dialogue follows the posting of a module to a student. Dialogue extends throughout the student's engagement with that module but it can also

arise from general points we both make about course processes, the course texts, and professional issues with which the students are involved.

- Focus group discussions (Marshall & Rossman, 1995: 84) while students' attended day schools in Nottingham. The intention is to monitor the student's strategies in their action research and to facilitate the exchange of ideas through reflexive processes concerning concepts and arguments raised in the module Study Guides. However, there was limited opportunity for these discussions as meetings were infrequent and group sizes small.

In excess of 70 students have enrolled on the *MA in Environmental Education* course since its launch in September 1994, but I have been selective in deciding which students should participate in the research and I refer to them by name below and in Chapter 6.

The diversity of students' professional contexts, that include formal and non-formal education, and conservation and community organisations, and their physical distance, means that I have some difficulty in obtaining data from face-to-face dialogue and interviews. Occasionally, I see students in their own cultural settings in Southern and East Africa and in the Caribbean, and when a student visits the UK. I have been able to meet some of my students while travelling to Southern and East Africa during attendance at conferences and when involved in the Academic Link with Kenyatta University, Nairobi (Chapter 1.6). Some UK-based students regularly attend Saturday day schools in Nottingham Trent University but, primarily, I communicate with them almost entirely by email, letter, fax and phone.

5.6 Reflections

Whereas Chapters 1-4 focus on a study of extant literature, the course rationale and theoretical issues, this chapter has presented a plan for the process of gathering data from my interactions with students on the *MA in Environmental Education* course which is consistent with critical ethnography and critical action research. This process will enable me to respond to the four research questions listed at the beginning of this chapter. That is not say, as I point out on page 8, that this study has a traditional 'theory/method/results structure' since theory building

has progressed throughout the study in and has given rise to the four research questions. In generating data to answer these questions by means of the critical encounters in Chapter 6, I am interested in the 'impact' of the course, both with respect to my own *praxis*, and to that of my students. By 'impact' I do not mean quantitatively measurable outcomes such as how many of my students have successfully responded to particular Student Activities in the course texts (Chapter 4), or whether they are able to define terms precisely, or whether they can generate numerical data as evidence of their ability to influence their own *praxis*. Rather, the design of the plan provides a qualitative response to the research questions. For example, in Question 1 (Section 5.1), I want to make a judgement as to the educational potential of the course for students in cultural contexts other than my own where environmental issues and educational practices are 'non-Western'. This question also involves evaluating the effectiveness of distance education for mediating a socially critical course to students in remote locations. In responding to Question 2, I will use the evidence to evaluate my role in helping students develop their critical pedagogy. In Question 3, I will make a judgement about the MA course's potential to 'deliver' education for sustainability; and in Question 4 to assess students' understanding of the significance of six fundamental concepts for an informed response to the ecosocial crisis.

I have been anxious to ground the research plan in the philosophical and methodological issues that I explore in Chapters 1-4, including the informing philosophical (critical theory/critical realism) and methodological (critical action research/critical ethnography) foundations for the research (Section 5.2). In Section 5.3, I have been particularly sensitive to how the reflexive nature of my research faces up to any validity claims for my research findings. I return in Chapter 7 to this issue. In being reflexive, I connect with my students' professional lives while at the same time requiring some objectivity in order to make my findings accessible to others. The openness of the research process and its findings necessitates consideration of ethical issues in Section 5.4. I reflect more fully on the reflexivity of the research process when reviewing the significance of my tutorial exchanges at the end of Chapter 6, and in Chapter 7.

CHAPTER 6

EVALUATING *PRAXIS*

I am a class teacher of 9 to 11 year olds in a tiny rural school and firmly committed to outdoor education for young people.
(Laura Harvey, UK)

"I am a full-time English teacher, part-time photojournalist, and environmental educator."
(Charles Paxton, Tokyo)

"I grew up in the forested highlands of Western Rift Valley of Kenya as a herdsboy taking care of cattle, sheep and goats. I have been involved in environmental conservation and education in Kenya for 25 years".
(Nathaniel arap Chumo, Nairobi)

(manatee)
"I am a writer/environmental educator working with indigenous communities in the Amazon."
(Sarita Kendall, Bogota)

"My family house is located on the Nottawasaga River a few blocks away from Wasaga Beech Provincial Park in Ontario. With these strong connections with nature and human development, I became involved as a co-ordinator of CERTEE (Certificate in Ecological Education)."
(Heather Willard, Alaska)

"I teach in Plaisance Secondary School on the main island of Mahé. I serve on the Education Co-ordinating Committee of the Ministry of Education helping to produce the '*Enviro-News*' newsletter."
(Jeanette Larue, Seychelles)

"Through my collaboration with staff at Kenyatta University, Nairobi, I have reviewed my understanding of the contradictions concerning human economic development, and the prospects for the sustainability of ecological and social systems.
(Malcolm Plant, MA tutor, UK)

"I teach at The Wilderness Centre in Gloucestershire, planning and delivering programmes of outdoor activities for young people. I have become interested in the understandings children attach to these activities."
(Gillian Traverse, UK)

"I grew up in the rural area of Jamaica and my love for the environment began in the early part of childhood. I then belonged to the Brownies."
(Thessa Smith, Jamaica)

6.1 Introduction

The purpose of this chapter is to present for consideration several 'critical encounters' arising from my tutoring of *MA in Environmental Education* students. These encounters provide data for answering the main research question and four component questions listed at the beginning of Chapter 5. By 'critical encounter', I refer to a situation where a matter of interpretation or understanding with regard to a student's coursework has arisen, or where they want guidance about issues that impinge on their *praxis*. I have chosen to centre each critical encounter primarily on an individual student but I refer to other students in connection with the issues discussed in each encounter. In order to focus on the theoretical issues raised, I have not presented the critical encounters chronologically although they all took place over the period 1996-2000. Unavoidably, the issues highlighted in the critical encounters raise issues that sometimes overlap, for example, when socially critical approaches to environmental education connect with cultural issues, or matters concerning the distance education mode of delivery of the course. I have adopted a consistent format for analysing the critical encounters and I refer, as I have throughout this account, to the students by name and describe their professional contexts openly since they have given me their permission to do so (Chapter 5.4). Fig 6.1 summarises the participating students and their geographical locations and professional responsibilities while Fig 6.2 lists the titles of the modules in the MA course, further details for which are provided in Appendix A.

The five themes for the critical encounters are:

- Sections 6.2: Socially critical EE (Oman),
- Section 6.3: Socially critical EE (Holland)
- Sections 6.4: Local knowledge and EE (Colombia)
- Section 6.5: Postmodernism and EE (UK)
- Sections 6.6: Critical action research, distance education and EE (Japan)

Charles Paxton: English Teacher, Tokyo University, Japan
Greg Taylor: Primary School Teacher, International School, Netherlands
Helen Perkins: Environmental Educator, Derbyshire Wildlife Trust, Derbys, UK
Laura Harvey: Primary School Teacher, Worcestershire, UK

Mike Relf: International School, Jordan
Laurence Speight: Teacher Training College, Oman
Linda Round: Secondary School Biology Teacher, International School, Oman
Rita Dent: Secondary School Biology Teacher, Malawi
Sarita Kendall: Conservation Officer, Non-Governmental Organisation (NGO), Colombia

Fig 6.1 MA students referred to in the critical encounters

Module AN1:	Introducing Environmental Education: Impediments and Possibilities
Module AN2:	Perspectives on the Environment: Differing Ideologies and Utopias
Module AN3:	Enquiring into the Environment: What Knowledge? For What Purposes?
Module AN4:	Realising the Potential of Environmental Education
Module AN5:	Environmental Education in Action: Exploring Local Community Contexts
Module AN6:	Review of Professional Progress in Environmental Education
Module AN7/AN8:	World Politics and the Global Environment/Educational Implications
Module AN9/AN12:	Research Dissertation

Fig 6.2 Summary of module titles for the MA in Environmental Education course

6.2 Critical Encounter: socially critical EE (Oman)

Students: Linda Round, Secondary School Biology Teacher, Oman
Laurence Speight, Teacher Education College, Oman
Mike Relf, Amman Baccalaureate School, Jordan

Context

This critical encounter arose while Linda Round was teaching biology at the bilingual Sultan's School in the Sultanate of Oman before she moved to the Jakarta International School. In response to the assessment for *Module AN4: Realising the Potential of Environmental Education*, she carried out a SWOT analysis that explored the scope for developing environmental education in her school. In reflecting on the prospects for this, she became enthusiastic about developing curriculum materials related to the conservation of the White Oryx that could be used by the 'Green Beans' environmental club she had established largely involving children from Grades 7 to 9.

Despite these positive signs of actual and potential curriculum developments, it was clear from Linda's report for Module AN4 that it was difficult for her to find ways of developing critical approaches to environmental education in her school. In my report on her assignment for Module AN4: *Realising the Potential of Environmental Education*, I wrote: "I understand the difficulties you have in developing a socially critical approach to learning in the social and political context you are in". Following my report, I invited her, as follows, to explain in more detail why this was so:

> I have been reflecting on the difficulties that some MA students have in developing socially critical approaches to environmental education in the particular educational and cultural context in which they work. As a guide to providing me with some answers, perhaps you could focus your thoughts on:
> - The type of politics operating in the society you live in.
> - How this political background influences the children's learning styles and the curriculum in your school.
> - The style of teaching expected from in-country and ex-pat teachers.
> - And why you think there are difficulties in promoting a form of environmental education that reflects on socio-political practices.

Discussion

In her response to my questions, Linda replied:

> *The potential for a socially critical form of environmental education in Oman is fraught with difficulty. Culturally, Omani's are not expected to think in a critical way at all. The government education system is based on rote learning. Our school is bilingual, the Arabic side of the curriculum, i.e. Islamic Studies, Arabic and Social Studies is taught in the same way. They are very book-oriented, i.e. Arabic will start the year on page one and continue until the book is finished and then on to the next and so on. In science, we have moved away from this and use curriculum guides with the textbook as support. ... The students enjoy certainty in what is required of them; they do not like to think for themselves or even accept that there could be alternative ways of doing things. Everything we do has to be approved by the Ministry.*
>
> *Environmental education does not exist in Oman and therefore, Omani's are relatively unaware of environmental issues. Lack of knowledge, means that conservation issues are still dealt with by expatriates. This should be a priority for Oman and it is one that the undersecretary is trying to pursue. The Oryx Project, as a beginning, has real educational potential.*

Evidently, designing a curriculum for developing her pupils' critical capacities with regard to the socio-political origins of environmental issues could be a rather risky task since government oversight of the curriculum and the public's passive acceptance of Islam and what the Qu'rān prescribes discourages critical and reflective learning. As she continues:

> *Appearances are everything here. You have to be seen to be doing the right thing. There are no criticisms of the Sultan but sometimes of his appointed Ministers, but never publicly. The majority, certainly the privileged ones that we teach, are content with what the Sultan has done for Oman and for them. ... They do not act or think globally - but is this true of many national students?*

Despite this bleak picture about Oman's private and state education, Linda's SWOT analysis in Module AN4 pointed to the opportunities for engaging her pupils in environmental projects as part of the Green Beans initiative. When she began her studies of the subsequent *Module AN5: Environmental Education in Action: exploring local community contexts*, I pressed her to pay further attention to the possibilities for socially critical environmental education. In the introduction to her report for this module, she writes:

> *[A]n important aim of my research project is to improve the quality of my teaching and knowledge of Omani conservation issues, hopefully in a more socially critical way.*

With my encouragement, Linda then interviewed Andrew Spalton who works for the office of the Adviser for Conservation of the Environment, Diwan of Royal Court, and who is employed as a biologist at Yalooni, the site of the White Oryx Project. In her research report for this module, she writes:

> *I chose to interview Andrew, because I felt that he knew the situation well. However, because I was interested in Omani issues, it could be argued that it would have been better to interview an Omani. With my experience of Omani culture, I thought that an Omani may try to second-guess what the "right answer" is and that they would not want to criticise Oman. I was particularly interested in pursuing [the White Oryx Project] because I have taken grade 12 trips down to Yalooni and Omani conservation examples entered the grade 12 syllabus this year. Therefore, it would not only be professional development for me, improving my knowledge of the area and development of new curriculum materials but it*

would also improve the quality of the experience for grade 12 students by raising the awareness of students to conservation issues in Oman.

In her transcription of the taped interview she remembers

the look of astonishment in Andrew's face when I asked him about the possibilities of a socially critical environmental education in Oman". ... In fact, Andrew asked me not to quote him on some issues, which of course has to be respected and is therefore unavailable as data.

Linda's concern not to trespass too far onto delicate political ground was reflected in the difficulties she experienced in proposing ways of progressing environmental education in her classes, from the dominant model of passive learning to a more active and socially critical approach. In further questioning of Andrew, she understands that this difficulty arises from the social and political conditioning of Omanis. She explains:

I asked whether Andrew thought that Oman was developing in a sustainable way. Historically, [Andrew's] Office had a role in the development process and conservation. Andrew has seen many projects that are very destructive to the environment and fairly short-sighted. Huge start-up grants are given, for example with quarrying, which in the future may not be economically sustainable or viable. However, Andrew says that Oman's development is praiseworthy in many respects and only now is the wildlife under pressure. His Majesty is trying to develop manufacturing to sustain the economy after the oil and gas have gone! I still find it incredible that Oman has so little in the way of solar power. The expensive start-up costs are often quoted as reasons for this phenomenon. There is a sort of fatalism with respect to their feelings on oil; a god's will "inshallah" attitude that takes away their responsibility. I am not sure whether this attitude stems from their culture or their religion. In my experience, Omani students certainly see themselves as "apart from nature"; many do not even consider themselves as part of the animal kingdom.

Very few Omani's have been exposed to environmental issues or have knowledge on current environmental debates. They do not appear to value their natural areas and do not understand the issues behind conservation. It appears that they see the Earth as a global resource, to be exploited for human gain. Maybe, as expatriate workers, our responsibility is to teach them to value their environment even if in the short-term it is only for the sake of tourism or economic reasons. Perhaps, then, they will think again before building a new road or quarry. ... Islam offers people here certainty. They are not expected to question or criticise the Qu'rãn. This attitude spills over into their whole life, as they expect to be told what to do and how to do it, all the time.

Following her interview with Andrew Spalton, Linda's reflections make it clear that the social structure and political ideology in Oman does not facilitate the development of a curriculum encouraging her pupils to examine in a socially critically way local environmental issues such as quarrying, or global issues such as global warming. Nevertheless, Linda was able to set out a programme of activities for a Grade 12 Residential Field weekend to Yalooni, Jiddat al-Harasis specifically designed to enable her pupils to discover some of the links between social and ecological issues connected with the White Oryx Project. The programme she proposed is as follows:

> *As for my part, I hope that in the future the Green Beans can become involved with some of the campaigns of the Ministry of Regional Municipalities and the Environment. Outlined below are my ideas for a field trip to Yalooni for Grade 12.*
>
> ***Aims***
> - *To show the students an area of outstanding natural beauty, relatively untouched or unspoiled by humans.*
> - *To learn about the physiological adaptations of the Ooryx which ties in with the grade 12 syllabus.*
> - *To understand the roles of the office of the Adviser for the Conservation of the Environment and the Department of Regional Municipalities and the Environment.*
> - *To raise awareness of local conservation issues and critically evaluate them.*
> - *To encourage cooperation with others and the importance of teamwork.*
>
> ***Before going to the Yalooni:***
> - *Look at a map of Oman to locate the area.*
> - *Describe the climate, type of desert and the tribes who live there.*
> - *Discuss the physiological adaptations of the Oryx to their desert environment.*
> - *Describe the roles of the office of the Adviser for the Conservation of the Environment and the Department of Regional Municipalities and the Environment.*
>
> *At Yalooni, the students would be taken around the Jiddat to see wild herds of Oryx (if possible) as well as to appreciate the natural beauty and other wildlife present. They would also be taken to the Huqf. During these excursions, the students will have the opportunity to talk with the expatriate biologists, the liaison officer and the Bedouin rangers.*
>
> ***Questions to answer/think about.***
> *a. How do you feel about this area?*

b. *How could you describe this area to someone who has never been to Oman?*
c. *Why do you think the Oryx were hunted (both recently and in the past)?*
d. *If the WWF and other external conservation groups had not intervened, do you think that the Bedouins or other Omani's would have done something to save the Oryx?*
e. *Do you think the Oryx should be saved? Give reasons for your answers.*
f. *In what ways could the most recent poaching occurrences have been prevented?*
g. *The ultimate aim of the white Oryx project is to produce a self-sustaining herd? What does this mean and why is it desirable?*
h. *Is there anything else you feel as though the Ministry of Regional Municipalities and Environment and the office of the Adviser for the Conservation of the Environment should be doing?*

The aims and activities in these guidance notes for students undertaking a field trip point Linda's students towards examining social issues that influence the conservation of Oryx without making direct reference to Omani cultural forces that shape attitudes towards the hunting of Oryx.

Evaluation

(In this discussion, I refer to the four qualities of a socially critical theory of education that I emphasised in Chapter 3.6: *empowerment*, *critical reflective thought*, *empathy*, and *discrimination*).

Linda's plans for encouraging her pupils to reflect on social and ecological issues in connection with the White Oryx project are not explicitly socially critical. How could they be, given the government's overseeing of the school curriculum, and the evidence from her discussion with Andrew Spalton? Nonetheless, in the process of responding to the MA course texts, she became *empowered* to initiate class discussion concerning the reasons why people hunt the Oryx. This involved her in considering the educational opportunities that could lead her pupils to reflect more critically about social impediments to sustaining their environment, ecologically and socially, including encouraging pupils to question who should take responsibility for protection of the Oryx and debating ethical questions about conserving the species. In her summary to the research report, she notes how the research has enabled her to engage in *critical reflective thought* about the reasons why it is difficult to develop a socially critical

approach to environmental education in her school, yet to move some way towards doing so with the Green Beans group. She justifies an action research stance when evaluating her professional development as follows:

> *Professionally, action research has enabled me to identify an idea, act on it and then evaluate it. Elliott (1991) suggests that interviewing is a good technique for finding "others' point of view [and that the person chosen should be] one who normally interacts with the situation". Andrew was chosen because he was approachable and has twelve years experience of Omani culture and conservation. It was uplifting to discuss with him some of the ideas introduced by previous modules, for example, sustainable development and technocentrism.*
>
> *The information generated here can be of use both in the Sultan's school and Jakarta International School. I feel that the teaching resources suggested in this research project will improve both the quality of the processes and outcomes of my teaching. The student body in JIS is more international and there could be greater scope for more socially critical environmental education. It would be interesting to compare my findings with a similar project in Indonesia, which also has rich natural resources and Islam is the religion.*

Linda's discussions with Andrew Spalton showed her capacity for *empathy* in responding to the insights Andrew provided about Islamic culture and the possibilities for educating a society sensitised to issues of sustainability, human rights and equity. The difficulties Linda found in advancing a socially critical curriculum in Oman ought not be seen as a problem that is specific to Islamic countries. However, she suggests that excessive devotion to rote learning in Omani schools, caused by a combination of political and religious factors, precludes the pupils from critically engaging with social and environmental issues in Oman. In Oman as elsewhere, as I have discussed in Chapters 2.5.2 and 3.5, emancipatory forms of education are not easy if governments and policy makers see education as means of achieving narrow political ends, particularly where a critical democracy might be seen as threatening to a nation's economic survival. In Linda's case, official resistance to critical pedagogy *would* arise if teaching challenged the status quo, the government structures and policies designed to ensure that Omani people acquiesce to social rules deriving largely from Islam and economic imperatives. It is clear from Linda's further reflections on Omani culture that there are complex reasons for the want of a critical democracy in Oman. These reasons include issues of gender in Islamic society. As Linda writes:

> *Cultural traditions affect how a community views their environment. Warren (1994) has argued that the domination of the environment is connected to the domination of humans in subordinate positions. In Oman, women certainly do not have the same freedoms as their male counterparts. For example, many girls are not allowed to go on overnight trips of any sort especially if there are going to be Omani men; Western men do not seem to be a problem. Our school board will allow a boys ski trip to Switzerland but not the girls. Andrew felt that the Bedouin women, whom he had more knowledge of, maybe did not have the same restrictions as those who live in Muscat. We both felt that women are more conservative in Muscat, possibly because of the concern of what others will think of them.*

Linda's reflections show the quality of *discrimination* in her willingness to engage in debate about the contradictions in Omani society resulting from the prevailing Islamic ideology. Laurence Speight (Oman) confirms Linda's difficulties. His dissertation, *A Search for an Ecocentric Institution Able to Deliver Ecocentric Education*, explored, in part, the complexities of introducing teacher education students to skills of enquiry and critical evaluation. As well as corroborating Linda's experience that the prevailing culture restricts students' ability to "*think on their feet and to question authority*", he argues that students' social lives deny them the opportunities for participating in educative activities sponsored by societies and clubs:

> *In Oman there are no public libraries, well-stocked bookshops, youth clubs, pressure groups, interest groups, community centers, and most people do not have access to adult education classes or the opportunity to join a sports organisation. In addition, there is no independent media and discussion of many topics is taboo.*

Mike Relf (Jordan) in his dissertation, *Environmental Education in Jordan the Potential Role of the Dana Nature Reserve*, also reflects on the challenges he faces in an Islamic society in trying to develop students' capacity for critical inquiry. His request to carry out a study of students' perceptions on one school "*was met with suspicion and I was not permitted to carry out my study for reasons of the potential dangers of creating 'western value' in an Islamic context*".

In reflecting on my learning in encouraging Linda to explore further the possibilities for a more critical style of teaching in her school, I believe I acted with restraint. I refrained from pushing

Linda into initiating an approach to her teaching that would make her feel uncomfortable in her professional relations with her Islamic and British expatriate colleagues, and in connection with the Ministry of Education in Oman. In these circumstances, I believe my capacity for restraint is an essential personal qualification for managing a postgraduate course that requires me to be sensitive to students' socio-political and educational circumstances (Chapter 3.5).

I regard Linda Round's progress through the first five modules of the *MA in Environmental Education* course as a collaborative activity in that the course materials allowed us the flexibility to study the potential for socially critical approaches to curriculum reform related to her professional and cultural context. My role as course tutor has been enhanced through this collaboration since not only am I more aware of the social and educational conditions that need to be taken into account when evaluating a student's *praxis*, but also I appreciate that caution is needed when inviting students to engage in curriculum reform of a socially critical nature. In Linda's case, I believe that I have been able to empower her to reflect critically on ways of implementing a more socially critical dimension in her curriculum.

This critical encounter with Linda shows the dialectical style of the exchanges between us where the course processes stimulate *praxis* but do not control it. Linda faced contradictions in trying to develop a more critical curriculum in constraining political and cultural circumstances. I concede that these circumstances made me hold back from forcing her to demonstrate that she could teach in a socially critical way. I suggest that the dialectical nature of our learning is evident in the explanatory abstractions I have provided of Linda's understanding of her *praxis*, and, reciprocally, of my *praxis*. As we try to reach mutual understanding discursively, these abstractions are grounded in the reality of our professional lives. Furthermore, the creative tension generated in trying to reach a mutually acceptable situation with regard to our *praxis* does reflect critical theory's concern with empowering both the researcher and the researched. Though I cannot claim that we have transformed our *praxis* in trying to resolve these contradictions, we have reached a position where we understand how these contradictions arise and how they limit what it is possible to achieve professionally. These conclusions are consistent with critical realism's advocacy that research should engage

with 'difference and contradiction' in connection with the political forces that shape the lives of the researcher and the researched.

6.3 Critical Encounter: socially critical EE (Holland)

Student: Greg Taylor: Primary School Teacher, The British School, Netherlands

Context

Greg teaches at a large primary school, an International School, close to the centre of The Hague. His school's curriculum follows almost exactly the National Curriculum for England and Wales financed by the payment of fees. The pupils of the school originate from over 60 countries and their parents are so-called 'global-nomads', prosperous, well-educated, expatriate employees of all the companies, mainly oil and gas industries, to be found in a large European city. In his ecological autobiography (Chapter 3.4) at the start of the course, Greg recognises that "*these children will, sooner or later, travel again and many of them will hold positions of great influence in later life*" and that, in his teaching, he wants to pass on to his children:

> *A positive attitude towards conservation [of the natural world] and a realistic understanding of our place within it, and as a part of it. Awareness ... is not enough. ... I have tried to teach children to study, think about, and try to affect their own man-made environment for the better and consider this a task for life. Whether as parent or a politician, an engineer or an inventor, they will have to consider these issues daily in the future.*

In reflecting on the learning processes that enabled Greg to try and achieve these goals, I refer to our tutorial interchanges as he attempts to develop a curriculum of a more socially critical nature. It is the progression of his thinking that I want to focus on here, from the time he proposed to enhance the provision of environmental education across the school following his work for Module AN4, to the evaluation in his MA dissertation of the possibilities for developing his school grounds as an educational resource in achieving the above goals.

Discussion

In response to the assessment brief for Module AN4: *Realizing the Potential of Environmental Education*, Greg drew up a proposal for enhancing his school's provision of environmental education. Basing his proposal on a SWOT analysis and the '*in*, *through* and *for*' model of environmental education (Chapter 3.5), he presented it to the school's Senior Management Team. Greg reported that two of his colleagues responded positively to the proposal and that they agreed that environmental education "must not be an add-on curriculum; it will have to become 'core' [and that] aims about, through and for the environment should go into each year group plans." In my feedback on his report for Module AN4, I wrote:

> The SWOT analysis worked well in presenting an open and balanced document for consultation by staff and demonstrates your sensitivities to the school's education policies. ... You have the support of your headteacher for this initiative and your assignment indicates your confidence in seeing the proposal develop into worthwhile curriculum development.

Drawing on his interest in the ENSI Project (Chapter 3.5), Greg's key concern was to advance for further discussion among his colleagues a model of education *for* the environment understood as 'active participation' and 'personal responsibility' rather than in 'socially critical' in terms of empowerment and emancipation (Chapters 1.4 and 3.5). Indeed, he had noted in his report for Module AN4, citing Huckle (1983), that: "All three forms of environmental education lead to claims that education promotes environmental quality, but only if there is adequate attention to education *for* the environment may such claims be thoroughly justified". Greg's proposal to the Senior Management Team included a plan for using the school grounds for enhancing curriculum opportunities enabling pupils to "*experience more regular and purposeful contact with the environment*" and that this was to be the major focus for his dissertation: *Improving Environmental Education in a Large European Primary School by Creative Improvement of the School Grounds*. Building on his proposals in Module AN4, Greg wanted to evaluate the extent to which the school's curriculum could address a socially critical approach to education using the school grounds as a stimulus for curriculum change. However, he was cautious about realizing this proposal for he regarded the socially critical slant as "*a point of slight contention at my school as elsewhere*" but, nevertheless, acknowledged:

> *Education for the environment could be reflected in [the] school's curriculum by involving children in investigational work in their immediate environment, encouraging them to discuss ethical matters in relation to the environment and improving contact with the local community.*

And he cites Symons (1996: 55) in arguing that primary school teachers should meet the challenge of education for sustainability by combining their long-standing tradition of nature study that "develops an affinity with the rest of nature and an understanding of ecology, with a radical social education which addresses concepts such as equity and social change". In my report on this module assessment, I advised him to explore further any opportunities that enabled him to "nudge into focus the political and value-laden aspects of environmental education, but that I am aware of the constraints in doing so in your school".

In drawing on the guidance notes for his dissertation and the experience he gained from a small-scale research project he carried out for Module AN5: *Environmental Education in Action: Exploring Local Community Contexts,* Greg justified an action research methodology to facilitate the fusing of 'nature study' with the idea of 'equity and social change' as advocated by Symons above. His research involved a study of documents and taped transcripts of semi-structured interviews with children and with his colleagues, and he used grounded theory methods to code responses and to compare and correlate the findings. Five categories emerged from this coding process: grounds, staff, curriculum, pupils, and management. I shall reflect on a selection of these findings as they apply to each of the five categories.

Grounds

> *The grounds are seen ... as being a very valuable ... resource for the education of children, and particularly for environmental education. ... There are no negative feelings about the changes so far and they are seen as having been successful in making considerable impact on the attitudes of the staff.*

> *All the ... respondents would like to do more of their work outside. As well as for the rapidly increasing scientific study of flora and fauna, they are used to demonstrate contrasts and effects of human pressure, for aesthetic appreciation, as a background for creative work and, when contrasted with other areas studied*

on visits outside, for consideration of human environments and our effects on them.

I am aware that it is common for primary schools to make use of their school grounds to resource teaching, but this is often a piecemeal activity and subject to the inclinations of individual teachers who may have little influence on the curriculum as a whole. However, Greg embarked upon a planned programme of development of the school grounds beginning with the coursework associated with the action plan prepared for Module AN4 assessment, gaining research experience in Module AN5 and evaluating actual developments of the school grounds in his dissertation. Greg's intention was not only to see how the grounds could be used to develop pupils' awareness *about* and experience *in* the environment but to take action *for* the environment (see above). However, the extent to which the school grounds are *designed* to promote education for the environment and to encourage pupils to take a more critical perspective on environmental issues, is not clear in Greg's summary of the impact of the project on his school's curriculum. For example, he provides little evidence of how activities in the grounds might foster critical environmental enquiry through the curriculum, problem-solving and closer contact with the local community. However, I recognise that these attributes of a critical curriculum cannot be achieved in the short-term and curriculum changes may need to be in place before his pupils can be encouraged to realise their individual potential to respond critically to environment and development issues in their own lives[95].

Staff

Whereas staff ... express considerable appreciation for the improvements ... and are very keen both to work outdoors and to improve the level of provision within the classroom, many do not feel personally able to do so. ... The need for a programme of in-service training was repeatedly mentioned.

In recent years, curricular pressure has been intense for primary teachers using the UK National Curriculum. ... This indicates a reluctance to take on anything new despite the aim, stated in the policy, that there is no intention to introduce a new subject into the curriculum.

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[95] These opportunities may be encouraged by the introduction of Citizenship Education in the National Curriculum as a compulsory 'subject' in August 2002 for Key Stages 3 and 4 and thereafter for Key Stages 1 and 2.

Teachers of traditional subjects are unlikely to find it easy to use a new teaching resource in their repertoire of teaching styles unless funds are provided for staff development activities of an appropriate kind. While Greg argues that some staff "*are aware of the social and political factors in global and local environmental degradation, and feel that work in school using the grounds can begin to engender moral and socially critical values in pupils*", he contends that the majority are not able to "*visualise altering teaching patterns along more democratic and participatory lines*".

Curriculum

> *Many of the staff have experience before the National Curriculum and consider it a retrograde step for environmental education. ... As a school outside Britain it is felt that we should feel free to deviate from the NC and that our written curriculum should have a much stronger environmental focus.*
>
> *The staff opinions vary from the belief that 'we have a right and a duty to inform the children with as much knowledge as we can. It is then up to them to come to their own conclusions', to the majority who consider that 'we should actively teach basic care and respect for all living things'. There are even those who feel that we should support political environmental groups in certain circumstances, though they then add qualifiers such as 'we must be careful not to support causes which may then turn out to be wrong and 'we should have to be choosy about considering our clientele'. The last opinion being a reference to the fact that a large number of our parents are employed in the oil industry.*

As Greg reflects above, the intense pressure staff experience in 'delivering' the National Curriculum holds back curriculum change. However, Greg notes the interest among staff in adapting existing curriculum topics so that the grounds become a foundation for environmental education whilst satisfying existing learning objectives in various areas of the National Curriculum. A further difficulty concerns his reference to 'clientele'. Principally, these are the parents who comprise largely oil company executives and diplomats, and who might be resistant to a curriculum that is working for social and environmental justice. Greg quotes Taylor (1998) who writes: "If you wish to teach *for* the environment, you cannot expect to showered with blessings from the rich and powerful. You can expect to find many obstacles in your path."

Pupils

> *Our children are very well travelled and of many ethnic origins. Staff feel that we should, on the one hand, be exploiting this variety as a source of information about the various social conditions of which they have experience, but, on the other hand, be cautious about suggesting that British and Western values and culture can provide all the answers. As one of his colleagues said, 'the concept of development is difficult. Who is developed? Our curriculum suggests that we are'.*
>
> *Most of the staff expressed the view that the 'social aspects of primary education, the consideration of the individual as part of the community' should be reintroduced to the curriculum and that a basis for this should be involvement in the active care of our grounds and study of environmental problems across the world.*

The pupils are less visible in Greg's dissertation than I would have expected given that he provides evidence for their interest in two particular features in the grounds. The first is the 'wild area' adjacent to the wildlife pond with its variety of flora and fauna. The second are the 'class gardens' which he regards as a "*valuable educational resource but also as a key starting point of the move towards greater actual participation of children and their parents in the work in the grounds which is a central tenet of the philosophy underlying the action of the project*".

Greg noted, but did not pursue, the critique by some staff that the 'Britishness' of their curriculum might be inappropriate for a school catering for the educational needs of chidren from over 60 different ethnic backgrounds.

Management

> *There is a concern that management has only paid 'lip-service' to the enhancement of environmental education in the curriculum to date, that apart from approving the funding for all development in the grounds they have taken no active part.*
>
> *The most important practical step seen to be necessary is the appointment of a co-ordinator [with specific responsibility for environmental education]. As a result of the proposals, the action already taken and its success, and of feedback from meetings discussing development, it has recently been agreed to appoint*

such a person [who will] need to be empowered by senior management to make decisions and to take action when necessary.

Respondents recognised that there are inevitable restraints on the management. Firstly, the National Curriculum and our close adherence to it. Secondly, the fact that the school is managed on the basis of long-term planning and it is difficult for them to respond in any major way with any speed. Thirdly, that there are restrictions placed on them by the architect, who has rights over the whole site and any changes to it, and by the local planning regulations which take time to work through.

Greg recognises that without his earlier success in gaining approval for his project, the Senior Management Team would not have given him the time and moral support to continue with the developments of the school grounds. The decision to appoint a coordinator for environmental education is a significant reward for Greg's efforts.

Evaluation

(In this discussion, I refer to the four qualities of a socially critical theory of environmental education that I emphasised in Chapter 3.6: *empowerment*, *critical reflective thought*, *empathy,* and *discrimination*).

There are few parallels between Greg's professional and cultural context and Linda's (Section 6.2), but both experienced difficulties in their attempts to develop a more socially critical curriculum. Since Holland is a Westernised, democratic country, there is greater latitude for motivating such approaches in Greg's school, as the staff responses indicate, than in Linda's where Omani pupils are discouraged from questioning the *status quo* and students' critical skills remain undeveloped.

It is important to note that within the duration of the MA course, and particularly during the development of the dissertation, MA students often do not have time to evaluate curriculum initiatives, particularly those of a long-term nature such as developing the school grounds as an educational resource. Having initiated a major change to the school environment as prerequisite for curriculum change, Greg notes that "*the eventual change towards a 'dynamic' curriculum [reference to the ENSI project – see above] will need to be centred on*

development of the written curriculum plans from which we work". Although Greg was able to show

> [that the physical changes to the school grounds provided] *a noticeable improvement in attitudes and ambition ... among staff at all levels, and an improved ethical focus on respect and care for the environment, and for each other, is to be detected in the hidden curriculum of the school, the changes are only the beginning of a longer term development.*

I believe his motivation to persevere with plans to evaluate the potential of the school grounds for energising curriculum reform is evidence of his *empowerment* to bring about educational and social change. He cites Palmer and Neal (1994: 38) in anticipating that 'longer term development' will genuinely provide "personal experience in the environment, the development of personal concern and action for the environment and the taking of personal action in and on behalf of the environment".

In evaluating the impact on his own professional development, Greg writes that he is recognised by colleagues as a "*prime mover in a development of the curriculum which all managerial levels of staff consider desirable*". From a situation in which there has been no official structure for environmental education, he has brought into being an action plan and physical developments that has potential for establishing an environmental curriculum in his school. He claims

> *the redesigning of our documented curriculum will be welcomed by staff and supported by other curriculum coordinators and the senior management*" but that the *"contemporary view of environmental education as including a socially critical process where environmental problems are seen, and taught as 'symptoms of a larger problem in our society ...' (Huckle, 1993) is not yet understood or agreed by all staff.*

He draws on Hart's (1997) 'ladder of participation' (Fig 6.1) to illustrate how he sees children taking a more active part in decision-making with regard to projects based on the development of school grounds. In the past, before Greg's plans became part of school policy, he notes that pupils have only been involved in levels 1-3. Their involvement in the development of the school grounds has encouraged participation at levels 4 and 5 while he sees future activities

calling for pupil involvement at levels 4-8. Thus, he shows evidence of *critical reflective thought* in assessing the possibilities for curriculum reform that could lead to a more critical questioning by pupils of environmental issues.

8	Child-initiated, shared decisions with adults
7	Child-initiated and directed
6	Adult-initiated, shared decisions with children
5	Consulted and informed
4	Assigned but informed
3	Tokenism
2	Decoration
1	Manipulation

Fig 6.3 Hart's ladder of participation (Hart 1997)

It is evident from the extracts above that Greg has been successful in developing his colleagues' *empathy* for his goal of developing a whole school policy for environmental education and for the promise offered by the school grounds in this task. Whilst some of the staff encountered difficulties in understanding the implications of education for sustainable development, they appear to see the benefits to the school of developing pupils' powers of decision-making and active questioning of the causes of environmental problems. Greg also shows the quality of *discrimination* in questioning the social causes of the ecosocial crisis although he is aware that curriculum reform involving staff and pupils in a more critical appraisal of human impact on the human and non-human worlds requires time to evolve in the school.

As with Linda Round, Greg showed a willingness to participate in a dialogue with me about his *praxis*. Not all students were as willing to do so as these two were. This dialogue enabled Greg to carry forward his plans to develop a resource that had the potential for pupils' critical engagement with environmental issues. However, the long time scale for the development of Greg's project meant that there was little evidence of pupils' benefiting from a curriculum stimulated by the development of the school grounds. With regard to his professional role as an agent of curriculum change in his school, Greg had to contend with several contradictions.

Firstly, despite the support he had from some of his colleagues who felt that environmental matters should be an integral part of pupils' learning for his ideas, he had to contend with a curriculum heavily tied to the demands of the National Curriculum which left little timetable space for seeing through his plans as quickly as he had hoped. Secondly, prior to Greg's research there had been little interest in the school grounds as a resource for environmental education or for other aspects of teaching. In facing up to these contradictions, it is evident that he achieved a positive change in school ethos as regards environmental education. Not only was he able to establish a dialogue with colleagues, he readily did so with me as well as he 'customised' the course materials for his professional context. As the above extracts show, Greg's improvement of his *praxis* grew out of these exchanges, and facing up to the contradictions he identified, as we attempted to reach a mutually acceptable situation in which we both felt we had been empowered in the process. I am confident that Greg has advanced his professional capabilities to initiate and follow through a plan for educational change in his school which shows promise in terms of pupil involvement in a more critical and active participation with environmental issues.

Greg has now finished the MA course so the opportunity to collaborate with him further in developing a critical approach to environmental education in his school will remain 'unfinished business' on my part. In an email from him after he had successfully qualified with an MA award, he wrote:

> *I am still trying to get some INSET organised here but the first thing I need is a date and with 10 or 12 coordinators all wanting one of our five days per year, I am not having much luck – yet. I am, however, getting a lot more support from our new management and am hopeful for the future. Just today they have appointed a classroom assistant with an OU Degree in Env. Studies. She did it [the OU course] last year in Thailand and it involved cataloguing Thai snails! An ally perhaps.*

6.4 Critical Encounter: local knowledge and EE (Colombia)

Students: Sarita Kendall: Conservation Officer, Non-Governmental Organisation (NGO), Bogota, Colombia

Rita Dent: Secondary School Biology Teacher, Malawi

Context

Sarita is a member of a non-profit, non-government organisation called Fundaçion Omacha. Her projects in the Amazon involve her in the conservation of aquatic fauna such as freshwater dolphins through partnerships with indigenous communities. She writes about this work in her ecological autobiography that she submitted at the beginning of her MA studies (Chapter 3.3):

> *Our main objectives are research on and conservation of aquatic fauna. My colleagues are Colombian marine biologists and we all do a bit of everything, though my particular responsibility is education. Early on, we decided that every project undertaken by the foundation would have three strands involving the scientific research, the cultural context and an education programme, with these three elements tying together to enable us to design conservation measures. We have projects in the Amazon, the Orinoco and the Caribbean and we work with local communities, schools, university students, the authorities and others.*

Sarita's willingness, persistence even, to engage in dialogue resulted in the sharing of ideas which enabled her to develop her *praxis*, and for me to understand more clearly the challenge of mediating the theoretical underpinnings of the MA course to a student in a less developed country. For example, in responding to her coursework I was able to clarify my understanding of the significance of indigenous knowledge in shaping the goals of environmental education programmes (Chapter 4.2.2)[96]. The critical encounter I want to focus on here arose from her sharp response to the coursework assessment for *Module AN3: Environmental Education: What Knowledge? For What Purposes?* (Fig 3.1). This module has three purposes: firstly, to examine whether the societal changes taking place today have implications for the ecosocial crisis; secondly, to consider the relevance of science to our understanding of the global environment and the ecosocial crisis; and third, to reflect on the implications of postmodern

[96] During this time, I presented a paper in Pretoria, South Africa, that explored issues concerning cross-cultural learning that emerged from running the MA as a distance education course (Plant, 1998b). In

thinking for environmental education (Chapter 2.3). For the module assessment, the course text asked Sarita to investigate the likelihood that post-industrial society has a 'hegemonic hold' on current social thought and the implications of this claim in formulating environmental education programmes for local communities. After studying the Study Guide for a week or two, she made contact by email:

> *Dear Malcolm*
> *I'm about halfway through AN3 and, yes, I can see that I shall have problems with the assessment theme:*
> a. *I don't think it's intellectually trendy to 'retreat from the real' in Colombia - it's more a question of how to deal with very real violence.*
> b. *I don't think postmodernism has anywhere near a hegemonic hold on current social thought here, though there are obviously many manifestations linked to the media, the economy, etc*
> c. *That indigenous Indian communities have little experience of what an industrial society is let alone a post-industrial one so what relevance has the question to me?*

Her email is the critical encounter that I want to examine in this section. This will involve an analysis of the contradictions between the expectations of the course materials and the day-to-day realities of Sarita's local cultural context, and how I view this relationship as a dialectical exchange between us.

Discussion

Following the above response to Module AN3 assignment brief, Sarita and I negotiated an assignment that nonetheless met the assessment criteria but enabled Sarita to avoid having to consider whether postmodern ideas had any relevance to her social context and conservation work. The title we agreed on for this assessment was *Development and Knowledge, with Reference to Indigenous Communities in the Colombian Amazon.* In her writing in response to this title, I asked that she consider the following questions:

> a. *What are the language and cultural issues you have to face in your work with local communities?*

---

particular, I was able to reflect on the 'captain/shipmate' metaphor in my tutoring of Sarita's studies (Chapter 5..2).

b. *In what ways did the Rio Conference fail to address the needs of indigenous people? What arguments might the Third World put forward for dismantling the idea of development?*
c. *How does 'imported knowledge' through the concept of development conflict with traditional ways of seeing the environment?*
d. *If language and different ways of knowing are issues for you, what problems do these present for environmental educators in the non-formal educational context in which you work?*

With regard to culture and language, her response was:

> *Words like 'ecology', 'science', 'development', and 'project' are not part of the traditional vocabulary of indigenous peoples in the Amazon region of Colombia. Yet, such words are rapidly making their way into the everyday Spanish that is now used by the majority of mestizos and Indians living along the banks of the River Amazon. This is just one aspect of the globalisation trend considered by some to be a defining characteristic of postmodern society (Hargreaves, 1994). Of all these words, the one with most power and weight, the one most frequently spoken, is 'development'. In a process comparable to that described by Shrestha (1995) for Nepal, most mixed Amazon communities have been seduced by the idea of development, starting with the arrival of missionaries, doctors and teachers and, more recently, competing for international funding for the sustainable use of local resources.*

In the above extract, Sarita is reflecting on the issues I discuss in Chapter 4.2 (the substance of which comprised part of her set reading), and shows that she is aware of the politics of knowledge in the context of globalisation. The 'export' to non-Western communities of 'universal' knowledge through educational and economic processes has essentially been to guide the socio-economic transformation of societies of the less developed countries (Chapters 4.2 and 4.4). As Sarita explains:

> *Highlighted at the Earth Summit and still very much in vogue, are two environmental concepts especially relevant to indigenous groups: sustainable development and biodiversity. Willers (1994) calls sustainable development a code for "perpetual growth', while Escobar (1995: 193) is scathing on the subject, referring to a new "ecocracy" and the "benevolent (white) hand of the West" that will save the Earth. He emphasises the fact that this concept reproduces the main elements of developmentalism, that it is part of an elitist vision of global survival and that it perpetuates the idea of the poor, environmentally destructive peasant.*

The politics of knowledge as raised by Sarita presents a challenge for her environmental education programmes that aim to reconcile the beliefs and expectations of local communities with the demands made by international groups for sustaining biodiversity in ecological rich regions such as the Amazon. However, there is a renewed interest in the potential of local knowledge for resource conservation opposing these global pressures on local communities to change their lifestyles. Indeed, it is paradoxical that in a globalising world system people may become more aware of, and more attached to their neighbourhood as the appropriate forum for self-assertion and democratic expression. Perhaps, as Hargreaves (1994: 54) points out, "the anonymity, complexity and uncertainty wrought by globalisation heralds an ironic search for meaning and certainty in more locally defined identities". Harvey (1989: 302), too, suggests that the greater the social fragmentation, the more potent the search for personal or collective identity in a shifting and uncertain world. As Edwards (1994) argues:

> Alongside the global availability of satellite television, McDonalds and Arnold Schwarzenegger films, we are witnessing the affirmation of local, regional and ethnic identities so that the integration of the globe reconfigures rather than supplants diversity.

In Sarita's contexts, she appears to be aware of these reactions to globalisation for she writes:

> *The situation has begun to change. Local knowledge is now seen as important by many who work in development programmes and, as a result, new tensions are emerging between Western and traditional knowledge systems (Nader, 1996). International meetings such as the 1992 Earth Summit in Rio (UNCED, 1992) have given some prominence to the Third World point of view and to the role of indigenous peoples as caretakers of tropical forests and other environments. Agenda 21 specifically refers to the incorporation of the values, views and knowledge of indigenous people into resource management programmes and the need to protect their intellectual and cultural rights (Sitarz, 1994: 269).*

However, it is also true that Agenda 21 gives much greater importance to scientific knowledge in the Western sense for it advocates the export of appropriate technologies to the less developed countries; the faith remains, as ecological modernisers argue (Chapters 1.2 & 4.3.2), that it is Western technologies that will reduce poverty and yield economic development. This tension is evident in Sarita's work for Fundaçion Omacha for she points out the growing

conflict between her role in promoting Western conservation concepts such as biodiversity and sustainable resource us, and local communities' understanding of what is best for them.

> *The conflict between the scientist's idea of the conservation of biodiversity and the tribal view of 'looking after nature' is becoming increasingly clear as indigenous people make their own demands. ... The idea of extending nature reserves and parks is therefore not welcomed by younger members of indigenous groups, particularly if they cannot hunt and fish in these areas; this is likely to clash with the aims of international, and perhaps local, environmental organisations.*

For Sarita's organisation, a balance needs striking between her need to carry out scientific work regarding the conservation of local resources and the knowledge held by local people. She explains how to achieve this. The knowledge that is gained from her work not only serves the needs of international agencies bent on auditing natural resources in the event of their use in their global economy, but also serve to inform local people how their livelihoods can remain sustainable. Sarita considers the balance required:

> *Our main projects concern river dolphins, otters, limnology, aquatic vegetation and fishing. The last is especially important because fishermen see dolphins and otters as competition and we work to persuade people not to harm aquatic mammals. Dolphins in particular have traditionally been protected by the belief that they are dangerous animals with 'spirits' and can transform into human beings, but conservationist stories and myths are being lost. One of our main aims is to build up a picture of the aquatic resources in Amazon areas with a view to advising people on sustainable use and conservation. We use non-scientific terminology and adopt local expressions and names as far as possible. We also rely to a great extent on local knowledge when locating animals, trying to establish the history of fish migrations and so on.*

Nevertheless, although there is a commitment to exploring how local ways of knowing can help Sarita in her conservation work, she emphasises the difficulties in accessing local knowledge within communities that have a strong oral tradition and a cosmology that is very different from the Western one:

> *When checking the sources of information we usually ask people how they know such things. The most common answers are 'my father showed me' or 'I saw it'. There is a strong similarity with the ways of knowing documented for the Inuit by Bielawski (1996: 222): "knowing through doing and experience, knowing through*

direct instruction, and knowing through stories told in order to convey knowledge". Oral traditions and stories are now much less important in many of the Amazon communities than they used to be and only a few of the older people retain enough Ticuna and Cocama culture to be able to place oral traditions in the overall cosmology; in more isolated Amazon communities there are still shamans who have this knowledge. Because some people are concerned about dying traditions we make a special effort to elicit stories related to the environment, often organising competitions and encouraging young people to interview their elders. Writers such as Bielawski and Escobar warn that individual aspects of indigenous knowledge should not be taken out of context, that is, out of a whole complex knowledge system

Our interest in recovering indigenous knowledge has received mixed responses: many think we are doing something useful, some think we are interfering. None of the reactions has been comparable to that of a Pacific coast Colombian Indian who said to me "First they took our gold, then they took our trees, now they're taking our knowledge" with reference to a GEF biodiversity project.

The dilemmas that Sarita faces in her educational work with Indian communities in the Amazon, arise from the coexistence of particularism and universalism in development practices. While, on the one hand global capitalism intensifies the demand for assimilation of communities into the universal economic and social systems as demanded by the younger members of Sarita's communities, on the other hand globalisation leads some members of Sarita's communities to resist interference from outside so that they can retain their traditional ways. Sarita is aware that in any wholehearted commitment to Western modernisation, local knowledge may be lost but, as she explains, the irony is, that

sometimes slow scientific methods simply confirm information that was readily available from local people [but the entities] *that finance projects or enforce regulations are not easily convinced that indigenous knowledge is sufficient justification in itself and demand scientific evidence.*

Sarita continues by reflecting on the potential of indigenous knowledge for informing her conservation work (Chapter 4.3):

There are many examples of how indigenous knowledge has taught scientists new ways of seeing: for example, the case of the Kayapo Amazon Indians whose forest fields and trail-side gardens went unnoticed by Western eyes (Posey 1994: 282). The idea that scientific and indigenous knowledge are complementary, and that there should be a two way process with feedback, is attractive. According to

Escobar (1995: 215), the Third World should not be seen as a "reservoir of traditions". For genuine changes, he says, a move away from development science "to make room for other types of knowledge and experience" is needed. It is paradoxical to expect an appropriation and application of local knowledge by the very modernist framework that constantly eclipses such knowledge. Indeed, there are very few examples of two way processes that work and it is all too easy for local knowledge to become yet another 'resource' in a long history of exploitation unless the emphasis is put on the socio-cultural context, rather than the extractive process. When we first arrived in one community, the Indians said we did not need to worry about protecting dolphins because they looked after them. But gradually they have agreed that we too have something to offer when it comes to knowledge and conservation.

Following her growing understanding of the role of indigenous knowledge in supporting her conservation programme, Sarita used the opportunities provided by the assessment for *Module AN5: Environmental Education in Action: Exploring Local Community Contexts* to research the attitudes of local Indian communities to the idea of conserving natural resources and creating a reserve. She collected data from ten members of one Ticuna family comprising a 67 year old, a 59 year old, their five sons ranging from 36 to 15, one son's wife one family member's granddaughter aged 9, and a nephew aged 28. Sarita records the experience of meeting and talking with them:

I spent several hours every day for two weeks with the family, either in their houses or accompanying them in their activities. I had prepared a series of themes for discussion and ... I also asked certain key questions more formally. ... If grandchildren were present, I often elicited Ticuna stories and myths linked to the environment.

[The eldest member of the family] is adamant that a community reserve will only work if everyone concerned is in total agreement. ... He thinks the consensus will be very difficult to achieve. ... and [another member] is unhappy about pushing for the reserve because he is afraid of the criticism of the Ticuna should it not work out to their advantage. ... Clearly, the words 'reserve', 'regulations' and 'management plan' imply outside control rather than empowerment from the Ticuna point of view. Ticuna people fear that the reserve will limit their freedom to use land and water resources because the government and municipal authorities will make the rules. ... The idea that there should be resources for the future is not a convincing argument for them.

People want to continue with both subsistence and commercial exploitation in the lakes area and do not want to be told they cannot do this or that by outsiders. ...

Because of the political manipulation and economic exploitation of the past and present, it is difficult for the Ticuna to understand that we have been trying to promote the reserve because we believe it would benefit them in the long run. Whether it would really benefit them in its present form now seems more doubtful.

Here Sarita is drawing from her research the conclusion that the reserve may not, as currently proposed, be appropriate since her conversations with the Ticuna indicate that only a fully participatory process is likely to succeed.

During her time with the family, Sarita began to develop ideas for educational activities that would reduce the tensions to which she refers. Her intention is to show how Ticuna people can help in the process of recovering conservationist practices as well as introducing new (Western-based) reasons for resource protection. As she reflects:

There seems to be both pride and shame in being Indian, resulting in tensions between Indian and Western knowledge systems. ... Even though the Ticuna cultural framework has virtually collapsed with this generation, it is important to revive and reinforce environmental practices conducive to conservation". Cultural traditions are breaking down fast and traditional knowledge is being replaced by 'school' knowledge rather than the two complementing each other.

Among several ideas she argues for:

- *Developing ways of passing on knowledge (e.g. about when fish are spawning, how to obtain forest fruit) from generation to generation, because on the whole this is not happening in the home. ... Families live in nuclear rather than extended homes. ... Children do not have much time with their parents, the ones who 'know'.*
- *Teaching older primary children to value and care for resources, with the emphasis on fishing and forest products. Many leave school on completion of primary or go to study elsewhere and this is a key moment to guarantee maximum diffusion.*
- *A community-wide programme to discuss resource problems and try to get across sustainable development concepts. This could create conditions for a community-backed reserve based on consensus.*

In identifying the curriculum resources needed to implement these ideas, Sarita proposed producing educational booklets on the themes of the aquatic ecosystem, people and resources in the past and present, in addition to the ones she already authors in Spanish. For the longer term, she indicated her interest in establishing an interpretation centre that would focus on the

aquatic ecosystem and the Ticuna aquatic world and this project was the subject of her dissertation: *Incorporating Local Knowledge and Story into Environmental Education: guidelines for the creation of an interpretation centre in the Colombian Amazon.*

Evaluation

(In this discussion, I refer to the four qualities of a socially critical theory of environmental education that I emphasised at the end of Chapter 3.5: *empowerment*, *critical reflective thought*, *empathy,* and *discrimination*).

Sarita admits in her summary to the assessment for *Module AN5: Environmental Education in Action: Exploring Local Community* that she had not understood "*that the reserve might be counter-productive if full community backing from all sectors is not forthcoming*". This realisation enabled her to clarify her NGO's (Fundaçion Omacha) position on the reserve, namely that a longer more complex process of sharing ideas is required than was allowed for in the original plan. Her empowerment to examine her role in more depth by consulting local communities about their wishes for the reserve is summarised as follows:

> *The balance has shifted away from conservation for its own sake towards responding to the community's need for resources now and in the future. Despite my/our commitment to carrying out this process through, I am also wary of taking too strong a lead and - even subconsciously - manipulating events, or being accused of 'taking over'. Listening to the family's comments on whites, politicians and state institutions has been edifying in this respect*

In the examples I have provided in the discussion above, it is clear that Sarita gave substantial *critical reflective thought* to educational programmes that could best balance the need to practice western conservation practices and an acceptance that local knowledge should be incorporated in any plans for the reserve. She shows *empathy* for the Ticuna community by her efforts to facilitate this merging of interests in sustainability, human rights and equity. There is strong evidence in the account provided above of the development of her powers of *discrimination* in, for example, her willingness to engage in debate about the relevance of the course texts to her cultural context and professional interests. Moreover, she was able to

illustrate the contradictions and politics of the concept of sustainable development stemming from the dominance of the Western worldview.

Sarita's conservation work with local Amazon communities enabled me to evaluate and revise some of the theoretical ideas presented in the course texts. For example, Modules AN3 and AN7/8 (Fig 4.1) present theories of 'development' that are associated mainly with economic growth and the idea that social transformation follows acceptance of a modern, i.e. a Western world-view (Chapter 4.2), the focus being on socio-economic and political change (Jacob, 1997: 111). Sarita's critical examination of her role as conservationist and environmental educator in Colombia sharpened my understanding of the concept of development from the perspective of marginalized communities who are experiencing the tensions between wanting to continue with traditional lifestyles yet are aware of and respond to 'imported western knowledge. Although not made explicit in her writing, for Sarita this involved her in considering ontological and epistemological issues regarding her relation between the subject (e.g. Sarita) and the object (e.g. Sarita's community), as well as the idea of progress and growth that underpin development paradigms. That is, her recognition of the non-Western worldviews of indigenous people led her to revise the ways she gained knowledge about the beliefs and practices of these people.

Similar matters to Sarita's were examined by Rita Dent (Malawi) in her dissertation, *A Tentative Basis for Considering Future Environmental Education in Malawi*, in which she argued that environmental education "*must have Malawian roots, it must grow out of Malawian social values if it is to be appropriate and participatory*" (Appendix D). That is, that it should grow from traditional knowledge and culture. Yet, Rita questions the meaning of 'traditional', recognising that during the 20th century colonialism and development have changed traditional knowledge and values. However, given that Malawian culture is inescapably a hybrid of traditional and colonial, in reflecting on what might be appropriate environmental education in the Malawian context she rightly recognises that it "*needs to be done by Malawians themselves because only they truly understand their culture and what it signifies for developing a genuine local environmental education*". Nonetheless, Rita reflects that she has "*long and deep, if not ethnic, roots in Malawian culture [and I have] attempted*

to get inside as much of the cultural understanding as a foreigner is likely to be able to do so". She recognises a difficulty that it is not possible to talk on behalf of another culture, one that is already persuaded by Western ideology yet rooted in traditional values. As regards the educational context for environmental education, she regards formal education as an ineffective vehicle, not only because only 4% of students reach secondary school but also because schooling is conflated with the passing of exams; "*Learning and teaching is widely regarded as the passing on of immutable 'fact' while process-centred learning and teaching is largely unknown or disregarded*". Again, the rigidity of the formal curriculum is the impediment to developing process-oriented environmental education as it is in the Omani culture in which Linda Round taught (Section 6.2 above). The prospects for developing environmental education in the primary sector are more hopeful, but to reach the bulk of the population, Rita argues that it would need to take place in the non-formal sector, especially looking to combining it with adult literacy programmes or alongside other community–based programmes. The focus of such programmes would be rather different from that of Sarita's since Malawi is a densely populated rural economy so the emphasis would be on "*developing the skills to consider and weigh up often conflicting and competing inputs: on people's values; on people's desires; on way they observe around them*". These are now possibilities since Malawi emerged from a period of extreme censorship and indicate the need for participatory learning and teaching (as in Sarita's case) in which there is respect for the knowledge, skills and opinions of children in schools and of adult participants. Nevertheless, Rita recognises the cultural impediments to these educational possibilities:

> Malawians value conformity; [they] envy, ostracise, and more directly punish, those who stand out; [they] revere tradition; [they] have long and searing experience of being rewarded for doing what they are told and punished for taking initiative; and [they] have little experience, through lack of printed and televised information, of the enormous range of inventions and innovations achieved in societies around the world.

Rita believes that while a 'clever' environmental education programme might stimulate and support participants who have innovatory potential, the reality is that "*if environmental education is seen as benefiting some, but not all, people in a group, then it is quite likely that some kind of revenge will be carried out by those who do not benefit*". (She provides

examples of such acts of revenge.) Rita's intimate knowledge of Malawian society (she lived there for 18 years), its traditions and taboos, suggests to her that prospective environmental educators would need to learn from the people they are teaching. Her aspirations to return to Malawi and initiate a 'bottom-up' programme of environmental education that addressed tradition and Malawian's acceptance of conformity through a process of dialogue and participation with people in the non-formal sector, have yet to be realised. As I have discussed in Chapter 3.3, these reflections by my students carry an important message for environmental educators seeking to offer environmental education programmes by distance education. While Rita's cultural situation is different from Sarita's, from both students I have learned that, if environmental education is to energise social change, it needs to connect with the cultural values and social practices of the communities.

As the above extracts show, the tutorial exchanges between Sarita and myself were frequent and exploratory as we tried to find ways of adapting the processes and philosophy of the MA course texts to her cultural and professional needs and circumstances. Indeed, as I noted in Chapter 3.5, when asked whether the course texts encouraged her to reflect on the possibilities of social change in her professional context, she replied: *"Very much so - and this is easily adapted to/acted on in my independent context, where there is constant room for change"* (Questionnaire response, November 1999, Appendix E). Since Sarita's educational work was not subject to the constraints of a formalised curriculum, I felt I was able to be more imaginative and flexible in supporting her non-formal educational activities. Though not in formal education, Sarita's educational role in the Amazonian communities is as significant for advancing a critical approach to environmental education, as they are for Greg and Linda in formal education. However, the critique she is concerned with relates to large-scale issues such as the politics of the global versus the local, and the power relations implicit in these politics, as well as to local community needs and aspirations, rather than with the constraints of curriculum structures and content of a formal curriculum. This involved her in wrestling with the contradictions in her role as a conservationist in protecting animal species for the sake of the larger interests of biodiversity, while acknowledging the needs of local people to retain their hunting and fishing rights.

There were also contradictions with regard to her perception of the relevance of the course texts to her goals as a conservationist and educator that I referred to at the beginning of this section. This put to the test my competence to negotiate the learning processes in the 'open' sense that I discussed in Chapter 3.3.2, whilst ensuring that Sarita paid attention to the critical and reflective philosophy that had to underpin her learning. Indeed, Sarita's particular cultural and professional context caused me to question, more than I did with Greg and Linda, the relevance of the MA course texts to students trying to advance their professional practice in a 'developing world' context. The openness of the dialectical exchanges between us was professionally rewarding for me since it enabled me to understand some of the contradictions arising from my attempt to mediate a postgraduate course written by Western academics to an environmental educator situated in a quite different cultural context. I shall reflect on this aspect of course provision in Chapter 7 in response to the four component research questions listed at the beginning of Chapter 5.

6.5 Critical Encounter: postmodernism and EE (UK)

Students: Helen Perkins, Derbyshire Wildlife Trust, UK
Laura Harvey, Primary School Teacher, Worcestershire, UK
Charles Paxton, English Teacher, Tokyo University, Japan

Context

Helen is an education officer with the Derbyshire Wildlife Trust where she has responsibility for meeting schools' needs for environmental education and for developing educational programmes that link wildlife concerns with the wider issues raised by the Local Agenda 21 process and by the sustainability issue (Chapters 1.4 and 4.4). In the assignment for Module AN2, *Perspectives on the Environment: differing ideologies and utopias* (Fig 3.1), she reflected on how the course texts and papers were beginning to shape her environmental ethic. Whilst regarding "*experiences of nature*" as an important part of this ethic, she

> *embarked on a mission to understand nature, to learn about all the things 'out there', and their interrelationships; to understand something of ecological processes. I have seen this scientific mission as a positive thing, a move on from passive and indulgent awe, but hopefully without losing my sense of wonder.*

In pursuing her "scientific mission", Helen examined "*the philosophical question of whether nature can be seen to exist independent of its observation*". However, she firmly admitted that she could still have experiences in nature: "*the stoat running up Long Clough with a rabbit in its mouth, ... I believe there are material objects 'out there' which are not of our making.* Clearly, ontologically, a realist philosophy shapes her ethic (Chapter 2.4) but she admits to being confused when trying to unravel the different environmentalists' perspectives on nature, of "*not being sure of exactly what is 'natural' and what is determined by human domination and influence*". She sees that part of this problem of interpretation is people's differing life experiences that shape the way they perceive and respond to nature, that nature as 'social construction' presents problems if one is searching for a shared worldview (Chapter 4.6). She asks: "*How do we decide which worldview is best?*" Accepting that her own environmental ethic "*is rooted in my historical, cultural and ecological context, and has grown from action*", she cites Merchant (1992:13): "an environmental ethic must be seen in relation to actions if we are to realise the human potential for positive environmental change".

In my report on her assessment for Module AN2, I wrote:

> You have written a challenging and reflective piece of work which I had enjoyed despite the sometimes downhearted tone of your writing [and you have] provided an introduction to the philosophical issue of whose construction of nature should we go along with.

In these early stages of the MA course, Helen was evidently motivated to grapple with some of the difficult conceptual issues regarding human relationship to nature so I asked her to pursue the idea of the social construction of reality in her assignment for *Module AN3: What Knowledge? For What Purposes?* and to reflect on the implications for environmental education of the postmodern tendency to 'retreat from the real'. This module has three purposes: firstly, to examine whether the societal changes taking place today have implications for the ecosocial crisis; secondly, to consider the relevance of science and social science to our understanding of the global environment and the ecosocial crisis; and, thirdly, to reflect on the implications of postmodern thinking for environmental education (Chapter 2.3). Before receiving her essay for assessment, I had some misgivings, as I had with Sarita Kendall

(Section 6.4), about whether the ideas examined in the module texts were relevant to her role as education officer. She had not asked for phone tutorials prior to submitting her essay, so I expected at some point, as I had with Sarita Kendall, to receive a note from her to say, bluntly, that postmodernism had little relevance to her personally or professionally. However, in the event, her essay generated a acritical encounter that was a defining moment in that she examined the arguments about the nature of environmental knowledge confidently and impartially showing a critical reading of the modern/postmodern literature. Significantly, her essay, *Modernism/Postmodernism: is the future hybrid*? Is not decoupledm from her role as education officer but connects to some of the key conservation and education challenges facing the Wildlife Trusts in attempting to redefine their role in times of social change.

Discussion

In the following extract from the first part of Helen's essay in response to the assignment for Module AN3, she questions whether science should continue to be the main intellectual resource for solving the ecosocial crisis. Initially, she is sceptical whether postmodernism can offer any insights as to how to improve the human-nature relationship:

> *If, as in the views of postmodernists, science is a fiction and only a fiction, what of the nonhuman world out there that is "active, alive and above all real?" (Merchant, 1994: 139). If there are no truths in nature beyond the semiotic, then nature will "become little more than a private vision and lose all claim to serving as a norm or guide in any degree for humanity" (Worster, 1994: 68). As Soule and Lease (1995) have shown, here is justification for environmental destruction. Developers and even conservationists are able to argue that since nature is entirely a human creation and has many manifestations, then we can do with it as we wish: dismantle it and re-fashion it somewhere else or in another form.*

Here she sides with the critical realist ontology in opposing a strong social constructivist perspective that denies "there are features of the world which exist independent of discourse and social construction" (Dickens, 1996: 74; Chapters 2.4 and 4.6). In supporting a realist vision of nature conservation in the UK, she poses a dilemma for science. In her field of work, it is science that provides the basis for making decisions concerning what is to be conserved: *"The rush to take action [about what is to be conserved] sometimes appears to be based on a*

short-term scientific snapshot which is presented as an unqualified statement". She takes the example of the American mink to elaborate this point:

> *There are good reasons for the trapping of the American mink to ensure the survival of the water vole but who can say what the long-term effects of this decision will be? The subject is fraught with ethical and ecological controversy; it is also bound up with the relationships between wildlife organisations and funding organisations and competition between wildlife NGO's.* [Consequently she asks:] *"Is it possible to (re)create nature from the privileged position of the science ecology alone?" ... Conservation in such uncertain times can mean fragmentation. In many UK conservation organisations, the challenge is finding a way of bringing together the knowledge and experience of scientists and social scientists, with more everyday experiences of nature. This requires an acknowledgement of the value of values, the significance of the environmental history of individuals and cultures, and the importance of local place.*

So, where uncertainties like this exist in nature conservation, Helen argues that science can become a means for domination of one NGO over another, conservation officers' views over environmental educators, or one species over another. With reference to her educational responsibilities for meeting National Curriculum targets, she recognises that this role

> *hangs on to its ... modernist principles of teaching science of the environment: stream dipping, deconstructing owl pellets, practical conservation work; tasks the children thoroughly enjoy and which enable teachers to achieve attainment targets.*

In order to explore the possibilities for bridging the gap between the scientific rationale for conservation practices and the culturally-modulated interpretations of nature such as the "*environmental history of individuals and cultures*" to which she refers above, Helen reconsiders the potential of postmodern ideas for re-orienting educational approaches in the context of conservation. Her suggestion is *"perhaps it is time to listen to different and more diverse voices"*. In the extract below from her assignment, Helen demonstrates her understanding of how postmodern conceptualisations can offer new approaches to environmental education:

> *A postmodernist approach to environmental education might be characterised by participation and pluralism, it would encourage explorative methodologies and an interdisciplinary approach. ... Postmodernism's focus on language and*

deconstruction of texts can demonstrate the importance of context and contingency. It can draw attention to bias, privilege and the importance of communication. Gough (1993) argues that the narrative strategies of fiction may be more appropriate for representing science and the phenomenological world to learners than the expository textual practices that have dominated science and environmental education to date. He argues that fact and fiction are much closer culturally and linguistically than is implied. Donna Haraway showed, in her classic work, Primate Visions (1989), just how science and fiction are culturally interconnected. Haraway and other postmodernists, treat science as narrative: "especially western people produce stories about primates while simultaneously telling stories about the relations of nature and culture, animal and human, body and mind, origin and future". Indeed from the start, in the mid-eighteenth century, the primate order has been built on tales about these dualisms and the scientific revolution.

As Gough (1993) acknowledges however, there is an immense amount of work to be done before environmental educators can achieve such insights: the "difficulty for science teachers and environmental educators seems to be that many have cast themselves as 'defenders of the faith' - defenders of the privileged status of modern science - rather than as 'understanders' (connoisseurs and critics) of the myths, narratives and rituals which constitute science in the contemporary world" (Gough, 1993: 616).

Thus, after Helen's initial scepticism that postmodern ideas had little relevance for redefining the role of conservation, the above extracts from her essay reveal her readiness to contemplate the possibility that postmodern insights might help her challenge the inclination for conservation practices to celebrate scientific rationality and certainty. Her response represents a reconstructive view of postmodernism in that it opens up the possibility for her *praxis* that accepts its transformation properties and the valuing of dialogue among different forms of knowledge (Chapter 2.3.1). Her argument represents not only a creditable response to the conceptual issues raised in the MA course materials but also shows her willingness to reflect critically on the contribution theoretical ideas can make to the challenges facing nature conservation. This comes across compellingly in the following extract from her Module AN3 essay:

Postmodernism helps us to realise that there are not necessarily always right answers; it can encourage us to celebrate diversity. It can also encourage us to recognise that what the individual student brings to the learning process is a vital part of that learning. However, it has to be acknowledged that not all

environmental issues are value issues and that whilst being responsive to individuals' experiences of the world sounds laudable, it is simply not possible in the situations in which most environmental education is practised. There is not the time to ensure that every student can participate equally. The different backgrounds and experiences which students bring are unknown to environmental educators working in conservation organisations. It is also the case, that there is a need for the more experienced (the 'teacher') to tell the stories of the past.

Environmental education in nature conservation organisations needs to draw on both knowledge and values, and postmodernism can help us to articulate the latter. Whilst most of us, however, would wish, despite postmodernism, to continue to search for unity and totality, perhaps our focus should be upon what that searching reveals. The tensions between the old fashioned dichotomies of nature/culture, and reason/emotion and the routes we might take to try and resolve these are an important focus for environmental education for our hybrid future.

Evaluation

(In this discussion, I refer to the four qualities of a socially critical theory of environmental education that I emphasised at the end of Chapter 3.5: *empowerment*, *critical reflective thought*, *empathy,* and *discrimination*).

Helen's response to the philosophy of postmodernism is not to support a postmodern worldview *per se*. Rather, I believe she is encouraging researchers and environmental educators to re-examine familiar concepts such as 'old fashioned dichotomies' as a way of participating in what Rawles (1998: 133) calls "a sort of ground clearing exercise, with the philosophers carefully and consistently worrying away at the foundations of our ideas and activities". Helen's critical reflections on the implications of postmodern ideas for environmental education in the context of nature conservation shows the qualities I expect of an *MA in Environmental Education* student. In her case, Helen confronts the issues currently facing conservation organisations. She sees postmodernism as a way of enabling educators and researchers within these organisations to challenge the idea that a form of knowledge based on one form of reasoning (science) can restrict other forms of knowledge and reasoning that might have the potential to pave the way out of the ecosocial crisis. This is a reconstructive postmodern perspective (Chapter 2.3.1) that allows conservation practices to

move towards *'hybrid future'* in which the scientists' inclination for describing the concrete yields to alternative socially constructed and pluralistic perspective on the biophysical world.

Subsequently, in her research dissertation, *'Tagging Along Behind': the educational significance of the biodiversity action planning process (Appendix D)*, Helen applied her understanding of postmodernism, as I have described it above, to critique the formulation and practice of biodiversity conservation, in particular its privileging of scientific knowledge as a basis for biologists to improve the survival odds of species. She argues: *"The reductionist approach may be perceived as threat to affective relationships with the natural world, as a negation of the kind of experience in nature that is so keenly felt to be important"*. She quotes McAfee (1999: 140) in arguing that *"reducing nature to data ... 'devalues the intricate ecological and social relationships in which biological diversity is embedded'"*. Her research showed that, at a national level,

> *attention has so far focused primarily on the technical tasks related to species and habitat action plans whereas the objective of raising public awareness and encouraging involvement in biodiversity has had no targets attached to it.*

She acknowledges that *"the Derbyshire Wildlife Trust was one of the first organisations to complete the Biodiversity Action Plan (Derbyshire Wildlife Trust, 1997)"*, but for several reasons, including the subordinate role of education in the Trust's interests, biodiversity did not incorporate the kind of 'postmodern' values that Helen argued for in her essay for Module AN3. In this essay, she argues that biodiversity requires "to be immersed in the concepts of human rights, equity and democracy, which are core issues in education for sustainable living" (Fien, 1997: 24). (Chapters 1.5, and 2.3.1; Section 6.4). In considering how her organisation should develop its role in addressing these 'core issues', Helen asks that the Trust should

> *take responsibility for reclaiming the social and cultural contexts of nature. What do Derbyshire's mountain hares or Cheshire black poplars mean to people? What other values of nature do local people hold? ... We need to take a more proactive role in encouraging public involvement in the BAP [Biodiversity Action Plan] process and developing local action work.*

The reductionist language of biodiversity to which Helen draws attention in her study tends to see nature as 'people-less' and value-free. If the quest for sustaining (even, recovering) biodiversity is to be successful, the cultural significance of nature must inspire the biodiversity process, as I have argued in Plant (1998a: 7-11).

In her essay for Module AN3, Laura Harvey (UK), a Primary School teacher, confirms Helen's contentions about a postmodern approach to environmental education since "it *would encourage explorative methodologies and an interdisciplinary approach*". She argues that the current emphases on measurable outcomes in the primary school curriculum removes children further from contact with the natural world "*which serves to sever any spiritual connection that might possibly remain and exacerbates the view that we can survive happily* apart from *nature*". She is concerned that reality and nature are "*increasingly being replaced by artificially manufactured images that are both spectacular and easily accessible*" (see Chapter 2.3.2 in this research account). Paradoxically, to counter this postmodern trend of high technology, she advocates a postmodern approach to environmental education! She asks:

> *As postmodernism encourages us to reject scientific compartmentalising of the natural world, is it possible to replace this with moral understanding of the importance of the interconnectedness of nature and human kind?*

Her answer is that:

> *Increased exposure to nature provided through environmental education can serve to increase our propensity to experience a sense of otherness which allows us to step outside the confines of the human-based phenomenon, language. Discourse could instead be actively utilised during moral debate within the classroom to accompany our 'rediscovery' of the natural world. Children must be provided with the opportunities to express and evaluate their own and others' opinions.*

That formal education allows little opportunity for children to experience the environment as an invaluable source of learning, is seen by Laura as the result of subject-based, compartmentalised learning that "*ignores the needs and demands of flexibility in the postindustriual economy by clinging to ancient subject identities (Hargreaves, 1994: 57)*". Laura argues that the sterile classroom environment means that learning does not necessarily

apply to the children's lives outside school and "*will do little to elevate them above [society's] negative aspects of materialism and selfishness.*" She sees the preoccupation with "*measurable outcomes within education [as degrading] those* immeasurable *elements of school life such as the acquisition of spiritual, moral and aesthetic understanding*".

In response to her critique of the prescriptive nature of the National Curriculum, Laura argues, as does Helen, that environmental education could be viewed as

> *a stepping stone between modernism and postmodernism for today's schools. It can provide a basis for balance by developing life skills through postmodernist debate and active participation alongside the education system's disinclination to step outside modernist practices involved in observation and understanding of the scientific principles governing nature. This marriage of the plurality of views, increased understanding and reflection with scientific explanation and evaluation is an invaluable tool for engendering an appreciation for aesthetic beauty and respect for the environment. There is also an opportunity for environmental education, whose appeal is largely cross curricular, to exemplify a positive way forward within our antiquated, compartmentalised and subject-based curriculum.*

In closing her essay, Laura writes that the postmodern qualities that encourage debate are being continually rejected since there is a large gap between green strategies for global change and the postmodern criteria of "difference, diversity, foundationless and humility" (Dobson, 1995: 153). Yet, she argues, the need for formal education to encourage diversity of thought is necessary if future policy makers are to see a global way forward for global change.

As I have noted above with regard to Sarita's response to Module AN3, in tutoring distance education students, I recognise that postmodern ideas are characteristically Western and are not easily reconciled with some other cultural worldviews. Charles Paxton (Japan) made some interesting comparisons between Western and Japanese cultures when reflecting on the implications of postmodernism in Japanese society. In Module AN3 assignment, he recognises that 'postmodern' questioning of students may be more effective in the post-industrial West than in the relatively newly industrialised nations of the Far East. In focusing on the Japanese mind-set, he reflects on how the "*heterodox 'other' has been systematically crushed over the past four hundred years*". He cites Hearn (1959) who writes of "*the immense difficulty of*

perceiving and comprehending what underlines the surface of Japanese life". Difficulties can arise when people apply Western social political and economic concepts in discussing Japanese society (and any other for than matter) with the result that the observer can easily be misled as to how things actually work. Charles draws attention to a very significant difference between the (Enlightenment) origins of modernity in Europe and the way that modernity arose in Japan:

> *Modernity was not initially espoused in Japan as a means of furthering human emancipation. Nor did modernity evolve over several hundred years as it did in Europe. Nor was it espoused by intellectuals challenging hierarchical perceptions of man in relation to God/Nature, nor was it rooted in Aristotelian thought, or Western teleology. When feudal Japan was confronted with the choice of adopting modern technology without the emancipatory baggage from the Dutch, the Tokugawa feudal power unequivocally chose the Dutch option.*

There are, then, profound historical differences between the arrival of modernity as a social programme of emancipation in the West, and the way modernity arrived in Japan. As Charles goes on to say: *"Modernity arrived [in Japan] stripped of philosophy, with its naked mechanical superiority as its principal recommendation at a time when nations that lacked mechanisation were controlled by those that possessed it".* His reflections on the nature of modernity in Japan has caused me to reflect deeply about the relevance of the MA course to overseas students, and particularly with regard to Westernised bias towards postmodernity that are written into Module AN3. Nonetheless, the contradictions between the representations of modernity and postmodernity (Chapters 2.2 and 2.3) as presented in the course texts, and Charles' interpretation of these concepts in Japanese society, have been brought into the open for critical appraisal by both of us, just as the MA course processes intend that they should (Chapter 3). However, in evaluating whether Japanese society has any characteristics that could be called 'postmodern', Charles notes that contradiction is tolerated since many centuries of political oppression has led to the near absence of any idea that there can be any truths, rules principles or morals that always apply, no matter what the circumstances. He cites Wolferen (1996: 457) to support this view,

> *It is socially acceptable in Japan for 'reality' to consist not so much of the results of objective observation, as of an emotionally constructed picture on which things are portrayed the way they are supposed to be.*

One consequence of this 'postmodern' perspective on reality is that the Japanese Far East Fisheries Department can argue that Japan should continue whaling regardless of other nations' adherence to the IWC's moratorium, and can create the peculiar propaganda "Eat a Whale to Save the Earth"! This is not a surprising response when, as Charles notes,

> in a society regulated by a hierarchical social structure, it seems that Japanese people operate largely on the basis of agreed consensus about issues whether the course of action is the right one or not.

In their writing, Helen and Laura are able to respond to the issues raised in the course materials for Module AN3 related to their non-formal and formal educational contexts, respectively. In my analysis of postmodernism in Chapter 2.3, I am sceptical whether postmodernism offers environmental educators any consensus as to how to respond to the ecosocial crisis. Instead, as in Chapter 2.3, I am persuaded by the arguments submitted by these two MA students' essays that their recognition of the significance of a hybrid educational philosophy lying between modernism and postmodernism offers environmental educators in both formal and non-formal education a fruitful basis for their research and teaching.

Postmodernism acknowledges the interaction between thought and emotion, thinker and object in order to 'humanise' the instrumental and compartmentalised approaches to formal and non-formal education revealed by Helen and Laura. Moreover, their thinking suggests that the reality to which they refer is seen in the relationships between things, the latter simply constituting the structures through which the relationships are realised. That is, there is a dialectical relationship between humans and the material world as critical realism proposes (Chapter 2.4).

6.6 Critical Encounter: critical action research, distance education and EE (Japan)

Students:

Charles Paxton: English Teacher, Tokyo University, Japan

Context

Charles is a full-time English teacher, part-time photojournalist, and environmental educator, acting as the sole co-ordinator of English teaching at the Tokyo YMCA Community College, Toyocho Campus, Tokyo University. In what follows, I examine Charles' attempts to involve his Japanese students in taking action for environmental protection. I focus the discussion on two aspects of our tutor-student relationship: the extent to which he adopted critical action research, and the effectiveness of my tutoring of him by distance education. Through our frequent email and occasional telephone dialogues, I often reflected on the value of the MA course materials to his professional needs and cultural context – as I had with Sarita Kendall, above. The following discussion focuses on his active involvement in the establishment and running of the Hosei Island Trust (HIT), an environmental group in which his students participated in June 1996. Charles first drew attention to this project in *Module AN4: Realising the Potential of Environmental Education* when he declared his intention to offer a low-cost YMCA student/teacher ecotour to the Philippines. In the next *Module AN5: Environmental Education in Action: exploring local community contexts*, he conducted an investigation into HIT's activities to determine whether it would provide a framework for project-based EE at other Japanese learning institutions. HIT involves Charles encouraging Japanese students to develop their autonomy by

> *[paying] off the loan for the purchase of Danjugan Island (off Negros Occidental in the Republic of the Philippines) in order for PRRCFI to establish a special marine management area (Email from Charles, 22.5.97).*

His research for Module AN5 centred on collecting data from personal communications and face-to-face meetings, email communications, personal involvement in HIT's activities, the production of a promotional video and two semi-structured interviews. The first of the

interviews was with his critical friend and the second with his critical friend's wife, both of whom are active environmentalists in Japan and involved in a joint project between the World Land Trust and Philippine Reef Rainforest Conservation Foundation Inc (PRRCFI). HIT was to build on these initiatives. He accounted for his findings from his action research approach in Module AN5 as follows:

> *My investigation has led me to believe that the HIT project is a successful example of long-term project-based environmental education through action research. It is enabling 'pragmatic' knowledge development of the sort that underpins John Elliott's 'Dynamic Curriculum (Elliott, 1994), fruit of the ENSI project, and is leading to tangible action that my critical friend hoped for from the project rather than the usual Japanese scenario of people just talking about the problems. I have come to see that the 'remarkable results' that Altrichter* et al *(1993) speak of aren't the preserve of professional teachers; student conducted action research in HIT is confirming that amateurs can engage with professional problems without recourse to external direction.*

I was satisfied with Charles' summary of the project, and in my formal report on his assignment (Module AN5 assessment: October 1997) I wrote:

> Your account of HIT references relevant literature on action research and is concerned to meet assessment criteria. ... Clearly your initiatives and energy have encouraged people to become more reflective about their actions as the evidence shows. HIT has been a remarkable project owing much to yours [and your critical friend's] commitment to get people involved. ... Your use of a range of document sources to support your claims enriches my understanding of your HIT activities very well. The account 'rings true'.

Two points arise from this email. Firstly, Charles assumes 'action research' to be of the kind that does not involve a socially critical dimension. However, as the following account shows he does refer to the cultural impediments in Japanese society that constrain students from becoming critically reflective. Secondly, the point in my reply about 'ringing true' reflects an apprehension about my tutoring of distance education students, but one that has never been problematic for me. It is that, since I have no opportunity of 'being there' in order to supervise my students or visit them from time to time, I have to believe what they tell me they are doing. For all I know, Charles could be describing someone else's work or making it up as a fiction. My faith in the authenticity of students' writing, and their related environmental education

work, is built on the establishment of a close tutor-student relationship, beginning with the autobiography in Module AN1, which allows me to monitor the consistency and accuracy of what they are telling me about their professional development (Chapter 3.4). If the *MA in Environmental Education* course was operated as a top-down model of learning whereby students delivered to me essays, reports and dissertations that were not firmly embedded in their practice, and that responded to set titles for pieces of writing, then the possibility for plagiarism would arise. Instead, as should be obvious from the extracts in this chapter, each piece of writing from a particular student is distinctive to that student since the assignments they complete are firmly located in their particular professional and cultural contexts[97]. Moreover, any writing they send me follows prior negotiation during which we progressively pin down the particular issues that are relevant to their individual professional needs.

Whilst I was generally pleased with the (non-critical) action research approach Charles adopted in his study of the HIT project, and the way he initiated his students' action research, in my report on Module AN5, I included the following suggestions for further examination of the HIT project and how it might further advance his professional development.

> I cannot fault your critical assessment of the HIT project which draws on a complex and dynamic interaction with students and colleagues. What I found difficult to assess was your assessment of relations at a personal level. ... How has action research benefited your own empowerment in helping to manage a project like this? What qualities might be expected of an environmental educator ... in generating local support in a non-Western culture? How do you replicate your success to make it applicable to other projects?

Discussion

In response to the above questions, Charles wrote:

> *The Crit for AN5 was excellent .... and I will take the opportunity to take up those important questions about what AR [action research] is doing for me in*

[97] I was astonished when a senior colleague suggested that I redesign the MA course so that students responded to set titles in order to make the assignments easier to mark and thereby reduce my workload. I could not and would not (and an MA course should not) run a postgraduate course of this nature for it would deny me experience of the rich learning that derives from reciprocal and individual tutor-student interaction based on the use of the 'open' text and dialogic tutoring (Chapter 3.3.2).

AN6, and in the dissertation. Many thanks for your patient determination to see me through the dissertation in 1998 (Email, October 7, 1997).

Module AN6: Review of Professional Development in Environmental Education asks students to review critically their learning at the 'half-way' mark. In recognition of the feedback I gave Charles concerning action research in AN5, he felt that his findings validated the success of HIT's development and endorsed the production and publication of a guiding framework for project-based EE at other Japanese learning institutions. He wrote:

> [*I did not*] *acknowledge whether this family involvement was problematic in terms of objectivity – I feel it is if I give an observer cause to question objectivity*[98]. ... *Family power relations haven't harmed yet the HIT circle's development, as we are all results conscious. ... It falls on me not to play down* [my family's role] *but to expand my own. AN5 leads directly to my dissertation, where I intend to focus* my *work with HIT and its influence on them and my EE praxis.*

I was pleased that Charles had responded positively to my questions regarding his personal involvement in the HIT project. At this point, I asked Charles to produce an action plan for the dissertation, and he chose to base this on a more in-depth critical evaluation of his involvement in the HIT project; and I wanted him to ensure that this plan responded to the above questions I raised regarding his AN5 assignment. The following are my questions, reformatted by Charles', and the significant parts of his reply to them:

> *Q1: Firstly, can your research be steered by reflection about your own practice? That is, how does your research into HIT's projects inform your professional understanding of EE in your context?*
> *A1: I agree it is fundamentally important that reflection on my practice informs my research. ... I fear that my focus on professional results in terms of PR and fund-raising has allowed me to be content with members' empowerment without due consideration to the expectations of first year students who may have quite different ideas about what an environmental group should be and should do. I need to know more about what Japanese students think in order to make informed corrections to my praxis. I suspect that along with the shoganai attitude there is a more powerful 'kankenai' (it is none of my business) attitude; they may not want me to acknowledge the connection between their own lifestyle and environmental*

[98] Involved in the HIT project are Charles' brother and his brother's wife.

problems because that recognition would demand changes in their lifestyles that would be 'mendokusai' – troublesome.

Q2: Secondly, and related to the above. Is the extent to which AR projects that you/will have monitor(ed) involve students in social critique. To what extent will the research reveal students' response to the idea of social critique? I think I can see some of this emerging when you examine issues of power relations, shoganai, and the success or otherwise of HIT. Can you think about this a bit more?
A2: Yes, I certainly shall. When you return from Kenya, I will provide a more detailed plan along the lines that you kindly advised.

Charles' willingness to respond to my criticism with regard to action research is evident from the above exchange. His answer to Question 1 reveals the constraints on his attempts to 'see through' the cultural barriers that I referred to in connection with postmodernism at the end of Section 6.3. It is in this way that he is being socially critical in recognising that in his attempts to involve Japanese students in the democratic processes required on the HIT project he needs to understand more fully the cultural impediments to the social actions he is asking of them.

With regard to my second question, I refer to selected concluding sections of his dissertation: *Towards Education for the Environment with Japanese University Students: a critical study of my professional praxis through action research.* For example, in the following passage he recognises the limitations of his action research approach to his study of the HIT project.

As my work progressed, I became increasingly grateful for my tutor's advice to mainly confine my original research to study groups with which I had personal contact, and in relation to my praxis. My reflexive study ... has been quite challenging and rewarding enough.

Considering the impediments to and the need for education for the environment in the Japanese cultural context, the HIT project is valuable and progressive. The large proportion of sociology students in HIT is an important factor in the projects' qualification as education for the environment as they recognise the value of social critique.

As regards my earlier question whether the experience of the HIT project is reproducible, he offers little further comment except to provide general pointers regarding structural issues in running this project. He recognises the value of students' active involvement in fund-raising

and exploring the socio-political shaping of the environment; and the positive influence of a small number of people, but adds little to this. In retrospect, I believe that this question was unfair in that Charles' running of the HIT project was an 'insiders' experience following engagement with a particularly challenging cultural context and that I should not have expected him to consider its transferability to other cultural contexts – see Evaluation, below.

My tutoring of Charles' professional development provides some relevant insights into my role as a distance educator. I have discussed some of the ways I try to socialise my students into the course processes in Chapters 3.3 and 3.4, including the value of establishing dialogue so as to reach some common understanding regarding the issues raised by the course texts and their applicability to a student's cultural and professional contexts. When I asked Charles to say what he gained from studying via a distance education course, he replied as follows (MA questionnaire, October 199, Appendix E):

> *I have some observations on my first experience of distance education as the mode of learning on the MA in Environmental Education course:*
> 1. *It allows me to study within my working context. I have retained my jobs, there has been no loss of income since starting the course, and my studies inform my work and vice versa.*
> 2. *It encouraged me to read widely, think more reflexively, and to focus. The module reading lists, the basis of a useful reference library, has clarified and increased my knowledge on environmental, and educational issues.*
> 3. *The feedback system is very supportive. My study supervisor - Malcolm Plant's subtle art of corrective praise is highly motivating. I'm blessed with Steve Hesse as critical friend, he is Associate Professor at Chuo University, environmental columnist for The Japan Times and advisor to UNEP.*
> 4. *The course is well structured, and provides spiralling reinforcement of content in a fashion that is supportive and engenders confidence. The problematisation of introducing change is important. ...It legitimises and redeems environmental education in my teaching context. ... It has drawn my attention to the YMCA's need for up-to-date socially relevant resources and shown me where I stand ideologically, and where I am going as an educator.*

Evaluation

(In this discussion, I refer to the four qualities of a socially critical theory of environmental education that I emphasised at the end of Chapter 3.5: *empowerment*, *critical reflective thought*, *empathy,* and *discrimination*).

The regular dialogue I established with Charles Paxton as he pursued his studies, confirms my view that distance education can operate effectively to the advantage of the professional development of both tutor and student (Chapter 3.4). Even though Charles and I never met, one benefit of this positive relationship was that I was able to help Charles salvage his studies after he had retired from the course for a time through ill health. The exchanges between us led him to revise the meaning of critical reflective practice continually with reference to his professional role, as I have presented the exchanges above. A particularly significant outcome flowed from my continuing concern that the course materials might not be appropriate for some students in non-Western cultural contexts. In Charles' case, I had little idea before he reflected on his professional circumstances in Modules AN1 and AN2, that the Japanese social context would be so problematic for him. The cultural challenges arose in respect of Charles' attempts to involve his students in decision-making as a group, and with regard to the official Japanese attitude to environmental issues such as whaling. Nevertheless, in acknowledging openly these challenges to his professional role, he responded in the way the course materials and my supportive tutoring required that he should. The extracts above indicate very clearly that Charles became empowered to proceed with the HIT project with his students (once he had identified it as a potentially rewarding context for further inquiry in Module AN5), despite the difficulties in developing his students' independent working for the project. Perhaps I should have ensured a more manageable research focus for Charles, and more directly concerned with Charles' personal relations with the students just as my earlier response had suggested. However, I was always conscious that such a narrow focus might miss the relevant cultural factors influencing the way his Japanese students responded to the project tasks. As the above extracts show, Charles showed his ability for *critical reflective thought* which is best captured by this reflection at the end of his dissertation.

Action research has helped me to reflexively improve my praxis by indicating where, when and how improvements can be made. It provides a flexible structure to my work that is openly explorative not prescriptive. It allows me to formulate, explore, implement, maintain and discard options.

In respect of my own empowerment, I draw from the lengthy and detailed exchanges with Charles a strong belief in the importance of close monitoring of a student's cultural context as a necessary setting to the pedagogical issues with which they engage. That critical action research is merely a matter of ensuring that students evaluate how critical theory informs their professional practice in isolation from their cultural setting, is an assumption that could be accused of academic imperialism given that critical theory arose as a commentary on Western/European society (Chapter 2.5). The openness of the MA course texts allowed me the flexibility to encourage Charles to negotiate the professional issues that are of relevance to him, and in the process to empower our *praxis*.

As for evidence of *empathy* in our joint *praxis*, I suggest that this takes two forms. Firstly, it is evident that I empathised with Charles' difficulties in advancing his *praxis* through critical reflective practice as I have explained above. Moreover, as I learned more about the cultural issues that impinged on Charles' attempts to actively involve his students in the HIT project, I was more willing to respond by adapting my tutorial advice to accommodate these issues. That is, I exercised my discriminatory powers in differentiating between the explicit needs for Charles to develop his *praxis* through critical action research, and the necessity that I respond to the professional conditions under which he struggled to improve his understanding of what constitutes a critical theory of environmental education in the Japanese context. Secondly, as the extracts regarding the HIT project have shown, Charles was ready to empathise with his students' cultural background in his attempts to involve them in a project that is a rare occurrence in Japanese student circles (Charles Paxton's dissertation: July 1999).

I claim that the above account of my dialogue with Charles provides reliable evidence that he and I established a dialectical framework for advancing our professionalism as environmental educators and researchers. These reciprocal exchanges in themselves meet Habermas' criteria that social progress occurs when people succeed in establishing forms of democracy governed

by communicative rationality. The 'social progress' in respect of our dialogue is evident in our largely successful attempts to reach what Habermas rather grandly calls an 'ideal speech situation' (Habermas, 1979), and what Carr (1994), equally impersonally, defines as, "a democratic form of social life in which impediments to rational discussion have been systematically excluded". The movement towards a shared understanding of the reality of Charles' professional and cultural contexts is an axample of what constitutes one of the goals of critical realism. This is that our ability to restructure the human social world is through interaction so that we can avail ourselves more effectively of the meanings and values we attach to the reality of that world; i.e. the professional and cultural world in which Charles lives (Chapter 2.4.2).

6.7 Reflections

I provide a bief summary of this chapter since, in Chapter 7, I will be examining the findings from the critical encounters and a questionnaire against the four component research questions. I will review the chapter with reference to the term 'reflexivity'. On page 8, I claimed that my research account is reflexive in trying to understand my *praxis* in relation to the theoretical underpinnings of the *MA in Environmental Education* course rationale and processes. Additionally, I claimed that reflexivity allows me to theorise at every stage of my research. By being reflexive, I could engage in the kind of critical action research I encourage my students to undertake in their varied cultural and professional contexts. I saw my task as discovering the meanings the students and I attach to our learning, how we interpret situations and what our theoretical perspectives on these issues are. As the critical encounters show, I am in a privileged position to do this since my involvement with students is a dynamic and dialectical experience for both them as the 'researched' and myself as the researcher. I ask: Have the critical encounters presented in this chapter fulfilled these assumptions?

I begin by acknowledging that there are different levels of reflexivity. At a partial reflexive level, there is the relatively private activity of, say, keeping a research journal – what Woolgar (1988: 22) has called ' benign introspection'. At the other extreme, reflexivity can mean a self-conscious process of knowing which involves the researcher in 'radical constitutive reflexivity'

(*ibid*). A shortcoming of the first level is that the researcher may resist making knowledge claims public; and of the second, that the researcher reflects on their own subjectivities to the extent that they become involved in an infinitude of self-reflexive iterations (Gergen & Gergen, 1991: 77) – again, conceivably resisting making knowledge claims public. The reflexivity evident in the critical encounters described in this chapter situates my reflexivity somewhere between these extremes since the students and I publicise our knowledge claims to a wider audience. For example, I do this by presenting this research account for critical appraisal by peers; and the students do it by bringing their learning to bear on their professional roles and making their learning accessible to me. That is, the fundamental nature of the kind of reflexivity evident in this chapter is that my students and I are engaged in a social and dialectical process in which the researcher and the resesearched have become 'visible' to each other as we participate reciprocally in our professional activities. That is not to say, as in conventional ethnography, that I am physically present in the lives of my students, but that through the communications systems at my disposal I am real enough to be accepted as 'being there'. This is what I believe Davies (1999: 7) means when she sees reflexivity as "express[ing] [my] awareness of [the] necessary connection to the research situation and hence [my] effect on it".

However, despite the evidence for this connection, as illustrated by the critical encounters in this chapter, I admit to being somewhat ambivalent regarding the particular extent to which I am implicated in the students' learning. For example, there is an unavoidable objectivity at work in our exchanges in that the students are inclined to recognise my role as 'captain' rather than 'shipmate' (Chapter 5.2.2). Of necessity, too, is that their participation as students and my role as tutor has to recognise that our reciprocal learning must pay heed to the underlying rationale and quality assurance processes rooted in the MA course. That is, that the MA is subject to my University's quality assurance processes and academic regulations. In addition to my interest in the captain/shipmate duality, I am also interested in the extent to which my socio-historical context influences the dialogue between the students and me. I have reflected on this interest when examining the relevance of distance education programmes sourced in one cultural context to those in a different context (Chapter 3.3). Since this issue arises in one of the four component research questions, I will leave further discussion until Chapter 7.

It is evident from the exchanges analysed in this chapter, that in 'travelling' to situate myself in the professional lives of my students, I am not interested solely in learning more about the professional issues I have to deal with when running a distance education course. The 'journey' is also to enable me to learn something about the professional lives of my students, and to help them grapple with the contradictions they meet in trying to understand the complexities of human relationships to the biophysical world. This engagement is of a critical and searching kind that is responsive to my own values and to those of my students. As such, it fulfils critical theory's claim that the collaborative search for knowledge about our professional practice engages with the prevailing social structures that work against our attempts at emanciptory *praxis*.

CHAPTER 7
INSIGHTS AND CONTRIBUTIONS

[Y]ou must learn to use your life experience in your intellectual work: continually to examine and interpret it. In this sense, craftsmanship is the centre of yourself and you are personally involved in every intellectual product upon which you may work. To say that you 'have experience', means, for one thing, that the past plays into and affects your present, and that it defines your capacity for future experience.

(Wright-Mills, 1978: 196)

7.1 Introduction

In seeking closure to this research account, I have a sense of ongoing possibilities rather than anticipating hard and fast conclusions. The 'conclusions' I do offer are in the nature of insights and contributions to the four research questions that have sprung from matters concerning the theoretical foundations of the *MA in Environmental Educa*tion course and contested knowledge concerning the ecosocial crisis addressed in Chapters 3 and 4. I claim that other educators and researchers involved in postgraduate environmental education programmes will find my insights and contributions of value to them. However, I think it would be all too certain if I were to portray these insights and contributions as foundational beliefs, and insist that all postgraduate environmental education programmes should integrate them as a matter of course. Not only would such a conviction fail to notice the subtle nature of the complex dialectical relationship between humanity and the biophysical world (Chapter 4.7), it would also pay scant attention to concerns that I raise in Chapter 5.3 about the unavoidable and necessary subjectivity of the individualised tutorial interactions I undertake with my students.

To some extent, the feeling of an unfinished journey arises from the nature of critical theory since its essential reflexivity means that it applies to itself as well as to the people who are studied. As Davies (1999: 5) notes, ethnographic research involving reflexivity is prone to self-absorption, blurring the boundaries between subject and object and denying the possibility of social research. Moreover, in the nature of reflexivity is an ongoing *social* process requiring reflection on the inherent unpredictability of society. Structuralists do not see theory in this way. While they recognise the ideological character of language and the unconscious nature of its operation, they believe that the language of science refers simply and unproblematically to reality itself. In contrast, the poststructuralist obligation for reflexivity collapses the distinction between science and ideology, so leading to the treatment of the former as the latter (Hughes and Sharrock, 1997: 184). Of necessity, reflexivity, in relation to my understanding of a critical theory of environmental education, has to contend with the uncertainties and misunderstandings concerning the consequences of human relations with the biophysical world, as I have argued in Chapter 4. This is a *political* endeavour for, as Habermas (1974) argued,

the effectiveness of theory is measured by its capacity for diagnosing the troubles of society, and contributes to the process of understanding and explanation that has, moreover, implications for political action (Chapter 2.5).

In examining the difficulties encountered in seeing current forms of education responding effectively to the ecosocial crisis (Chapters 1.3, 1.5 and 2.5), I put forward the thesis that a critical theory of environmental education at postgraduate level might provide environmental educators with an appropriate basis for their teaching. I have developed and evaluated this theory through a process of critical reflection that I also encourage my students to undertake in their varied professional and socio-cultural contexts (Chapter 6). Critical theory is concerned, not with assuming that there is a truth that can be reached by simply concentrating on the techniques of social research, as with positivism and empiricism, but with examining the relationship between people's everyday experiences and thereby to *generate* a social theory. In generating such a *social* theory, my task has been to uncover the meanings students and I attach to our learning, how we interpret situations and what our theoretical perspectives on these issues are. Indeed, Marx believed that the adequacy of social theory was not its ability to discover social facts as such, but its value "in informing actions, and in particular, political actions" (Johnson, *et al*, 1990: 144, cited in May, 1997: 37). This means, as Wright-Mills notes in the quotation above, that I am personally involved in the 'intellectual work' that this research account represents. The personal involvement has not come about by chance or contrivance on my part but has its origins in the contexts that I explored in Chapter 1. Indeed, to paraphrase Wright-Mills above, I recognise that my experience plays into and affects my 'present', and defines my competence to undertake the 'personal experience' that this research represents. That is not to say, as I revealed in Section 1.7, that there is a logical connection between past and present since the present also plays on the past; we are prone to construct the past in accordance with present-day understanding and the privilege of hindsight.

Even though we are caught up in a largely passive process of socialisation perpetuating old ways of thinking and acting, critical theory requires us to be aware that we carry with us the potential to transform our lives (Fig 7.1). The responses to the research questions that follow illuminate possibilities for education to help resist the social forces that assume my professional

responsibility, and that of the educators for whom I am accountable, is to reproduce existing socially and environmentally damaging social relations with the biophysical world (Chapter 1.6).

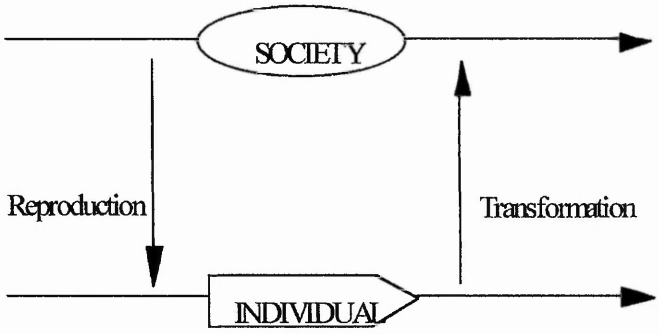

Fig 7.1 From reproduction to transformation (from Schratz & Walker, 1995:42)

7.2 The research questions

7.2.1 How they arose

Four component research questions emerge from the reflexivity of the research account. Questions 1 and 2 follow from Chapter 3 and questions 3 and 4 from Chapter 4. The answers to these four questions inform the main research question which is:

> **To what extent can I establish a sound theoretical basis for realising socio-cultural and ecological sustainability through a Masters course in environmental education?**

This research question arose from the need for being more knowledgeable about my *praxis* and that of individual MA students. The question assumes the reality of the 'ecosocial crisis' and its concerns about the sustainability of biophysical systems that support human social systems. This assumption does not stem simply from reading and teaching about the ecosocial crisis. My professional experience in England and from working overseas in Africa also informs this assumption (Chapter 1.7). By 'sound theoretical basis', I mean claiming a consistent philosophical framework for evaluating the human foundations of the ecosocial crisis, and developing a feasible methodological framework for critical engagement with the students for whom I am professionally responsible (Chapters 2, 3 and 6). By 'socio-cultural and ecological

sustainability', I am referring to my belief that the educational processes embodied in the MA course have the potential for responding to the great disruption between humanity and the biophysical world, and between our modern ideals and the experiences that tell of this disruption[99]. This main research question, then, relates to the underpinning rationale of the MA course that explores critical theory's interest in responding to the prevailing problematic relationship between humanity and the biophysical world.

In what follows in this section, I respond to each component question in the light of the evaluations in Chapter 6. In doing this, I find it helpful to refer to students' responses to a questionnaire that students complete at the end of their MA studies (Appendix E), not as additional primary data but to act as verification of the evaluations. In Section 7.3, I summarise my claims to insights and contributions derived from the research I have undertaken. In Section 7.4, I return to questions of validity with regard to my findings before presenting final reflections in Section 7.5.

7.2.2 Question 1 (Chapter 3.6)

> **To what extent does a distance education course that is written and taught in a western country stimulate a student's critical reflection about ecological and professional issues that are of significance to them in their particular socio-cultural context? Crucially, what are the goals and processes of distance education in a world that increasingly reconfigures space and time?**

This question arose from my belief that a response to the main research question requires the consideration of issues connected with the mediation of the course to students via distance education. In Chapter 3, I present the different ways of bringing students into the course processes and for capturing their interest but most students are distant geographically, and their educational background may not have provided them with the skills for critical reflection (Chapter 3.3). Encouragement of students' reflective practice begins early for some students such as Thessa Smith (Jamaica). Reflecting on the first module (*Module AN1: Introducing Environmental Education*), she writes:

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[99] Of course, it is ironic that humanity appears to be responding to the ecosocial crisis through rational forms of education in support of the *status quo* (Chapter 1.3).

> *At the beginning of the module ... all I expected was to get straight forward instructions on environmental education as is the case with other subjects. As I continued things started unfolding and I came to realise that the way you think, behave and treat your environment is conditioned by the values which structure our everyday experience of living, and the practical issues and concerns that emerge from such experience.*

I find it remarkable that a postgraduate student should expect 'straight forward instructions', but, Thessa's initial response, as I have noted in Chapters 1.3, 3.4, 6.2 and 6.6, echoes the prevalence of didactic and uncritical learning styles that prevail in both Western and non-Western countries. Thessa's response is untypical of MA students. For example, in examining her professional role in the first module of the course (*Module AN1: Introducing Environmental Education*), Irena Popiolek (UK) writes:

> *Educationists have a responsibility to ensure that young children have opportunities to use their senses to develop their own relationship with the natural environment [which are] so precious as a driving force for developing the moral values and determination for action of today's environmentalists and conservationists.*

Irena notes the need for her primary school children to explore the way they relate to the natural world, and that this requires the development of sensory perception acquired in the 'real' world of nature as opposed to the virtual world that passes for educational context in many classrooms. Irena did not complete her MA studies with me, but I believe she recognised the need for children to establish a dialectical relationship with the biophysical world as a basis for their future action.

There are considerable challenges in writing MA Study Guides that are appropriate to the diversity of students' professional activities in formal and non-formal education, and that motivate them to respond to their local social and ecological concerns. Western understanding of the ecosocial crisis, of the 'nature' concept, of sustainable development and much else, may be irreconcilable with the ambitions, cultural norms and ecological imperatives of the students participating in the programme. I included Questions 1.3 and 1.4 (Appendix E) as an attempt to judge the effectiveness of the texts in these respects although, as I have noted in Chapter

3.4, the texts are not the sole means of communicating with student for frequent email exchanges complement the texts. For example, in response to:

> Question 1.3: Do you feel the learning processes are in any sense participatory or collaborative?

Sarita Kendall (Colombia) replied:

> *Certainly, the negotiation of the assignments and thesis is highly participatory involving students and course tutor – if this hadn't been so, I would have thought the course was too school-oriented.*

By the term 'school-oriented', Sarita is referring to the formal education bias in the examples and discussions in the Study Guides. As the course progressed, I did revise some of the texts in order to help students in non-formal education relate their reading to their non-formal educational contexts, e.g. in conservation. Even though many of those students working in conservation organisations and NGOs do have a formal education responsibilities in responding to requests from schools for environmental education 'inputs', in any future substantial revision of the course texts, it will be necessary to make a stronger connection between critical theory and the professional issues faced by non-formal educators.

Question 1.4 asked about the style of writing adopted in the course texts that I discussed in Chapter 3.3.2.

> Question 1.4: I would describe the texts as open in the sense they are written in a style that encourages you to reflect on the possibilities for social change in your professional context. Did you see the texts in this way?

Greg Taylor's answer was:

> *The module documents certainly caused much reflection and analysis, not only of personal possibilities, but also of various interpretations of set readings.*

Sarita Kendall's response to Question 1.4 was more revealing:

> *Very much so – and this is easily adapted to/acted on in my independent context, where there is constant room for change.*

As I discussed in Chapter 6 in connection with the 'critical encounters', I confirm that open texts are valuable in encouraging students' reflection about their professional circumstances and issues. I have examined Sarita's response to the course materials in some depth in Chapter 6.3 where I showed the value of negotiating an assignment with her so that she could benefit from the course processes in responding to her socio-cultural situation in Colombia. Another student, Ronnie Sibanda (Zimbabwe), also valued the flexibility of relating the course texts to his local circumstances:

> *Definitely, yes. Due to my distance from the university [Nottingham Trent], I took more examples from the social changes taking place on my area. The texts were open – I could get examples and relate them to my situation, e.g. indigenous knowledge.*

Peter Baldwin (Spain) was less inclined to be adventurous in adapting the materials to suit his own professional needs. His need to 'follow' the texts rather than use them creatively in applying learning to his own circumstances was unusual for a 'westernised' student. In answer to Question 1.4, he wrote:

> *I hope I did at times, and I did develop my own perspectives as a result of study and reflection. However, I felt the need to answer the questions, and was afraid to deviate too far from the texts.*

As regards the question of 'distance' that Ronnie Sibanda referred to above, email made it possible to exchange draft assignments, conduct tutorial exchanges and deal with administrative matters very satisfactorily (Chapter 3.3 and 3.4) from my office in Nottingham. Whilst geographical separation was not a significant issue for me or the students, I did ask the students about 'distance' as a metaphorical concept in relation to their learning as follows:

> Question 1.6: Apart from the obvious geographical distance between you and me, does the world 'distance' apply in any other way to this course? For example:
> - Is there a 'distance' between theory and practice?
> - Is there a 'distance' between aims and assessment?

In the early stages of the course, some mature students (like Peter Baldwin, above) were apprehensive about the academic standards required, and needed more guidance about the level of writing required. Peter Baldwin replied to Question 1.6 as follows:

> *The only time I was ever conscious of distance was at the beginning of the course when I was uncertain regarding the requirement and standards. Yes, there is inevitably a difference between theory and practice at times.*

Sarita Kendall's response to this question was more perceptive and it alerted me to the challenge of ensuring that theoretical matters in the course texts are connected with students' practice:

> *Distance between theory and practice, the rhetoric-reality gap, still exists in terms of the fact that I still lack practical strategies possibly due to my inexperience. This is something I must address if my MA is to be of any use; at least, I recognise this!*

I do see the 'rhetoric-reality gap' to which Sarita refers as a fundamental issue, but the tutorial structures I set up do lessen the tendency for this to happen. A 'top-down' driven course (Chapter 3.3) that had allowed little room for students to explore the potential of theory to inform their local practice might well force students to relate theory to some imaginary or contrived practice. The purpose of the open text in the MA course is to help students generate their own theory, albeit a critically inspired one, that is relevant to their professional and cultural contexts and thereby reduce the tendency for a 'rhetoric reality gap.

I encountered no adverse comments from students about the writing style and structure of the Study Guides. For example, in response to a the following question (Appendix E):

Question 1.1: Was the modular structure of the course well-suited to your style of study?

Ronnie Sibanda (Zimbabwe) answered:

> *It really was. Content was well structured. I was able to follow step-by-step the reading presented.*

Similarly, Clare Seeley (UK) wrote:

Yes, because it allowed me the flexibility to study in 'chunks' between various work and family commitments. Therefore, I could plan my work more effectively.

One student, Greg Taylor (Holland), who was unused to study, replied:

Yes, most certainly. It is possible that since it is so long since I last studied seriously, my style of study has been dictated by the course.

7.2.3 Question 2 (Chapter 3.6)

What critical insights does the research reveal about my role as an environmental educator/researcher in higher education? For example, to what extent am I able to empower my students to bring about social change through a socially critical approach to environmental education? Moreover, in what ways am I empowered in this process?

A key concern of a critical theory of education is the problematising of truth statements and the achievement of truth through rational and democratic discussion, free from any constraints and power relations that weigh on them (May, 1997: 37; Chapter 2.5 and 3.5). This democratic process of reaching consensus through what Habermas called the 'ideal speech situation' is what I have tried to accomplish with my students in the 'critical encounters' explored in Chapter 6. These encounters show that by reflecting critically on their practice and engaging in dialogue with me, they are involved in critical action research in attempting to improve their *praxis*. For example, my 'critical encounter' with Charles Paxton (Chapter 6.6) showed how he was motivated to use action research as a way of trying to improve his Japanese students' critical engagement with the HIT project. In Question 2.1 of the questionnaire (Appendix E), I asked students to reflect on whether the critical action research processes they had been encouraged to adopt had any impact on their *praxis*:

Question 2.1 In what ways did you find action research of value in developing your professional praxis? Try and relate your answer to reflection, insights and action stimulated by the course materials.

Sarita Kendall (Colombia) responded:

The general idea of feedback, reflection and change was highly relevant but I found literature on other methods (PAR) more useful. The emphasis on personal reflection was important in helping me to be more self-critical.

Sarita is aware that action research forces her engagement with the realities of her professional life. I believe my analysis in Chapter 6.3 of the exchanges that took place between us validates the strength of her action research stance towards her learning. Her 'insights' included adopting an appropriate methodology for researching her Amazonian communities' interests in finding ways of balancing traditional ways of looking after natural resources with externally imposed constraints on them about sustainable resource use. In a different educational context, Claire Seeley (UK) describes her understanding of action research before reflecting on its significance for her dissertation:

a. *AR legitimises/facilitates the asking of questions within the professional context when they may not usually be asked.*
b. *AR forces you to examine your own practice from new angles – bringing new insights into the purpose of environmental education.*

Before I carried out my dissertation, I had encountered cultural issues in school but had not considered how culture itself affects who we are and the decisions we make. AR allows the researcher to utilise previous experiences. AR research allowed me to consider culture in terms of relationships, emotions and family histories – all unquantifiable yet essentially important to those involved.

Claire's reference to 'culture' arose from her study of pupils' different cultural interpretations of nature in her multicultural primary school classes (*Dissertation: Cultural Identity, Environmental Perceptions and Behaviour: the relationship explored*). However, Claire, does not refer to the 'socially critical' aspects of 'critical' action research that Study Guides asks students to engage (Chapter 3.5). She does not make explicit reference to political, economic, or cultural forces that might constrain her *praxis* as a 'critical' educator. The 'critical' element is evident in Sarita's study (Chapter 6.4), in Linda Round's (Chapter 6.2), and in Charles Paxton's (Chapter 6.6). They recognise that the political and cultural contexts in which they operated do exert constraints on their professional activities, and they worked explicitly against these constraints to improve their *praxis*.

By working to surmount the constraining influences of local politics and culture, these students

may reach a state of mind where they can say they are empowered and this can occur at different levels. At one level, he or she may become empowered when they understand how change can come about, for example, by joining up with others to share common concerns. This happens in the *MA in Environmental Education* course when students meet for group tutorials, or to develop a dialogue with their critical friend, or call on me for an email tutorial. At this level the course aims to develop students' self-awareness and a belief in their capacity to effect change in their lives. The sharing of their beliefs with others who have similar concerns about environmental education and the environmental crisis is empowering. At a deeper level, they may have gained sufficient confidence to act in support of change such as involving their colleagues in professional development or redesigning their programmes to emphasise a more critical examination of environmental concerns. Their confidence at this level may be such that they begin to network with environmental and development organisations to enlarge their understanding of issues and their competence to act in a wider national or international context.

As an illustration of how I empower students, consider Helen Perkins' reading of postmodernity in Chapter 6.5. Here she argues that if Wildlife Trusts are to move away from the idea of institutionalised nature, they need to work together in the same direction and for the same purpose, for example, by listening to the members' views about nature and biodiversity instead of simply the views of the professionals. Consider, too, in a different context, Charles Paxton's writing (Chapter 6.6) for *Module AN5: Environmental Education in Action: Exploring Local Community Context* in which he is

> *pleased that the [MA] course is taking environmental education into my staff and classroom since this is the first time I have ever conducted professional long-term environmental education in my work place.*

The heart searching of Tim Cox (*Dissertation: The Wetlands Experience: engaging the visitor: July 1998*) empowered him to carry out a piece of research with visitors that showed that they were willing to make decisions to alter their lifestyles with the aim of achieving a positive benefit for the environment. Thus, he wrote:

It has taken the entire MA programme, not only to give me the confidence to explain the importance of my own work but also to recognise my own contribution as an individual to society. The final phase of the MA programme, the research dissertation, enabled me to explore the frameworks of my professional life and to clarify the validity of my present educational role.

The reading and engagement with professional issues which Gillian Traverse (UK) experienced on the course during the first year of the MA programme, encouraged her to write: (*Dissertation: Creating Environmental Education Through Reflexive Practice: an exploration of how children at The Wilderness Centre give meaning to ideas and experiences of nature:* July 1999):

I am aware that, in many areas of life, I live with paradox and conflict: exploring these and accepting them, and inherent consistencies at an intellectual level, has been an important process in helping me to enter into a readiness to explore and challenge ideas and perspectives new to me.

The questionnaire (Appendix E) asked students whether the course had empowered them in the ways described above:

Question 2.2: In what ways have the course process 'empowered' you as an environmental educator to address environment and development issues that are meaningful in your own cultural context?

Sarita's response was:

The research module [Module AN5: see Fig 3.1] and the dissertation were crucial in this sense because I became much more sensitive to local cultural perceptions of nature, development etc. Also, I feel more confident about arguing for this approach within the Foundation [her conservation organisation – see Chapter 6.4] and have found that some of the students/researchers agree with me.

Here action research, principally though Module AN5 and the dissertation, sensitised her to cultural aspects of her work, and gave her confidence within her organisation to argue that community involvement was essential in conservation work – what she called 'participatory action research' (PAR: see her response to Question 2.1, above, and Chapter 3.5).

How am I empowered in the process of providing learning opportunities that empower my students? The first point to make is that separating my empowerment from that of my students

is difficult. How could it not be? In a research venture claiming that learning is a dialectical process between us, their success and failures are also mine. Unlike a top down course, where I might have little insight into the professional issues arising from political and cultural considerations, I might find it easy to measure my professional gain, my empowerment as an environmental educator and researcher. The *MA in Environmental Education* course is not like this since it is a 'bottom up', tutor- and student-centred programme where the authenticity of the students' professional context is made clearly visible to me by establishing dialectical teaching and learning processes (Chapters 3 and 6). In running the course as a major contribution to my teaching and learning, I have developed confidence in my ability to engage students at a personal level with their professional issues. This personal experience empowers me to consider how best to tutor students joining the programme whatever their cultural context.

7.2.4 Question 3 (Chapter 4.7)

> **What are the implications of the contradictions surrounding the concept of sustainable development for the content, pedagogy and evaluation of the MA course?**

In Chapter 1.5, 1 first drew attention to 'sustainability' as a significant focus for discussing an educational response to the ecosocial crisis, linking it especially to the idea of development (Chapter 4.3). I noted that the inclusion of the sustainability concept in the sustainable development discourse enables me to distinguish between the 'strong' and 'weak' forms of sustainable development. That is, the economic imperatives of weak sustainable development tend to crowd out interest in the wider notion of the ethics and politics of strong sustainable development that need to be addressed through educational processes. Thus, despite international calls for education to respond to concerns about sustaining social and ecological systems into the future, the transformation of the sustainability concept into definitions and proposals for environmental education (EE) remains problematic. In this research account, I have avoided the temptation to substitute 'environmental education' with 'education for sustainability' (EfS), believing that this transformation obscures the obvious connection between individual's behaviour and *their* environment. That is not to say that I have not

embraced principles of 'education for sustainability' for I addressed them in Chapters 1.5 and 3.5 in relation to a socially critical approach to education.

The MA students encounter the principles of EfS throughout the course, with a particular focus in *Module AN7/8: World Politics and the Global Environment/Educational Implications.* For example, in her module assignment, Sarita Kendall (Colombia) and Susan Tyzak are both concerned with sustainability issues. Sarita makes two observations: the first is how the percolation of the language of development has come to dictate the daily affairs of local Indian communities, a process that has become increasingly apparent during the last decade. The second is the need to reconcile economic development with international calls for sustainable development aimed at protecting natural resources in the interests of biodiversity. Sarita finds that these external pressures are causing indigenous people to make their own demands for control over their lands (Chapter 6.4). Susan's main concern is with the effects on 'undeveloped countries of the global reach of Western culture and models of development. She argues that the logic driving development is economic colonisation, not, as is usually claimed, an altruistic 'improvement' of the quality of lives in 'underdeveloped' countries. She sees commercialisation transacted through Transnational Corporations (TNCs) as the principal source of global environment and development problems. She uses the biological metaphor of the 'niche' to emphasise how TNCs adapt to changing market and labour opportunities and to operate in Third World sites where environmental regulations are less likely to impede their productive activities (Chapter 4.4). Can education help to resist the activities of TNCs that often do great harm to people and to their environments? Her response is that only when education is willing to challenge the capitalist values that drive the global commercial machinery.

Sarita and Susan's concern with challenging of the social and political origins of deteriorating relations between humanity and the biophysical world, addresses the sustainability issue within environmental education. In the Questionnaire (Appendix E), I asked students to refer to ways sustainability informed their learning:

> Question 1.7: The emphasis of the course is on political economy in the belief that political and economic structures constrain humanity from living ecologically sustainable

lives. How do you respond to this emphasis? What might you have wished the emphasis to be?

Sarita's response was:

> *The emphasis was unexpected for me, but positive – I had thought the course would be more 'practical' with 'recipes' for my context. The political economy angle is v. appropriate – perhaps this should be more explicit in the course leaflet.*

Yes, I do think I should make more explicit the political economy approach, though I have no evidence that this would make the course more or less attractive to potential students. As the critical encounter in Chapter 6.4, shows, Sarita appears comfortable with exploring political economy issues as they related to her context. This was not a common response, and Greg Taylor's (Holland) was far more cautious:

> *Whilst I agree with the emphasis totally and accept that it is necessary to constructive environmental attitudes, it is far from the context of (particularly) primary education and may be a diversion to educators of a reactionary nature.*

This comment is confirmed by my evaluation of the critical encounter with Greg in Chapter 6.3 where he found some resistance among his colleagues towards a curriculum that is socially critical. In some cases, students confuse the political aspects of a socially critical curriculum with 'party' politics. For example, Ronnie Sibanda's reply to this question revealed his sensitivity to Zimbabwe's ruling political structures, rather than to possibilities for social change within these structures:

> *I ... maintain that it is political and economic structures that ... influence our lifestyles. If one place is ruled by a tyrant, then the economy dwindles and poverty is created.*

The above replies to Question 3 reveal a difficulty for me in helping students to develop their *praxis* through the socially critical principles underpinning 'education for sustainability'. However, as I argued in Chapter 3.5, the politicisation of environmental education is not an easy task as shown by the responses to these questions, and by the critical encounters in Chapters 6.2 and 6.3.

7.2.5 Question 4 (Chapter 4.7)

> **How does the students' critical engagement with the difficult theoretical issues in the MA course advance their professionalism in the field of environmental education?**

As Chapters 1.3, 2.5, 3.5 show, the learning processes embodied in the *MA in Environmental Education* course do not simply engage students with professional issues such as curriculum design, policy-making, and teaching and learning styles, although these are a particular focus in Modules AN1, AN4 and AN8, and in the Dissertation. Concerned, as the MA is, with complex matters directly related to the survival of life on Earth, it would be irresponsible of me *not* to locate the students' learning and my research within wider global cultural and economic contexts. Indeed, a critical theory of education insists that learning is situated within cultural and ecological constructs (Chapter 3.5). Moreover, it also seeks transformations in the social order so that knowledge is produced that is historical and structural, judged by its degree of historical situatedness and its ability to produce *praxis* or action (Denzin & Lincoln, 1998: 187). Critical theory focuses on structural variables in human relationships, particularly those of class and power in an effort to examine sources of social domination and repression. For these reasons, environmental issues tend to be one of the most complex social issues of our time, with myriad social, ecological, economic and political dimensions as the six concepts in Chapter 4 illustrate. Yet, repeatedly, as a way out of the ecosocial crisis linear, one-dimensional solutions concerning technical expertise rather than a consideration of lifestyles and politics are offered as the principal way of resolving environmental problem,

Given the assumptions of ecological modernisation (Chapter 1.2), it is hardly surprising, then, that people put forward simplistic solutions to environmental harms such as litter and the waste of post-consumer excesses. As Lousley (1999: 299) points out, while such habits "may prolong the life of a few landfills, neither action contributes to altering the unsustainable economy of production and consumption which structures late-industrial society". The moralised language of simple green solutions to the ecosocial crisis (e.g. Have you done your bit?) mystifies the causes and agents of environmental degradation, deflects critique and

questioning, and deceptively universalises the different positions individuals have in relation to the distribution of resources, risks, responsibilities and decision-making power (*ibid*)[100].

In this account of my research, centred on the *MA in Environmental Education* course, I have been concerned, *not* to decontextualise environmental issues so that they become exempt from critical examination by environmental discourses located in particular historical and political contexts. Indeed, the critical encounters in Chapter 6 reveal just how students' interpretations of the MA texts, and their 'ecologism' (Chapter 4.5), are related to these contexts, providing a learning experience that is substantially under-valued within formal education, popular media and even academic disciplines (Chapters 1.3 and 1.6)[101]. Thus, there is every reason why I encourage MA students to deconstruct the contested concepts that I examine in Chapter 4 and to explore the relevance of these concepts to their particular professional contexts. Whilst the Questionnaire (Appendix E) does not ask students to comment specifically on the concepts I discussed in Chapter 4, the following questions are an attempt to assess how they responded to the conceptual complexities that are an integral part of their programme of studies:

> Question 2.4: To what extent has the dissertation
> (a) been a means of bringing to bear on the research question(s) the course content and processes;
> (b) been rewarding in intellectual and professional terms.

Sarita Kendall responded as follows:

> *(a) Course process was crucial in defining the overall approach to EE (including the dissertation) and in developing research methods; and in developing knowledge of the subject I chose.*
> (b) *Extremely rewarding. Will lead to more work of this kind within and outside the Foundation.*

Here Sarita is referring to her developing understanding of how to accommodate local knowledge within her conservation work. In Chapter 6.4, I drew attention to cultural issues

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[100] Luke (1997: 134) summarises recycling as "the symbolic and substantive means to rationalise resource use and cloak consumerism in the appearance of ecological activism".

[101] Indeed, one could argue that the existence of environmental clubs and societies in formal education is a political statement, aimed at criticising the lack of attention to environmental issues and opportunities within formal education.

relating to the impact of knowledge concerning globalisation and development. In trying to assess the intellectual demands on the MA students, I asked:

> Question 3.3: Most students find the course intellectually demanding. Do you and, if so, in what ways?

Sarita Kendall's response was

> *Yes, especially in the challenge of developing links/relating issues and ideas to one another and to practice. Also the variety of material, theory and approaches requiring further delving according to one's interests.*

Sarita appears to find the flexibility of the open nature of the text enabling her to adapt concepts to her cultural context and professional needs. In response to Question 3.3, Greg Taylor replied:

> *Being halfway through the dissertation, I am using all of the course content and find it all pertinent. It is rewarding in both ways but very demanding intellectually, and in terms of time as a full-time teacher.*

The major question for me is how to stimulate the motivation of mature students (as most MA students are) to undertake a critical examination of unfamiliar areas of knowledge. While most students persevere in incorporating difficult conceptual areas in their professional work, some find the task rather daunting. For example, Peter Baldwin's response to Question 3.3:

> *I found the course very demanding intellectually. Sometimes, I had to read to the texts several times, e.g. Dobson, before I could understand the point being made. At times, it was like learning a new language.*

Ronnie Sibanda's answer to this question was similar:

> *This course is demanding. I did not formally have a background in studying EE at MA. It was an uphill process. I am glad that my lecturer was patient with me, because I was groomed properly, not spoilt with marks/points I did not deserve.*

I had hoped that the 'critical friend' to whom students should refer for moral and intellectual support would be helpful in providing students with a listening, if not a critical, ear for the difficult times in students' studies (Chapter 3.5). I have referred to Charles Paxton's

supportive critical friend in Chapter 6.6. In order to assess the significance of the critical friend, I asked:

> Question 4.7: A 'critical friend' can be an important combination of comfort and critique. How important was she or he to you?

Sarita responded:

> *I did not find a critical friend who could relate to all aspects of the course and have the time to get sufficiently deeply into the issues. My husband, Tim, was the nearest thing to a critical friend, and we had v. useful discussions on research methods, etc. He also read some of my writing, though it was outside his subject area, and I listened to my ups and downs – very important!*

Similarly, Greg Taylor replied:

> Very important – she has discussed, guided and encouraged me throughout even though she is not involved in EE in any way. She has also enjoyed doing it, I think.

I do not encourage students to use family relations as critical friends, but sometimes distance education students can find no other person to whom they can relate about their studies. Marlene Burns, Greg Taylor's critical friend, was as a very appropriate person for him. For example, in response to Greg's assessment to Module AN7/8 Part 2 (Appendix C), she wrote the following (rather uncritical) comments (26 May 1999):

> ***What is an appropriate educational response to the ecosocial crisis?***
> *Overall, I found this essay to be a confident piece of work in which Greg displays, not only his awareness of current environmental opinions, but also his ability to promote his own professional situation and consequent plan of action. As his other essays, Greg uses his Abstract well to introduce his reader to the elements of his essay. ... Quickly establishing the importance of environmental education, Greg moves to cite Rensburg's (1994) four different orientations of environmental education, in particular. Using this discussion to conclude the first section of his essay, Greg also contends that such orientations can be seen to form the basis 'for the potential to produce real, relevant environmental solutions alongside the possibility of complementary social change'. ... Well thought out and produced, I felt that in this essay Greg does offer a realist plan of action from which an appropriate educational response to the ecosocial crisis could be fostered.*

The above responses and references to the critical encounters in Chapter 6 indicate the variability in students' ability to relate theoretical principles to their practice. Although it was rare for a student not to see the relevance of theory to their practice, since the course 'front-loaded' theory (Modules AN1 to AN3), some students could not see the relevance of this theory until they were more deeply involved in considering their practice in Modules AN4 - 6, and in the dissertation. Firmly grounded in theory and mediated to students in a wide range of contexts, this MA course has required me to be rigorous in selecting students for the course. I have rejected those whom I judge cannot cope with the theoretical issues if their application documents do not show sufficient evidence of their academic background, writing skills, access to library resources, professional context and so on. I advise some students to leave the course when their engagement with theoretical issues reveals a consistent weakness.

7.3 Insights and contributions

Through the critical encounters in Chapter 6 and the questionnaire responses in this chapter, I believe I provide effective evidence enabling me to present some insights in response to the main research question, and to identify ways in which the MA course has contributed to the professionalism of the students and myself. The main research question asks:

> **To what extent can I establish a sound theoretical basis for realising socio-cultural and ecological sustainability through a Masters course in environmental education?**

The following six insights inform this question:

1. The *MA in Environmental Education* course encourages students to become key agents in their own learning through course materials that stimulate their reflection and action about the issues that are relevant to their particular socio-political contexts. I believe the MA course achieves this by providing a learning framework that is appropriate for distance education students.
2. By establishing a dialogical and individualised tutor-student learning framework, and presenting Study Guides in an 'open' text format, it is possible to motivate students and to give them confidence in translating the course processes and content into programmes that have relevance to their professional contexts.

3. By using critical action research to consider fundamental ways of thinking about their own motivations and worldviews, it is possible for students to apply a critical theory of environmental education in improving their *praxis*, and to examine critically the underlying political and economic forces responsible for ecological and social harms in their communities.
4. Students are able to deconstruct and apply difficult philosophical and theoretical issues to their different socio-cultural ecological contexts, but only if they are supported with consistent tutorial guidance and texts that problematise these issues.
5. I have enhanced my *praxis* as tutor for the *MA in Environmental Education* course by being dialectically involved with my students' *praxis* in their differing professional contexts.
6. Critical realism offers me a philosophical perspective for collaborative and mutually enhancing learning with my students, and that recognises the significance of establishing dialectical relations with the biophysical world.

The main research question above begins with the words 'to what extent can I ...', calling for some sort of grade or level of the extent to which 'a sound theoretical basis' has been validated by the research. In a qualitative and reflexive study, this would be quite impossible to assess. What I am confident in claiming is that the above findings, based on supporting evidence, go some way towards showing how a sound theoretical basis for realising socio-cultural and ecological sustainability through education can come about. My research shows that it is possible for the MA students to transform their teaching through action research by becoming critical theorists, articulating their intentions, testing their assumptions, and finding connections in practice.

Of course, it is possible that students engaging with the course processes and 'content' are merely confirming principles written into the course as prescriptions rather than as something to be problematised within their individual socio-cultural contexts. I believe I have shown that the course does not operate in this way, for it engages students critically with issues and opportunities provided by their particular socio-cultural contexts, and that the course does make a positive contribution to their *praxis* as critical environmental educators. The course

democratises environmental issues through students' sharing with me the professional issues that arise in their socio-cultural contexts. In this way, I try to bring the students to a point where they take their leaning into their own hands to enable them to become empowered, not in a context-free abstract philosophical void, but empowerment *within* nature and *within* their community. In acknowledging the success of the course in these ways, I am also claiming a degree of 'success' in enhancing my own *praxis*.

My 'gain' as an environmental educator and researcher, following the reflexive research processes of this research account, goes beyond the insights claimed above. There are personal, institutional and national/international gains as well. As for personal gain, I have derived significant satisfaction from researching the operational and academic processes of the MA course and being involved socially and professionally with my students. For the most part, this has been a personal undertaking that has consumed a greater part of my teaching and research time during the past six years. In some respects, I regard the research as the 'high point' of a lifelong enthusiasm for environmental matters while following, for the most part, a career invested in physics education. I revealed how the research revealed links with my rural past and overseas teaching in Chapter 1.7. As for institutional gain, there is the Faculty context for this and the University context. I do believe that, despite the official Faculty view that the MA course is a marginal educational endeavour, my research in connection with the MA course has enhanced the Faculty's academic work. Moreover, as an 'active researcher', I have contributed to the two Research Assessment Exercises through the publications I have produced in connection with environmental education (see References). Through their attendance at research seminars I have given, colleagues do recognise the research potential of environmental education. As regards the University context, colleagues across the University are aware of my active research interest in education for sustainability through my membership of the 'Greening the University' curriculum team.

As for the wider national and international context, I believe my research findings are of value to other researchers and teachers of environmental education, especially those researching pedagogy and distance education and those interested in the potential of critical theory to

progress the theoretical underpinnings of environmental education. For example, Jucker (July 2000) considers the MA course as making a significant contribution to education because[102]:

> [It] challenges our current mode of thinking (about environment, education, society, values) in very radical ways, and contradicts the lifestyle that is advocated through mainstream media, schools, HE institutions, political bodies, and not least, corporate capitalism.

7.4 Validity and generalisability

I drew attention in Chapter 5.3 to issues concerning validity and generalisability in qualitative research, and I return to these issues here, briefly. In Chapter 2.6, I argued that critical action research and critical ethnography best represented the methodological approach for my research. I regard this kind of research with my students as 'field work' in that I am the only researcher involved, reflexively, in trying to understand how students use the course materials to develop their *praxis* in their particular socio-cultural contexts. This reflexive orientation allows for the expansion of knowledge through critical reflections aimed at confronting traditional views of environmental education teaching and research. However, since I am the only researcher and tutor involved with my students, the question arises, why should anyone believe my claims? Since it would be questionable whether someone else could replicate my particular involvement with students over several years, how can anyone else corroborate my findings?

As I noted in Chapter 5.3, the question of validity in qualitative research of the kind I have carried out is a long-standing one for researchers. My case for not testing validity via the usual processes of triangulation is as follows. Firstly, since I have shown that I am an active participant in the professional lives of my students, then I no longer see myself as in any way 'infecting' the research findings. Thus, the question of value-neutrality disappears since I have imprinted my values on the research findings by choice in the adoption of a reflexive approach to the research account. Secondly, this reflexive reporting involving the recording of extracts from my ongoing communication with students provides insights into the dialogical processes I

[102] Jucker, Rolf: private communication July 25, 2000.

have engaged in with them. In this way, I have been able to corroborate these insights with those closest to the social events or contexts under research. I promote this as a form of triangulation for it enables me to check data with my respondents – the students. Therefore, the 'truth' of my insights is contained within the insights listed above, and that I stand by. They are *meaningful* to me in the context of the teaching and learning processes embedded in the MA course, and they are *truthful* in that they represent a shared interpretation of the dialogical learning processes on which the course is based. Indeed, Habermas' ideal speech situation, to which I have referred in Chapters 1.5, 2.5 and 3.5, provides an approach to 'truth' grounded in these linguistic interactions. Validity, then, is dependent upon what Habermas calls 'communicative competence' that legitimates the products of educational research ultimately through dialogue, interrogating statements for their *meaningfulness* and *truthfulness* (Chapter 6). This form of internal validity is opposed to traditional researchers' arguments for 'value neutrality', and who condemn committed research of the kind in which I have engaged (Siraj-Blatchford & Siraj-Blatchford, 1997). Thus, the obvious drawback of the subjectivity and reflexivity of the research process is the difficulty of generalising about the findings and of validating any claims I make. Although I am conscious that the research has involved me at a personal level, this subjectivity does neglect the potential of the findings for informing the *praxis* of other environmental educators and researchers.

7.5 Final reflections

I am aware that, in choosing to inform my educational practice by active involvement in the professional lives of my students, my research represents a distinct form of academic scholarship that Neuman (1993) considers comprises both *activity* and *quality*. I claim to have been active through the reflexive engagement with my students on the MA course. I claim quality in three ways: firstly, in terms of the evidence I have provided for my critical commentary on a breadth of reading; secondly, in terms of the insights gained about my own *praxis* and that of my students through critical encounters with them; and, thirdly, in terms of the critical contribution I offer to the academic community. Yet, these 'fruits' of scholarship arise from a research process that sits outside and in opposition to those processes of educational research endorsed by government that seek experimental, scientific and

quantitative research methods (Bassey, 1995). Such abstract research methods do not appear to help politicians and others accept the reality of the ecosocial crisis. Neither do they seem to help in the much-needed transformation of education that continues to operate as if an assured future for humankind depends on encouraging more people to consume more of the planet's resources while countless creatures continue to be obliterated in the name of progress; and large numbers of people continue to exist in abject poverty people. In contrast, my research has sought to evaluate a critical theory of education in order for me to facilitate critical reflection about how individuals and communities are able to develop more sustainable ways of relating to the biophysical world.

In adopting a reflexivity as a way of 'coming to know' how to mediate a critical theory of environmental education to a diverse collection of mature students in different socio-cultural contexts, I acknowledge that my research is more speculative than is comfortable for those seeking hard and fast conclusions to use in establishing educational strategies with guaranteed educational outcomes. Of course, such an enterprise means accepting the uncertainties and limitations of personal and collective experiences and reflections, but this is better than the "abstracted empiricism" (Siraj-Blatchford & Siraj-Blatchford, 1997: 243) of policy science. 'Scholarship' represents for me 'a way of life' for it means accepting that we reform and form ourselves as we live and work, as Wright-Mills (1978) recognised in the quotation in the heading of this chapter. Scholarship via the critical research tradition enables me to claim insights that would not be possible through policy science for it derives 'truth' from democratic processes based on dialogue. By collaborating with students, I have drawn on knowledge that is located in their communities (Williams, 1996a: 38). Indeed, anybody involved in cross-cultural education should be prepared to analyse the socio-cultural conditions of the respective societies engaged in these educational transactions, as I have argued in Chapter 3.3, and to use the experience reflexively in generating their research findings. In this way, research does not confirm expectations but opens up possibilities for new forms of knowledge production that may have the potential to illuminate pathways to a sustainable future.

This research account was inspired by a deeply felt conviction that humanity's impact on the biophysical world, including human social systems, warrants serious attention through educational processes. As ecosocial problems intensify rather than diminish, it is necessary to develop new ways of thinking and acting in order to deal with the ecosocial crisis. I believe my research shows that a critical theory of environmental education offers the potential for addressing the ecosocial crisis, and I side with Dickens (1996) and other critical realists in believing that the ecosocial crisis arises because of the failure to understand the dialectical relations between humans and the biophysical world. Such a view is opposed to Pepper's (1993: xi) that "we should protect nature for its intrinsic worth ", and O'Neill's (1993: 3, my italics) view that nature should be reconceptualised in the light of "a set of objective goods a person might *possess*". Both positions assume a separation of the self and the environment that persists within the various discourses of environmentalism, and assumptions of environmental education, often epitomized, for example, as 'saving the wilderness' (Payne, 1999: 23). Instead, critical realism recognises that the biophysical world is a concrete reality, *of which humans are a part*, and that we can come to know our relations to it, *and thus to ourselves*, through dialectical processes. However, this 'nature' is not a static entity since the incursions of humans continue to change it and us radically. It is best if we recognise this and attempt to understand our relations to the biophysical world if we want to find ways of sustaining life on Earth.

The doom-laden prophesies of the environmentally aware can be counter-productive and engender despair, apathy and a 'live now, pay later' mentality. However, it is reassuring for me to see the students I tutor on the *MA in Environmental Education* course critically reflecting on their practice in order to find ways of bringing a sense of hope to the individuals and communities for whom they are responsible. They achieve this not by bland reassurances to be more optimistic or by hiding the obvious environmental problems, but by facing up to the social structures and ideologies that fail to recognise that the biophysical world of which they are part, has value beyond the instrumental. My research has not shied away from the task of getting this message across. The philosophical and emotional content of the message cannot take the economic form that the prevailing political agenda emphasises, but the concerns of environmental educators must become political if the things people care about in their

communities are to be given a place on this agenda. My experience leads me to believe that environmental educators are able to evaluate the complex social causes of the ecosocial crisis, and can bring about social change in the interest of a more harmonious relationship with the biophysical world, not just for their generation but for those who inherit what the current generation has made of our world.

> Neither the secularization of worldviews nor the structural differentiation of society has unavoidable pathological side effects *per se*. It is not the differentiation and independent development of cultural value spheres that lead to the cultural impoverishment of everyday communicative practice, but an elitist splitting-off of expert cultures from contexts of communicative action in daily life. It is not the uncoupling of media-steered subsystems and of their organizational forms from the lifeworld that leads to the one-sided rationalization or reification of everyday communicative practice, but only the penetration of forms of economic and administrative rationality into areas of action that resist being converted over to the media of money and power because they are specialized in cultural transmission, social integration, and child rearing, and remain dependent on mutual understanding as a mechanism for coordinating action.
>
> (Habermas, J. (1987) *Theory of Communicative Action*, vol 2, Boston: Beacon Press, p330)

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APPENDIX A

SUMMARY OF MODULE SPECIFICATIONS

MODULE AN1 Introducing Environmental Education: Impediments and Possibilities

This module emphasises the need for you to explore your own perceptions of the environment, and challenges you to analyse critically the conventional wisdom of our society, politically, socially, economically and ecologically. You will need to reflect on the development of the environmental movement, to make projections about the future significance of current environmental concerns and current attempts to relate theories of education to environmental education.

MODULE AN2 Perspectives on the Environment: Differing Ideologies and Utopias

This module helps you to articulate your own environmental ethic in terms of underlying socio-political issues and ideologies such as anthropocentrism, technocentrism and ecocentrism. It helps you to explore your understanding of the concept of nature. The emphasis is on relating clusters of particular environmental ideas and to point out the contribution of, ambiguities in, and potential for alliance between these ideas

MODULE AN3 Enquiring into the Environment: What Knowledge? For What Purposes?

This module considers the nature and purpose of social enquiry and our frameworks of meaning (construction of knowledge). It also considers the interface between these and the contemporary environmental issues of modernity and postmodernity. The intention is to challenge the way society is currently organised and to critically examine how this influences the future development of environmental education.

MODULE AN4 Realising the Potential of Environmental Education

This module draws together and builds on the previous modules in consideration of environmental education in formal and non-formal contexts. The approach will offer you the opportunity to create a personal synthesis regarding environmental education and to produce an action plan for your organisation (imaginary or real) to improve the way it promotes and manages its environmental education activities (or anticipated activities).

MODULE AN5 Environmental Education in Action: Exploring Local Community Contexts

This module enables you to carry out a small-scale research activity which integrates the three strands, enquiry, education and environment. The focus is on using methods of enquiry, particularly the idea of action research, in a professional context.

MODULE AN6 Review of Professional Progress in Environmental Education

This module provides a forum for you to present an overview of your experiences of the MA in Environmental Education in terms of your understanding of the three integrating strands - Environment, Enquiry and Education - and shape an action plan for further in-depth study via the Dissertation.

MODULES AN7/8 Parts I and II
World Politics and the Global Environment; and
World Politics and the Global Environment - Educational Considerations

This module emphasises the importance of the global perspective, of globalisation and the need for you to explore and articulate your own value positions through critically reviewing selected literature that offers perspectives from a variety of international standpoints.

MODULES 9 - 12 Dissertation

The content of the Dissertation is clearly determined by the area of study that interests you. This extended piece of writing between 12,000 to 15,000 words is designed to capture your professional contribution to the future of environmental education.

APPENDIX B

EXAMPLE NEWSLETTER

Earth Link

MA in Environmental Education
by Distance Education
Faculty of Education

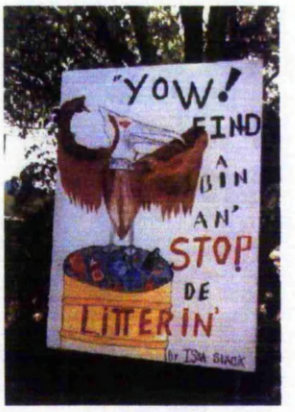
Issue 5 Spring 99

EDITORIAL

Firstly, welcome to those of you who have joined this MA course during September/October last year. Since many of you are too far away from Nottingham to visit us, we are unlikely to meet all of you personally. However, if you could manage to join us at least once a year for one of our Saturday 'day schools', you will find the occasion well worthwhile. As one of the students wrote after attending a day school: "It was very helpful to see where the course is heading ... [and] ... it was good to meet some of the other students, too, and re-read their autobiographies. It feels a bit isolated just working from home ...".

In this newsletter I draw attention to a few items that matter to newcomers to the MA course. The first note is about the importance of the ecological autobiography which is part of the first module that some of you will have already submitted for assessment. Secondly, there are some further notes on the optional Independent Study Module. Thirdly, I urge you to consult relevant environmental education and other educational journals. We also include names of some of the students, newcomers and finishers who have wide environmental interests and are widely dispersed from the Caribbean to the UK, USA to East Africa.

Malcolm Plant and Natalie Sebaransingh



Sign on Caribbean Island

ECOLOGICAL AUTOBIOGRAPHY

Those of you who joined the MA in Autumn 1999 will soon be receiving a copy of the collected autobiographies which you contributed to as part of the assessment for Module AN1 Environmental Education: Impediments and Possibilities. The autobiographies and the email connection we have established should encourage you to make contact with another member of your group especially someone from another country.

Helen Barlow (West Midlands, UK who received her MA last Summer), sent a copy of her autobiography to Ruth Wilson who wrote an article called 'Ecological Autobiography' in Environmental Education Research 1(3), 1995. Helen was really pleased to receive an e-mail from Ruth to say how delighted she was that Helen had contacted her and she updated Helen on her current research areas.

Wilson's paper was not listed in the Module AN1 Study Pack. If you are interested in Ruth's work, please consult the journal *Environmental Education Research.*

INDEPENDENT STUDY MODULE

Not many people opt to replace Module AN3: What Knowledge? For What Purposes? with the optional Independent Study Module (ISM). If you are interested in the ISM you will need to submit for agreement a proposal which fulfils the criteria we have laid down for this ISM. For example, Irena Popiolek who teaches in a Primary School in Maidstone (UK) chose to base her ISM on a piece of research critically analysing the reactions of her class to 'Magic Spots' (Van Matre, 1979: 40).

Entitled "The Sound of Silence", her research for this ISM examined children's reactions when sitting in solitude in the natural environment. Irena wanted to know "How valuable are such experiences to the environmental education of the child?" For example, Irena writes: "Ali's thoughts were fascinating. She observed carefully and described many insects and sounds but was mostly concerned with the futility of Nature".

BOOKS AND JOURNALS

We send you a list of the books needed for each module in advance of receiving the modules. Please member that you are expected to read widely, not just the specified reading, and to show evidence for this breadth of reading in the formal assessments. The following books are some recent publications to add to this reading.

Remember, if you are on line, many of these can be ordered often at a discount from:
http://amazon.com

BOOKS

John Huckle is External Examiner for this MA.

Huckle, J. & Sterling, S. (Eds) (1996) *Education for Sustainability*, London: Earthscan Publications Ltd

A focus on action research in practice

McNiff, J. , Lomax, P. & Whitehead, J. (1996) *You and Your Action Research Project*, London: Hyde Publications/Routledge

For those of you inspired by Module AN2! Dickens, P. 1996) *Reconstructing nature: alienation, emancipation and the division of labour*, London and New York: Routledge

From deep ecology to technocentricism - especially relevant for Module AN3.

Macauley, D. (Ed) (1996) *Minding Nature: the philosophers of ecology*, London: The Guilford Press

My own book, published December 1998.

Plant, M. (1998) *Education for the Environment: stimulating practice*, Dereham: Peter Francis Publishers

INTERNATIONAL JOURNALS:

Environmental Education Research published by Carfax, ISSN 1350-4622

Environmental Education published by the National Association of Environmental Education (UK), ISSN 0 309 8451

Education Action Research published by CARN (Collaborative Action Research Network), ISSN 0965-0792

The Development Education Journal published by the Development Education Association, 29-31 Cowper Street, London, EC2A 4AP.

Both the Australian Association for Environmental Education and the Environmental Education Association of Southern Africa publish their own journals - please ask your local college or public library for further details.

TINA SAYS

I start a new job in the University of Nottingham on January 11, again working with distance education students but this time in the School of Nursing. I shall miss working with you all as it's been a very satisfying and enjoyable job. It goes without saying that I shall miss working with Malcolm but I intend to keep in touch, to find out how you are all doing! Best wishes and keep up the good work.

OUR OVERSEAS STUDENTS

Although MA students' locations may sound attractive, they often work closely with people at the sharp end of pressing environmental and social problems. For example:

- **Sarita Kendall** is working in Columbia on a project concerning the conservation of freshwater dolphins in the Amazon and Orinoco river systems and this involves her in EE with local communities and school children. She writes books in Spanish about Amazon wildlife (see photo at the bottom of the page) and has visited us in Nottingham.
- **Roger Ho** from Hong Kong has just been awarded his MA based on researching the role of field studies. His study examined how a socially critical approach to EE could be realised in China's educational system.
- **Alison Glover also gained her MA recently after** teaching in a secondary school in Botswana where she researched the impact of tourism on local environment-development issues.
- **Ronnie Sibanda** is teaching in Mogwase Middle School, Rustenberg SA, not far from the Pilanesberg Wildlife Park, an invaluable resource for his EE teaching and research.
- **Nathaniel arap Chumo** works for the National Environment Secretariat, Nairobi, and has been concerned about environment-development issues since being a herdsboy in the Rift Valley.
- **Karen Paul** teaches science in a college in Trinidad and, by the way, I was able to meet with her for a tutorial while on holiday in the Caribbean, December 1998.
- **Charles Paxton** teaches English and other subjects at the University in Tokyo. As you might expect, he's involved with whale conservation!
- **Greg Taylor** teaches in Holland in a British-curriculum school and is interested in the possibilities of sustained development within a healthy environment.

NEW DEVELOPMENTS

We are preparing new Masters level modules in Environmental Management and Educational Management that will be offered within a new structure for our postgraduate distance education programmes. I will keep you informed of these developments.

APPENDIX C

SUMMARY OF ASSESSMENT SPECIFICATIONS

Module AN1: Introducing Environmental Education

The Module Assessment involves **four** elements:

1. Keeping a Research Diary and the evaluation of set reading in this module.
For each item of set reading you have been asked to complete the following in your Diary:

- a summary of the main arguments presented;
- a critical review and evaluation of the main arguments presented.

You have also been invited to do the same for any additional reading undertaken (please state author, publication date, title and publisher).

2. Critical reflection on the Student Activities and your reading.
Both of the above are ongoing activities throughout this module and will inform (3) and (4) below: (You are not asked to submit elements 1 and 2 for assessment. However, if you would like to photocopy entries from your Research Diary and send to us, by fax or post, we shall be pleased to provide feedback).

3. Having completed the Student Activities and your reading, you should now reflect critically on all your learning and;
(a) consider and explain how, if at all, the activities and reading have influenced your understanding of **yourself** in relation to both environment-development issues and environmental education as originally represented in your Autobiographical Account;
(b) write a **personal action plan** which identifies any issues or concerns highlighted in the Student Activities and your reading which you feel need more consideration. Explain why this is so and how you intend to begin to address them.
(a and b should be written up in your Research Diary).

4. A Seminar Paper and presentation.
The above elements should then be summarised as a Seminar Paper (4 to 5 pages). The main emphasis of the Seminar Paper should be the consideration of how the Student Activities and your reading has affected your own understanding of environment-development issues and environmental education as represented in your Autobiographical Account. It should consider your own value-position:

- at the start of the programme;
- 'where you are now' having completed the first module;
- and 'where you go' from here.

Criteria for assessment:

- consistent and open-minded recording of views and opinions;
- critical reflective evaluation of the views and opinions recorded and of any insights gained;
- critical evaluation of your own understanding at the start of the programme (your Autobiographical Account) in the light of the Student Activities and your reading;
- relating this developing understanding to your own professional development;
- ability to communicate to your peers and tutors your personal engagement with the set reading; and with a range of opinion regarding environment- development issues, as well as developing understanding of such issues.

Module AN2: Perspectives on the Environment: Differing Ideologies and Utopias

You are asked to write a 3000 word essay. The essay should be in two parts, each part carrying equal marks. Appendix 3 provides some guidance on writing an essay at Masters level.

Part 1
Describe and critically comment on the main experiences and ideas that have shaped your present environmental ethic.
Part 2
Relate your environmental ethic to the reading associated with this Module, and more widely if you wish, and critically explore any contradictions or tensions between them.

Criteria for assessment
The main criteria for the assessment are:

- evidence of the use of the literature;
- critical reflection of your own values and understandings of nature;
- a well-argued and structured essay;
- the correct use of the Harvard referencing system;
- page numbering;
- title page; and
- abstract

Module AN3: Enquiring into the Environment: What Knowledge? For What Purposes?

You are asked to write a 3000 word essay. The title should reflect the following question:

If postmodernism has an almost hegemonic hold on current social thought, then what are the implications for environmental education?

Your personal and professional backgrounds and interests can be used as the basis for tackling this question. In this way the emphasis and focus of the essay can reflect scientific, social, cultural and political arguments, or indeed any combination of such emphases.

We suggest you contact me for a 'phone-tutorial' or a personal tutorial before you commence the assessment.

In considering the assessment of the essay, I shall use the following criteria:
Criteria for assessment

1. the extent to which the essay meets the negotiated conceptual context of 'postmodernism'.
2. the extent to which extant knowledge and personal insights are demonstrated.
3. the extent to which the quality of critical analysis is sustained and consistent.
4. the extent to which the essay is coherently written.
5. the extent to which there is a reflection on personal experience related to broader principles and to the literature.
6. the inclusion of a bibliography and the use of referencing in the essay.

Module AN4: Realising the Potential of Environmental Education

In order to move forward with environmental education, you have already assessed where you are at present and looked at ways in which what you do can be improved and enhanced. This process should be one which every environmental educator recognises as an integral part of their ongoing professional practice. We now want you to consider what you can do within your own educational context to promote good practice in environmental education.

Environmental education may already have a high profile within your professional context and there may be a member of staff with overall responsibility for this area of the curriculum. Then again ... perhaps not! But whatever the situation, as a committed environmental educator you need to promote and enhance good practice in environmental education.

We would like you to attempt the following assessment. We appreciate that there may be many problems for you to face in the way that your colle s and institution responds - organisational, personal, political, and so on. But have a go and see what happens. If your approach is professional and non-threatening your suggestions should be courteously received.

NB Use your research diaries to record and analyse your experiences. We would like you to further develop this area of your research writing and action enquiry in **Module AN5.**

The assessment is also likely to make a significant contribution to your personal action plan (Student Activity 4.7(b).

We would like you to write a short report for submission and consideration by the senior management of your organisation and all other members of staff in an attempt to initiate discussion regarding environmental education provision. The report should include the following:

1. Critical constructive observations on the present status and quality of environmental education provision within your organisation. Use a SWOT analysis framework: that is Strengths, Weaknesses, Opportunities and Threats you see posed by existing provision.

2. A series of outline suggestions/proposals to enhance the quality of environmental education provision within your organisation. These should be based on the SWOT analysis and be seen as issues for discussion rather than anything else at this stage. Your main purpose is to get people involved and interested - not to preach and convert.

The way you put together 1 and 2 above is entirely up to you. We offer you some suggestions for your consideration:

- existing curricula constraints and ways around these;
- existing organisational constraints and ways around these;
- specific curriculum developments in your organisation with respect to environmental education;
- dimensions of environmental education beyond the formal curriculum - a community context;
- monitoring progress and outcomes to ensure that the agreed goals are met and that the experience can be seen to be valid for all concerned

The report should be positive and progressive in a way that maps out the challenges and needs for you organisation and which identifies a possible routeway for the development of environmental education.

1. Present the report to the senior management and other members of staff. (Organising a specific staff development session may be the most appropriate way of doing this).

2. Evaluate the staff development session in the form of a short written report. This should identify the positive and negative features identified in promoting and enhancing good practice. Take a negative factor in turn and if possible think of ways in which the factors can be turned to advantage.
3. Include within your report a brief action plan for further activities and developments to promote and enhance environmental education provision within you organisation which you and (hopefully) your colleagues see as 'ways forward'.

NB We have emphasised 'progressive' in that we hope this collaborative professional development activity will not be seen as a 'one-off', but the beginning of something positive and worthwhile and effective, educationally and environmentally.

Criteria for assessment

- the extent to which the report meets the above general specifications set out;
- the extent to which the report promotes a clearly argued strategy for environmental education in the organisation;
- the extent to which the report advocates a positive and progressive approach to environmental education;
- the extent to which the report is well structured and coherent;
- the extent to which the report reflects knowledge and personal insights;
- the extent to which your action plan can be achieved realistically;
- the inclusion of a bibliography and the use of referencing in the report.

Module AN5: Environmental Education in Action: exploring local community contexts

You are asked to present an account of your local research project and experiences which includes:

1. a summary of your methods of data collection and an evaluation of their appropriateness
2. an evaluative summary of your findings with respect to the local environmental issue, which demonstrates awareness of the problems of representing 'others'
3. a critical analysis of the educational potential of the local issue with supporting teaching and learning resources
4. an evaluation of the experience in terms of your own professional development
5. a consideration of your future professional development and of your willingness to take appropriate action for the environment.

In presenting your account you should consider:

- the inclusion and use of evidence of your activities, visits, discussions, insights gained etc whilst carrying out your research project
- the use of audio/visual representation as well as written text
- that the written text should comprise at least 2000 words

Criteria for assessment

- a demonstration of the establishment and development of a dialogue related to an environmental issue with a person or persons outside of your professional life and responsibility
- a critical analysis of the environmental issue in terms of your own understanding and the understanding of involved 'others'
- the construction of a suitable teaching and learning framework designed to promote a critical understanding of the environmental issue investigated and a commitment to action, for an appropriate audience

- a critical evaluation of the educational advantages of experiential approaches to learning
- a critical evaluation of the collaborative experience with respect to your own professional development, especially concerned with:

i) the difficulties and opportunities for collaborative action enquiry with someone outside of your everyday professional commitments

ii) your future educational role a synthesis of the three integrating strands of environment, enquiry and education.

Module AN6: Review of Professional Progress in Environmental Education

You are asked to complete the following:

1. A portfolio of ideas, extracts, etc which highlight your learning to date with respect to the interrelationships between the environment, approaches to enquiry and environmental education. You are encouraged to include some extracts from the Student Activities of Modules AN1 and AN5 and any other research diary writing you regard as significant.
2. If you have any materials that you have used in your teaching, whether in your professional work or elsewhere, please select this as appropriate, for inclusion. You are also encouraged to be creative, by the use of cartoons, photographs and illustrations which project the significance of the learning experiences (1000 words equivalent).
3. A critical and concise overview of your learning experiences which will include specific reference to the relevance and significance of each of the inclusions within the portfolio. This overview is to go beyond a critique of each of the individual inclusions and should offer a more holistic perspective which integrates the three strands of environment, enquiry and education (2000 words maximum).

Criteria for assessment

The extent to which:

- the production of a portfolio includes appropriate ideas and extracts as evidence of critical involvement with the MA programme and the learning experiences it has provided;
- you are creative in the production of the portfolio;
- the portfolio is accessible to others whilst demonstrating your own personal learning experiences;
- you organise the portfolio, e.g. contents and section makers;
- you make use of extant and personal knowledge to promote your own professional development;
- it contains a critical overview which builds on the portfolio extracts but which offers a more holistic synthesis of the three integrating strands of environment, enquiry and education;
- the writing of an outline action begins to formulate a possible Dissertation theme;
- you show evidence of a bibliography of texts/papers which you found helpful and not so helpful in doing your coursework and assignments.

Module AN7: World Politics and the Global Environment (Part 1)

You are asked to write a 5000 word essay entitled:
Enough has already been achieved in global terms to ensure that a theoretical basis for progress and change is in place. The pressure is on the politicians and the policy makers to take up the challenge. Discuss.

Criteria for assessment:

1. The extent to which there is evidence of the application and transfer of existing knowledge.
2. The extent to which there is positioning of knowledge, both theoretical and personal.
3. The extent to which the quality of a critically reflexive approach is sustained and consistent.
4. The extent to which the essay demonstrates the ability to communicate effectively to your peers and tutors your personal engagement and commitment to the environment-development debate.
5. The appropriate use of referencing in the essay.
6. Evidence of bibliographic searches, e.g. library databases, CD-ROMs and Internet.
7. The clarity of argument and expression and effective presentation.

Module AN8: World Politics and the Global Environment: Educational Implications (Part 2)

The Module has raised what we regard as a number of important educational questions. These were outlined at the beginning of the Module. They were re-formulated into a single question:

What is an appropriate educational response to the eco-social crisis?
You are invited to make a concise and lucid response to this question within a maximum of 1500 words.

Your response should relate to:
1. Your professional practice as an environmental educator (1000 words); and
2. The need for a collective response at the institutional and policy level. (500 words)

Criteria for assessment:
- The extent to which the assessment is coherently written.
- The extent to which the quality of critical analysis is sustained and consistent.
- The extent to which the arguments are persuasive and justifiable.
- The extent to which the arguments push the environmental education debate forward.
- The inclusion of a bibliography and the use of referencing

Modules AN9-12: Dissertation

The following guidelines will help you to present your work in a readable and well structured form. Pay particular attention to page numbering, margins, typeface, typesize and referencing. Footnotes and endnotes may be used if you find it comfortable to use them.

Title page
Set out the title page carefully with the title of the report, your name, the date you finished the study (the month and the year) and the name of the course: *Master of Arts in Environmental Education*, and the institution: Nottingham Trent University.

Abstract page
This should convey to the reader the claim to knowledge which is being made by the study including a brief indication of the methodology used, the boundaries of the inquiry and the kinds of professional development claimed. It should be about 200 words long and should not exceed one page. It appears after the title page. Put the title of the study and your name at the top of the page, then the word *Abstract*.

Contents page
Set out the names of the chapters, etc, with page references.

Introduction

This will probably contain a general statement about the study, in terms of the practical professional problem, as originally understood, which initiated the study. Mention should be made of your personal interests and commitments in the field of the inquiry and an indication of how the opportunity to carry out the study arose. It is also helpful to the reader to indicate the structure of the study in terms of brief accounts of what each chapter contains.

Subsequent chapters

The titles and the content of subsequent chapters is variable from one study to another according to several factors, not least the inquiry methodology used. However, several components are necessary, appearing at appropriate points in the report which the you will determine in consultation with critical friends and the tutor.

These components are as follows:

- the 'practical ethic' and conceptual framework of the inquiry in terms of theory-in-the-literature and how this has related to the common-sense theory of yourself and any students, educators or others whose actions are part of the inquiry;
- careful citations and referencing using the Harvard system;
- a statement of any ethical code which has been followed throughout the inquiry;
- the methodology of your inquiry - the *main planning* of the inquiry work with philosophical justifications and explanations for the choices made between dominant methodological approaches;
- the *specific* methods and techniques used to inquire in detail (such as 'instance interviewing', observational field notes, etc.) with reference to guidance obtained from the literature, indications of the kinds of bias which may have affected the evidence gathered, indications of the degree of confidence you have in the accuracy and significance of the evidence and your criticisms of the methods and techniques you used;
- critically chosen extracts of the evidence gathered, to explain the range of interpretations generated from it, with cross references to selected longer extracts provided in an Appendix;
- an account of how you interpreted the evidence, and how you have tried to develop and test your interpretations using the validation of other participants in the action being interpreted, the theories in the literature, critical friendship comment on such things as possible sources of bias and self critical reflection on all of the above;
- an overview of the personal professional developments which are being claimed, including the interdependent developmental changes which have taken place in practice and theorisations about practice.

You should consult the Student Handbook and Study Guide AN5 for a review of action research processes that should guide the methodology of your study.

APPENDIX D

DISSERTATION TITLES

1. A Tentative Basis for Considering Future Environmental Education in Malawi (Rita Dent, Malawi)
2. A Critical Evaluation of Community Woodlands from the Perspective of an Environmental Educator (Sarah Young, England)
3. Realising the Potential of Environmental Education through the Creation of an Outdoor Classroom (Simon Samsworth, Canada)
4. The Potential of Sustainable Tourism as a Basis for Environmental Education (Alison, Glover, Botswana)
5. Evaluating Education for the Environment in an Industrial Setting - Teeside (Lynne Hammond, England)
6. Changing Perceptions of Woodlands: a Countryside Management focus in Further Education (Wade Muggleton, England)
7. A Critical Examination of the Future Role of Environmental Education at Nature Reserves (Paul Andrew, England)
8. Education for Sustainability: resourcing primary practice (Alison Woodhouse, England)
9. Towards a Demarginalised Approach to Environment Education in Primary and Secondary Schools (Ken Hutchinson, England)
10. A Cultural Approach to Environmental Education: the potential of Scottish Gaelic Culture (Scotland)
11. Ancient Woodlands: opportunities and constraints for environmental education (Donald Robinson, England)
12. Environmental Interpretation in a Nature Reserve Context: developing the capacity for change (Tim Cox, England)
13. Drama: its potential for environmental education (Helen Barlow, England)
14. Creating Environmental Education Through Reflexive Practice: an exploration of how children at The Wilderness Centre give meaning to ideas and experiences of nature (Gillian Traverse, England)
15. Towards Education for the Environment with Japanese University Students: a critical study of my professional praxis through action research (Charles Paxton, Japan)
16. Incorporating Local Knowledge and Story into Environmental Education: guidelines for the creation of an interpretation centre in the Colombian Amazon (Sarita Kendall, Colombia)
17. Cultural Identity, Environmental Perceptions and Behaviour: the relationship explored (Clare Seeley, England)
18. 'Tagging Along Behind': the educational significance of the biodiversity action planning process (Helen Perkins, England)
19. Environmental Awareness Among Pupils in Schools Bordering the Pilanesberg National Park Environmental Education Centre (Ronnie Sibanda, North West Province, South Africa)
20. Reclaiming Lost Ground: evaluating a spiritual dimension to Environmental Education (Marina Lewis, England)
21. Environmental Education in Jordan: the potential role of the Dana Nature Reserve (Mike Relf, Jordan)
22. Improving Environmental Education in a Large European Primary School by Creative Development of the School Grounds (Greg Taylor, Holland)
23. A Search for an Ecocentric Institution Able to Deliver Ecocentric Education (Laurence Speight, Oman)
24. Trading for the Environment: developing the capacity for change at nature reserves (David Julian, England)
25. Never Mind the Dinosaurs, What about the Rubbish: an investigation into the effective use of children's literature in environmental education (Gillian Curtis, England)
26. A Cultural Approach to Environmental Education: the potential of Scottish Gaelic Culture (Ken Nelson, Scotland)
27. A Critical Evaluation of Students' Perceptions of the Environment and the Implications for Environmental Education in an International School (Peter Baldwin, Spain)
28. Exploring the Challenges and Opportunities for Improving the Dissemination of Appropriate Information Among Kenyans (Simon Mbarire, Kenya)
29. Enabling Environmental Studies in FE: problems and strategies (Tony Michael, England)
30. The Educational Potential for an Outdoor Environmental Education Programme (Roger Ho, Hong Kong)

APPENDIX E
QUESTIONNARE

MA IN ENVIRONMENTAL EDUCATION
POSTAL/EMAIL QUESTIONNAIRE
PREPARED BY THE COURSE TUTOR, MALCOLM PLANT
JUNE 1999

INTRODUCTION

1. Now that you have progressed well with your studies or you have finished the course, I would be pleased if you could spend a little time and give me some feedback about your learning experiences.

2. The questionnaire is organised into the six categories listed below. Please feel free to elaborate on points as you think appropriate.

3. If you feel more comfortable writing freely rather than responding to the questions, simply use the category headings as a guide to structure a personal statement.

4. Please try not to answer simply 'yes' or 'no' to any question but justify your responses!

5. At the end of the questionnaire you are invited to express any further observation about the course that haven't been addressed by the questions.

6. Thank you for your help.

The six categories are:

1. **Curriculum Design, Content and Organisation**
2. **Teaching, Learning and Assessment**
3. **Progression and Achievement**
4. **Support and Guidance**
5. **Learning Resources**
6. **Quality Management and Enhancement**

Please return the questionnaire to:
Malcolm Plant and Natalie Seebaransingh
The Nottingham Trent University
Clifton Campus
Nottingham
NG11 8NS
UK

THE QUESTIONS

Your Name:.....

1 CURRICULUM DESIGN, CONTENT AND ORGANISATION

1.1 Was the modular structure of the course well-suited to your style of study?

1.2 Were the modules of acceptable length in terms of recommended study time? For example, in the earlier part of the course would you have preferred a double module (like AN7/8) rather than single modules?

1.3 Do you feel that the learning processes are in any sense participatory or collaborative? Relate your answer, if you can, to the course materials, to your own professional context as well as to your relationship with me as course tutor.

1.4 I would describe the course texts as 'open' in the sense that they are written in a style that encourages you to reflect on the possibilities for social change in your professional context. Did you respond to the texts in this way?

1.5 In what ways has the socially critical perspective adopted by this MA been significant in your thinking about environmental issues, e.g. in relation to your own professional practice and in considering what actions may be taken to tackle environmental problems?

1.6 Apart from the obvious geographical distance between you and me, does the word 'distance' apply in any other way to this course? For example:

- Is there a 'distance' between theory and practice?
- Is there a distance between aims and assessment?

1.7 The emphasis of the course is on 'political economy' in the belief that political and economic structures constrain humanity from living ecologically sustainable lifestyles. How do your respond to this emphasis? What might you have wished the emphasis of the course to be?

1.8 Did you find the three strands environment, enquiry and education useful as unifying themes running through the course content and processes?

1.9 If your working context is non-Western, non-European, in what ways did you find the writing style, the case studies and examples inappropriate to your cultural background? Can you give examples from the course texts to support your response?

1.10 To what extent were the content and processes of the course relevant to your professional needs? What changes would you suggest to the educational focus of the texts to match your needs closer?

2 TEACHING, LEARNING AND ASSESSMENT

2.1 In what ways did you find action research of value in developing your professional praxis? Try and relate your answer to reflection, insights and action stimulated by the course materials.

2.2 In what ways have the course processes 'empowered' you as an environmental educator to address environment and development issues that are meaningful in your own cultural context?

2.3 To what extent do the coursework activities and formal assessments enable you to focus your writing on issues of value and interest to you professionally?

2.4 Two what extent has the dissertation
(a) been a means of bringing to bear on the research question(s) the course content and processes?
(b) been rewarding in intellectual and professional terms?

3 PROGRESSION AND ACHIEVEMENT

3.1 Identify a couple of ways in which you have found the course stimulating and enjoyable.

3.2 Identify a couple of ways in which you have found the course frustrating and disappointing.

3.3 Most students find the course intellectually demanding. Do you and, if so, in what ways?

3.4 Can you identify any ways your studies have developed you personally? You might like to refer to this development in terms of knowledge and understanding, specific practical or professional skills, and progression to employment or to further study.

3.5 At the beginning of the course, you were asked to write an ecological autobiography. Can you comment on the value of writing it? Please refer to its value at the time you wrote it as well as during the subsequent studies, including in the dissertation.

3.6 If you have completed your dissertation, in what ways did you reflect on the changes to your environmental ethic as the course has progressed?

4 SUPPORT AND GUIDANCE

4.1 Has the tutorial support been responsive to your needs? e.g. has the frequency and quality of the tutorial contacts been satisfactory? How might they have been improved?

4.2 To what extent were you satisfied with the consistency and rigour of the tutor feedback on your assignments?

4.3 Did you need to have a sense of 'belonging' to the course, e.g. in terms of sharing ideas with the tutor and other students? Did you want to interact with others or were you happy to study without making contact with other students?

4.4 Has the programme of study allowed you to work at your own pace? e.g. is it flexible in allowing you to study while doing a job?

4.5 In what ways were the course content and processes of value to you in your day to day work?

4.6 How would you describe the response of the Course Administrator to your queries and engagement with the course?

4.7 A 'critical friend' can be an important combination of comfort and critique. How important was he or she to you?

4.8 If you attended a day school in Nottingham, how useful did you find it?

5 LEARNING RESOURCES

5.1 Besides the texts sent to you, what other resources would you have found useful?

5.2 Would an Internet-based course rather than the existing text-based course have been an advantage to you?

5.3 How easy was it for you to access texts required for the studies? For example, did you borrow books from a library, send away for them or ... ? Were you close enough to Nottingham to visit the university's library?

6 QUALITY MANAGEMENT AND ENHANCEMENT

6.1 Please comment on the quality of presentation of the course materials? For example, were they presented in an appropriate style? Did you want a 'glossy' more professional finish to the materials?

6.2 Are there any modifications that you may feel are needed to the course procedures such as enrolment, induction, despatch of module packs, acknowledgement of receipt of materials and so on?

6.3 Have you any observations to make about the distance education model for this MA? e.g. is it meeting/has it met your needs and expectations?

7 At this point if there are other issues about the MA course which you would like me to hear, please add them below.