A CRITICAL ANALYSIS OF THE FACTORS INFLUENCING INTERPRETATION AND IMPLEMENTATION OF THE CROSS-CURRICULAR ENVIRONMENTAL EDUCATION THEME IN SECONDARY EDUCATION IN ENGLAND

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Abstract

Environmental education in schools has a critical part to play in the reorientation of social attitudes and behaviours that address the perception of a looming environmental crisis. Many believe there is a need for a debate about the purpose of education. In the UK, government imposed educational change by introducing the Education Reform Act in 1988. There was a clear opportunity to address environmental education within this reform. In 1992 government made a commitment to Agenda 21 (UNCED) that included the proposal that, within 3 years, governments should prepare or update strategies to integrate environment and development into all areas of education.

This thesis considers whether any of the rhetoric has been realised. It recognises the crucial role of teachers in implementing reform and it uses a Grounded Theory methodology to 'give teachers a voice' in an attempt to understand the impact of teachers' beliefs on environmental education development in English secondary schools. The study was carried out in 3 schools that were participating in an environmental education pilot project in Cumbria and also in 3 schools in Merseyside. Interviews took place with 27 teachers, with one external consultant and with the co-ordinator for the Cumbria project.

The key finding is that the limitations on environmental education provision at its most profound, socially reforming level are beyond the locus of control of

teachers. The outcomes of the ERA (1988) with its imposition of a restorationist curriculum and the accompanying myths about the nature of knowledge are such that the role of teachers as experts-in-knowledge and a didactic mode of teaching have been reinforced. Neither of these promotes the collaborative endeavour of knowledge construction that would be prerequisite for reforming education to meet the needs of a complex, rapidly changing world. Within these constraints, environmental education is likely to remain in its infancy with provision being limited to the knowledge and skills defined in conventional subject areas.

Keywords: Environmental education; secondary schools; teachers.

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Chapter 1: Introduction

Concurrent with the Industrial Revolution the human species became capable of transforming the natural world in a way and at a rate not seen previously. Rapid technological advance combined with the spread of Western ideology created material affluence. However, the behavioural skills and attitudes that could control their adverse effects did not always accompany these developments. Not all of the consequences of the technological advance were desirable and the affluence created has all too often been accompanied by environmental degradation. Since 1978 we have been in a position where it is recognised that planet Earth might be at risk from unforeseen and possibly irreversible damage. (Tbilisi Declaration, 1978).

From a global perspective, some evidence of environmental degradation is irrefutable and the consequences of population movements and stresses are increasingly evident as developed economies are called upon to respond to major environmental, political and social disasters in the developing world. These responses are increasingly informed or constrained by national considerations and it is clear that, as the demands are perceived to be increasing, nationalism in its exclusive and protectionist form is gaining strength despite the high ideals of international movements like the General Agreement on Tariffs and Trade (GATT), the group of 8 major industrialised countries (G8), the European Union (EU) and others. For individuals, responses to the needs of others may well depend on the individual's perception of their own security combined with an element of enlightened self-interest.

Political upheavals across the world in recent years (such as the Iraq Wars of 1991 and 2003), far from solving problems, appear to be creating more and thereby increase the global pool of environmental degradation. There is no shortage of advice. What is lacking is consensus about defined political, economic and social objectives rather than the imprecision of much current thinking. As

long ago as (1977) Ophuls claimed that ecology was about to engulf politics and economics and that how we conduct our lives would be increasingly determined by ecological imperatives. He also claimed that society will continue to problem-solve within existing paradigms and that even partial solutions would be sufficient to allow the continuation of slightly modified paradigms. His preferred *"minimum, frugal, steady-state"* as a way forward for a post-industrial society is unlikely to be easily achieved by problem solving within existing political paradigms.

Despite the complexities of the theoretical debate, there is a clear need to develop a pragmatic approach to environmental issues and to environmental education. As Sagoff (1988) pointed out, "... *we have to get along without certainty; we have to solve practical, not theoretical problems; and we must adjust the ends we pursue to the means available to accomplish them. Otherwise, method becomes an obstacle to morality, dogma the foe of deliberation, and the ideal society we aspire to in theory will become a formidable enemy of the good society we can achieve in fact"* (p. 14). This raises the question of how an environmental education curriculum that makes a real impact on the values and attitudes we hold can be designed and delivered without compromising those values and attitudes for self interest. What Sagoff said could too easily be used to justify doing too little too late.

An historical review will reveal that, despite the world-wide recognition accorded to environmental education throughout a series of major international conferences, the translation of theory and rhetoric into policy and practice has been less than successful in addressing economic, political or social issues which have been identified as problems that require an input from education. Environmental education is a relative newcomer to the domain of the school curriculum. Twenty years ago it would most likely have been described in terms more appropriate for the description of an environmental science and one of the enduring legacies of that interpretation is the current confusion about what

position environmental education might occupy in the curriculum or indeed what environmental education is.

The principal stimulus for this study is concern about the apparent demotion of environmental education in the National Curriculum at a time when there is a growing political, economic and societal awareness of the potential long-term dangers of environmental degradation. The review of the National Curriculum known as the Dearing review (SCAA, 1994) made no recommendations designed to reinforce the position of environmental education in the school curriculum. Indeed, it could be seen as having been removed. Following the review, in 2002 Citizenship became part of the curriculum. In the 1998 report from the Advisory Group on Citizenship there are references in the learning outcomes for Key Stage 3 to understanding of the terms *overseas aid, sustainable development, international trade, charity, human rights* (p. 50) and for Key Stage 4 to *stewardship, interdependence, ethical trading, peace-making and peacekeeping* (p. 52). In the Citizenship guidance document that followed in 2000, education for sustainability is described as *enabling pupils to develop the knowledge, skills, understanding and values to participate in the way we do things individually and collectively ...there are opportunities for pupils to develop their understanding of sustainable development within the school curriculum, in particular in their work in Citizenship and PSHE, as well as in geography and science* (p. 31). What is meant by sustainable development is not specified.

It seems that for secondary schools environmental education provision has now been located in a small number of defined areas of the curriculum. This has the potential advantage that the curriculum is more likely to be delivered if it is constructed as discrete blocks of knowledge, understanding and skills where delivery is more easily manageable. The disadvantage is that environmental education is more likely to be understood as a topic of study and less likely to fundamentally affect values and attitudes.

Part of this study will explore the nature of environmental education and it will become clear that attempting to define environmental education as a discrete curriculum component fails to accommodate the breadth and depth of knowledge and skills embraced by the term. One of the dilemmas for people developing environmental education policy is that the gap between the 'ideal' and the 'pragmatic' can seem to be unbridgeable and that the compromises that have to be made are so great that they undermine the principles of environmental education. The current moribund position of environmental education in many schools may be at least partially the result of this dilemma.

The environmental debate has moved decisively out of the science arena and most researchers in the field are no longer simply problem solving within existing paradigms. The debate now revolves around the search for fundamental political change that will facilitate a move towards sustainable development in society. It has long been agreed that education has a crucial role to play, but defining that role is proving to be problematical. Once again existing political paradigms prevail and limit the potential for schools to act. Political expediency appears to be increasingly affecting what schools can do. If education is to make the necessary and expected contribution to the attitudinal changes that would be essential for fundamental political change to take place, then it is most likely to happen within a life-long education process. Slight shifts in attitude across society can lead to change, albeit a slow process. This may not satisfy the "doomsday" theorists but the "anything is better than nothing" school could justifiably claim that small changes will at least move society in the direction of believing that there is something that can be done.

The problem is two-fold. The theoretical parameters for tackling environmental issues are ill defined and also there are manifest difficulties in assigning responsibility for environmental education to schools. Political and economic realities reinforce the scientific evidence that global environmental degradation in all its forms can no longer be ignored. Societies are clearly in a

state of turmoil and attempts to problem-solve within dominant social, political and economic paradigms are having limited, short-term success. The reliance on growth in production and consumption to generate wealth appears to exacerbate some environmental problems. Successive international conferences have acknowledged the urgent need to take action and governments have committed themselves to doing so. The dilemma inherent in this situation is that of recognising the problem and the urgency of tackling it, but also recognising that the short-term consequences of the changes that will take place will be seen by many to be the loss of what have long been considered to be the benefits of a technological society. This dilemma can overwhelm or obscure many strands of the debate about policy and practice. The danger is that, while academics explore their intellectual 'highways and byways', those excluded from the theorising can be demoralised by hopelessness. Light and Katz (1996) address this dilemma in writing that environmental ethics has made "... *significant progress in the analysis of the moral relationship between humanity and the non-human natural world. The field has produced a wide variety of positions and theories in an attempt to derive morally justifiable and adequate environmental policies. On the other hand it is difficult to see what practical effect the field of environmental ethics has had on the formation of environmental policy.*" (p.1). They agree with Sagoff (1988) that there is a need to develop a methodology of environmental pragmatism.

For environmental education in schools the issue goes beyond the knowledge and skills domains where the question "What can be done?" can be answered. It enters the values and attitudes domains where the question "What should be done?" is considered. It is here that the beliefs of teachers are most likely to have an impact and this study is intended to shed light on any teacher beliefs that will influence the development of environmental education.

1.1 Purpose of study

The aim of this study is to critically analyse the factors influencing interpretation and implementation of the cross-curricular environmental education theme. It considers the following three strands:

- analysis of the process by which non-statutory curriculum policy was interpreted within a curriculum containing statutory requirements.
- the location of environmental education provision within schools' historical, social and political contexts.
- analysis of the variety of ideological positions with respect to environmental education adopted by school policy implementers and description of the interaction between these and the ideology implicit in Government's advisory documents.

The aim of the investigation, although focused on environmental education, could equally well have focused on any of the cross-curricular themes or indeed any element of the school curriculum. Robottom (1991) points out that the environmental education discourse shifted between both the environmental and the educational discourses. The debate surrounding the provision of an environmental education curriculum reflects many aspects of the fundamental questions: What is the purpose of education? What are the desired outcomes? The distinction between statutory and non-statutory elements of the National Curriculum inevitably conveys one perspective on these questions. Teacher responses in this study indicated their perspective and threw light on whether policy statements shape their thinking about environmental education.

Regardless of the interaction between competing and conflicting perspectives on either education or environmental education, Jickling and Spork (1996 p. 46) claim, *"In principle environmental education has become a formal element of the curriculum in schools and colleges across the world but few would disagree that*

there remain many barriers to the successful implementation of policies which will have a positive global impact. The problems begin at the policy-making stage, proliferate through the implementation stage and are arguably at their most complex when considering the desired outcomes." There is recognition here that the desired outcomes were ill-defined in the curriculum.

1.2 Research questions

The following questions underpinned this study:

What do teachers articulate about their beliefs about environmental education?

What, if any, structural impediments did they describe that hindered their ability to deliver an environmental education curriculum?

What changes were needed to enhance the delivery of environmental education?

1.3 Research assumptions

The following assumptions were implicit in this study:

- That autonomous actions might be determined by beliefs.
- That a well-designed environmental education curriculum in schools could lead to behavioural and attitudinal changes that would address environmental concerns.
- That teachers' beliefs can be implied by interpreting what they say within observable professional and social contexts.
- That it is possible for researchers to make the distinction between their own beliefs and those that they are attempting to uncover in what teachers articulate.
- That there is a need for an identifiable strand of environmental education within a school curriculum.

1.4 De-limitations of study

This study was limited to a small number of schools so there is a possibility that some findings may have been situational. There are, however, reasons for believing that many of the findings would be found in many schools. Most secondary schools in England and Wales have a statutory obligation to deliver the National Curriculum so its influence will be common to those schools. Most teachers entered the profession having experienced fundamentally the same type of education and this is likely to be the foundation of their beliefs about the role of a teacher. The possibility that conflicting findings might emerge from rural schools and urban schools was anticipated by choosing examples of each for the study.

Chapter 2: Literature review

Environmental education in UK schools is considered by Sterling (1992) to have emerged from the work of Sir Patrick Geddes (1845-1933) who linked quality of the environment and quality of education by providing learning experiences within the learner's environment. It evolved in tandem with the Victorian obsession with nature into the early to mid-20th century rural studies, field studies and environmental studies movements. In the UK the first use of the term environmental education is likely to have been at a conference held at Keele University in 1965 where educationalists and conservationists came together. This led to the founding of the National Council for Environmental Education.

Since then the concept of environmental education and its place in a school curriculum has been intensively studied and debated with complex and often contradictory outcomes. Nevertheless, for many there remains the perception that there is increasing evidence of environmental degradation and that there are at least circumstantial links to the Industrial Revolution. Pollution and global warming are seen to be outcomes of poorly managed technological development. This perception of environmental degradation underlies the attempt to include environmental education in the curriculum. Beyond that, there is far from a consensus about the nature and causes of the degradation and, as a consequence, the debate about solutions to environmental problems and the role and content of environmental education in the curriculum is complex and often inconclusive. It is not therefore surprising that policy-making is a similarly complex process. Not only is it vulnerable to the increasing political influences on curriculum content (Graham & Tytler, 1993), but it is also emerging from a theoretical background which is a maze of ideologies.

What follows in this section attempts to illustrate the intensity and complexity of some aspects of the debate. It will become clear that it cannot in this context

be a comprehensive review of what is an extensive body of relevant literature. This review will focus on three aspects of the literature:

- Environmental
- Educational
- Environmental education

2.1 Environmental discourses

There are a number of imperfect ways that environmental discourses can be classified. O'Riordan (1976) described the theoretical dual and divergent classification of ecocentric and technocentric environmentalism but he cautioned against the use of such dualism in practice. The environmental debate does not divide neatly into one or the other. Ecocentrism argued for low-impact technology and embraced virtues like "*...reverence, humility, responsibility, and care*" (p.1). Technocentrism embraces a degree of arrogance with the assumption that humans can understand and control nature. A more inclusive classification describes a shallow/deep ecology continuum that underpins a wide range of perspectives. Shallow ecology is fundamentally anthropocentric and considers nature to be instrumental to human needs. Deep ecology assigns intrinsic value to nature. Pepper (1996) describes the distinction between shallow and deep ecology as, "*Shallow ecology's metaphor for nature is that of a machine, while deep ecology's metaphor is an organism* (p.35). Other perspectives are located between these and can be variously adopted according to the individual's socio-economic status, the dominant issue or the institutional setting (O'Riordan, 1976).

Merchant (1992) rejects the simplification of the shallow/deep ecology classification and maps the middle ground in her tripartite classification of egocentric (self), homocentric (society) and ecocentric (cosmos) environmentalism. She then subdivides these. Egocentrism consists of self-interest and religious strands. There is a belief that the maximisation of individual benefit will benefit society as a whole and also a belief in the authority of God.

Homocentrism is made up of utiltarian and religious strands. It embraces belief in social justice, duty to other humans, the greatest good for the greatest number and also the concept of stewardship of the environment on behalf of God. Ecocentrism consists of eco-scientific and eco-religious strands. It is characterised by scientific belief systems based on ecological laws, balance of nature or chaotic systems and also belief that all things have value with humans having a duty to the whole environment.

Dryzec (1997) makes a case for using the dominant discourse of industrial society as the starting point for classifying environmental discourses. He characterises this discourse "... *in terms of its overarching commitment to growth in the quantity of goods and services produced and to the material well-being which that growth brings*" (p.12). He suggests the following classification:

- Reformist Prosaic Problem Solving

  Here the political/economic status quo is taken as given and environmental problems are dealt with by adjustments made through public policy.

- Reformist Imaginative Sustainability

  This envisions economic growth and environmental protection as being complementary. The sustainability discourse was given impetus by the Brundtland Report (World Commission on Environment and Development, 1987).

- Radical Prosaic Survivalism

  This is the discourse that assumes that both economic and population growth will be governed by the limits of natural resources. It seeks a radical redistribution of power within the society and a reorientation away from perpetual economic growth.

- Radical Imaginative Green Radicals

  Supporters of Green Radicalism reject the privileging of human interpretations of the environment. Within this discourse there are social ecologists who are concerned with social justice and those deep ecologists who privilege nature.

Tensions exist in Green Radicalism between those who advocate 'action on the streets' and others who prefer 'action in parliament'.

Dryzek (1997) concludes that links between these discourses need to be identified as a way of "... *grounding such ideas in a more realistic analysis of how the future can actually unfold, as opposed to wishful thinking about how it should unfold*" (p. 200).

Embedded within these classifications are a number of environmental themes, some of which will now be described.

- *Technocentrism*, has faith in scientific knowledge and existing political and managerial structures (O'Riordan, 1976). It is firmly rooted in the belief that humans can understand and control nature. Science will provide explanations for the technical and scientific causes of environmental problems and will then design solutions. Faith in technocentrism assumes that dominant political systems will then accept and implement those solutions. Pepper (1996) highlights the requirement for institutions to be adaptable to environmental demands and for belief in the application of "... *science, market forces, and managerial ingenuity*" (p. 37).

- *Anthropocentrism* rejects the alienation of humans from nature (Pepper, 1996). It includes ecological humanists who apply human-centred values to nature for pragmatic reasons. They recognise that nature has a value both as a material resource and as a spiritual resource but ultimately consider the needs of humans to be dominant. Naess (1989) pointed out that no differentiation is made between vital and peripheral human needs and no contrast is made between essential needs of nature and peripheral needs of humans. He added, "*The uniqueness of Homo sapiens, its special capabilities among millions of kinds of other living beings, has been used as a premise for domination and mistreatment*" (p. 171).

- *Eco-socialism* is anthropocentric and humanist (Bookchin, 1980; Pepper, 1993). Here the fundamental message is that environmental problems are a consequence of social problems. To overcome these and create an ecologically desirable society, humans must locate their 'good' within the 'good' of the ecosystem and must develop collective strategies to overcome political and economic barriers embedded in capitalist systems rather than merely attempting to use education to persuade individuals to change undesirable values and attitudes. Pepper (1993) examines ideas of biological egalitarianism and concludes that bio-centrism will have limited support from a species whose survival inevitably depends upon the exploitation of the natural world. He suggests that effective and coherent 'Green' policies can only evolve from Socialist theory. He concedes that an eco-socialist society is unlikely to evolve until enough people want to create and sustain it and that the *"... biggest catalyst will be the failure of capitalism (a) to produce the 'goods' which it promises, for even a small minority* and *(b) to create a physical and non-material environment for the rest which is tolerable enough to maintain discontent"* (p. 234). Capitalism is seen as perpetuating systems that create environmental degradation and social injustice. Eco-socialism embraces the *"... Enlightenment promise of universal material progress, providing sustainable development and adequate living standards for all"* (p. 34).

- *Deep ecology* has been described as deeply Malthusian (Devall & Sessions, 1985; Naess, 1973; 1989). Implicit in deep ecological thinking is a gloomy prognosis that earth's resources cannot continue to meet the demands being made by demographic expansion. Deep ecologists reject the dualist human/nature concepts and consider that humans are an integral part of nature. Ecological sciences are not seen to be the sole sources of solutions to ecological problems since it is unlikely that there will ever be enough information to be certain. We should therefore allow intuition and emotion to influence our actions and should do nothing that might result in environmental damage.

- *Eco-feminism* is often seen to link environmental degradation with the oppression of women (Merchant, 1996; Shiva 1991,1992). Shiva believes that the root of most social and ecological problems is in the commitment to science and economic growth that emerged from the Enlightenment. This sanctioned the exploitation of earth's resources within the rational paradigm and is essentially patriarchal.

> *"The reductionist mind superimposes the roles and forms of power of western male-oriented concepts on women, all non-western peoples and even on nature, rendering all three "deficient" and in need of development"* (Shiva, 1991, p. 5).

Merchant concurs to some degree but points out that the metaphor of the scientific exploitation of the Earth Mother is oversimplified. One eco-feminist perspective would promote a return to the vision of Earth as being deserving of the respect shown to a mother. Ecofeminism cannot easily be located on the shallow/deep ecology continuum. It contains a core belief that there is convergence between women and nature and an assumption that patriarchy is the root of the oppression of both women and men. Eckersley (1992) however is uncomfortable with the implied stereotypes and sees both the over-rational/analytical male stereotype and the converse female stereotype as deficient.

- *Ecocentrism* largely addresses the value of the non-human world (Eckersley, 1992). It embraces *animism* which attributes a soul to the non-human elements of the environment. Defining eco-centrism is problematical. It embraces aspects of Lovelock's (1989) concept of Gaia which describes the earth as a self-regulating system. Nature can be considered to have intrinsic or instrumental value. Ecocentrism's view of technology is complex. Pepper (1996) describes it as being Luddite insofar as the Luddites rejected elite control of technology. So 'alternative' technology is embraced in the forms of soft, intermediate or

appropriate technologies. These are seen to be potentially democratic as opposed to sophisticated technology that can be owned and controlled by an elite.

- *The Gaia hypothesis* (Lovelock, 1989) proposes that the planet is one complex self-regulating system of interaction between living organisms and their environment with feedback mechanisms to constantly adjust for a healthy planet. This hypothesis has much in common with those aspects of deep ecology that privilege nature although it evolved from scientific study. Indeed in its earliest form it was known as biocybernetic universal system tendency. Its relevance for environmental thinking is, as Lovelock (2006) suggests, that there is a real danger that human activities have now perturbed the system beyond its capacity to respond to maintain a healthy biosphere.

Clearly many environmental ideologies have proved to be resistant to definitive classification and some are mutually exclusive, e.g. the technocentric, anthropocentric, free-market philosophy of Market Liberals has no fundamental meeting point with the ecocentrism of Green anarchists and ecofeminism. Further conflict is embedded in the dominant, dualistic concept of the environment. This is seen to have evolved from the distinction between natural (non-human, nature) environments and human (man-made, cultural) environments. Indeed Colwell (1997) sees the Nature/Culture dualism as a contradiction of a holistic, ecological vision and suggests the term *earth system* for such a vision. This would complement Lovelock's concept of Gaia. Emerging from this plethora of perspectives are the debates about whether they might inform environmental action. Somehow there needs to be a transition from theorising about the causes of environmental problems to a viable and effective course of action.

2.2 Educational Paradigms

If we now consider what is meant by the term education, a similarly complex debate is revealed. For the purposes of this work, a typology of education

paradigms outlined by Sauvé (1996) will be used. In this the three paradigms described are the rational, the humanistic and the inventive.

Within the rational paradigm, education has evolved as transmission of mainly scientific and technological, predetermined knowledge. This is likely to be the dominant education paradigm within the industrial socio-cultural paradigm where there is competition for productivity and growth. Control of nature would be a dominating characteristic. Friere (1993, p.30) would find common characteristics between this and what he considers to be pedagogy *for* the oppressed. Trybus (1992) suggests that in this mode the teacher *does to* the pupil who has no choice and is a captive antagonist wishing to escape the situation. The positivist image of environmental education (knowledge about the environment) described by Robottom & Hart (1993) would be located within this paradigm. Teachers are the *authority-in-knowledge* (p.26).

In the humanistic paradigm, education focuses on optimal development of the many dimensions of the learner. Respect for nature would be a desirable outcome. The humanistic paradigm is likely to evolve within the existential socio-cultural paradigm where there is a search for personal freedom and achievement. Friere (1970) would see this as an early stage in the liberation of the oppressed. He would anticipate that the oppressed would eventually become oppressors because the ...*very structure of their thought has been conditioned by the contradictions of the concrete, existential situation by which they were shaped* (p.27). For Trybus (1992) the teacher would be *doing to or with* the pupil who is moving from being captive, dependent and passive towards developing autonomy. The interpretivist image of environmental education (activities in the environment) described by Robottom & Hart (1993) would be located here and teachers are *organisers of experiences in the environment* (p.26).

In the inventive paradigm co-operative learning enables knowledge to be constructed for the purpose of social transformation. Friere (1970) would see this

as pedagogy *with* the oppressed and would expect the role of the educator to be *to create, together with the pupils, the conditions under which knowledge at the level of the* ***doxa*** *is superseded by true knowledge at the level of the* ***logos*** (p.62). In other words, knowledge would be transformed from strong beliefs founded on information transmitted from others, to knowledge constructed by the learners using their own experiences and evidence. This is the mode in which Trybus (1992) claimed that teachers *enable* pupils to become independent investigators and seekers of knowledge with a joy of learning. Robottom & Hart's (1993) critical image of environmental education (action for the environment) would be located within this paradigm with the teacher role being that of *collaborative participant/enquirer* (p.26).

Before curriculum content can be designed, there needs to be a consensus about what purpose education serves in society. A range of philosophical positions has driven education in the years following World War 2. In the immediate post-war years education was seen to be a key player in creating an era of social justice with equality of opportunity. In the 1960s and 70s the economy was to be transformed by technological developments which, it was believed, would benefit all members of society. Government increased spending on schools but there was little statutory control over how the money was spent and schools retained considerable autonomy over curriculum content.

A combination of factors led to a dramatic downturn in the economy, governments needed to be seen to be 'doing something' and one of the outcomes was the reappraisal of education which led to the Education Reform Act (1988). Education reform could be seen to be a low-risk strategy for government since it is a long-term strategy which has little short-term potential for electoral perceptions of negative consequences (Apple, 1996).

The major themes of the neo-liberal and New Right reformers were to introduce market mechanisms into education in order to reduce costs and drive up

standards. Control over curriculum content and, to some extent, pedagogy would be centralised under government appointed authorities and would be monitored by standardised testing and the Office for Standards in Education (OfSTED). There would be increased pressure for schools to be delivering the outcomes which business and industry considered to be appropriate. Finally there emerged a discourse which coincidentally appeared to ensure that education professionals were excluded as far as possible from ensuing debates (Apple, 1996; Shacklock, 1998). It seems that education is to be defined as a utilitarian social 'good' within the rational paradigm and that the locus of control is to be distanced as far as possible from practitioners.

These reforms were introduced using a power-coercive strategy where curriculum development is enforced in a top-down model. The disadvantages of this model include that policy, which is imposed from the top, may be distorted if policy-implementers, who have been excluded from the policy-making process, have an opportunity to critically reflect on the reform. Apple (1996) considers the reforms to be an illustration of the New Right shift from social alliance in educational development to the creation of a curriculum " ... *providing educational conditions necessary both for increasing international competitiveness, profit and discipline and for returning us to a romanticised past of the ideal home, family and school"* (pp. 27-28).

The reform process however depended on an uneasy alliance between neo-liberals and the New Right and Graham and Tytler (1993) highlight some fundamental disagreements as the contents of several aspects of the curriculum were debated. For example, the Secretary of State for Education (then John McGregor) referring to the Geography curriculum,"*...let it be known that the wording of the attainment targets would have to reflect more traditional Geography and should not sound too sociological, environmental or political"* (p.72). This was the catalyst for conflict between the 'capes and bays', knowledge-based curriculum supporters and the post-modern geographers who

saw their curriculum as values and attitudes based, embracing the 'dangerous knowledge' to be found in sociology, politics and environmentalism. The second of these is most compatible with the values and attitudes strand of an environmental education curriculum. Ball (1994) points out that a

"... restorationist National Curriculum geography isolates pupils in time and space, cutting them off from the realities of a single European market, global economic dependencies and inequalities, and ecological crisis (p.37).

Emerging from these reforms was a curriculum constructed around statutory core subjects with a number of foundation subjects and non-statutory cross-curricular themes. Environmental education initially appeared as a cross-curricular theme. The subsequent reviews and modifications to the whole curriculum are well documented but the outcome for environmental education is summarised by Palmer (1998) when she writes *"... no longer was it a recognised 'theme' or element of the curriculum in its own right. On the other hand, the curriculum revisions placed a great deal of what had traditionally been regarded as the content of environmental education at the heart of the two statutory subjects – geography and science"* (p. 26). The School Curriculum and Assessment Authority reinforced the position of environmental education in geography and science and added,

> *"Environmental matters may also feature in other National Curriculum subjects, not because they are required, but because schools choose to take up opportunities to include an environmental dimension"* (p.4).

This was the clearest indication to schools that they were *required* to deliver no more than what appeared in the science and geography programmes of study. In addition the PSHE and Citizenship documents included references to sustainable development. Anything more was dependent on the commitment of individual school management teams or individual teachers so their beliefs and attitudes were likely to be important determinants.

These documents placed a heavy emphasis on the predetermined knowledge, skills and understandings that pupils should achieve, and this positions environmental education firmly within the rationalist and humanist educational paradigms. There is no requirement and little opportunity for teachers and pupils to engage with the socially transforming potential of the inventive education paradigm. Apple (2004) illustrated the dangers of this when he wrote,

> *"This speaks to the reality of the selective tradition in official knowledge.... Even when there have been gains in the school curriculum – environmental awareness provides a useful example – these have been either adopted in their safest forms or they fail to internationalise their discussions"* (p.161).

2.3 Environmental education discourses

It is here that environmental and educational discourses begin to overlap and merge and lend credence to the claim that they have much in common. Change of the nature and magnitude that will be required to remodel moral and value judgements raises the issue of the purpose of education. Current educational structures and practices have evolved towards those that are believed to be most likely to result in self-reliance. Education is biased towards preparing individuals to take their place in a techno-centric, competitive, free-market, consuming society. Ball (1994) argued that the market and neo-liberalism promote hedonism and self-interest and the planned pursuit of the common good is rendered meaningless. He suggested that: "*We can already see these market values, and the 'deformed ethics ' to which they give rise, at work in the UK school system*" (p. 103). Environmental responsibility can only fully develop when individuals can critically examine the effects of their actions on ecosystems and can also understand and evaluate their role and responsibilities within socio/economic structures. The ability to evaluate in this context will lead to an improved potential to understand the possible consequences of individual actions and

attitudes. If education is to fulfil what many feel is its fundamental role in reshaping attitudes, then the self-reliance outcome will need to be placed into the broader context of striving to create a just, secure and healthy society for all. In short, humans need to have the ability to see development in any form in terms of its effects on ecosystems and of its implications for others, as well as of its personal implications. Clearly environmental education must go far beyond the concept of managing ecosystems. It must embrace understanding of economic, political and social systems and development of skills to change or abandon systems that do not directly support sustainable societies. It must promote the concept of social justice for all. Additionally there is a need to address existing misconceptions. Connell, Fein, Lee. Sykes and Yenvken (1999) researched environmental attitudes amongst secondary school pupils and arrived at the conclusion that most young people are *"...locked in the liberal idealism of believing that change can come about if people change their attitudes, if we all worked together,...at the same time their feelings were also dominated by the pessimistic belief that the future was going to get worse and that, as individuals, they could hope to do very little about it"* (p. 111).

Robottom and Hart (1993) claim that much of the current debate on environmental education policy is behaviourist and its ideology deterministic. They see this as having bureaucratic appeal because it socialises individuals to workplace discipline. They also assert that environmental education is a problem of education and not of the environment.

Fien (1993) describes the environmental education curriculum problem as *"the rhetoric-reality gap"* and says that schools, teachers and pupils need to be able to question *"... the values and practices of the Dominant Social Paradigm and the tendencies in education and society to reproduce such values and practices"* (p. 12).

What is needed is a reorientation of education from its present role of socialising individuals to find their place within existing political, economic and

social structures and the changing needs of post-Fordist industrial production towards a mechanism for encouraging participation in decision-making and for transforming values leading to pressure for change.

2.4 Policy – making and implementation

Governments are now faced with the need to do more than just talk about environmental education policy. The UK Government committed itself to preparing a National Strategy for Sustainability and in *This Common Inheritance; Britain's Environmental Strategy,* HMSO (1992) stated:

> *"Governments should strive to up-date or prepare strategies aimed at integrating environment and development as a cross-cutting issue into education at all levels within the next three years. This should be done in co-operation with all sectors of society. The strategies should set out policies and activities, and identify needs, cost, means and schedules for their implementation, evaluation and review"* (p. 7).

As successive international conferences attempted to refine ideas about environmental issues and consistently reinforced the critical role of education in the evolution of attitudes towards sustainable development, in the UK the National Curriculum Council (NCC) was grappling with the problem of creating and introducing into UK schools a national curriculum. There was a clear opportunity to translate commitment into action by publishing a policy statement for use in schools that would begin to address some of the objectives identified in the first section of this work.

Failure by the government to honour commitments to environmental education might even be seen to be failing education as a whole. So, whilst acknowledging the complexities of the debate, Parker (1996) points out:

> *"We have no absolutely indubitable beliefs; only a stock of importantly undoubted ones. We have no absolutely clear, immutable concepts; we*

do have, many concepts that are sufficiently clear and stable to let us make pretty good sense of experience" (p. 22).

We recognise the human potential to irreversibly damage the planet. We suspect there are limits to the potential of science and technology to solve the problems. We realise the profligacy with which global resources have been exploited in the past. Political leaders are making commitments to environmental education on a global stage that recognise the critical role of education in addressing the issues.

Despite it all, Graham and Tytler (1993) give an extensive account of the difficulties faced by those engaged in the exercise of producing a national curriculum. Clearly at one stage there were some who saw environmental education only as an element of the geography syllabus, some considered it to be the responsibility of science and technology, while others placed it in the wider context of the cross-curricular themes. Much has been written about the stresses and tensions, both implicit and explicit, which had to be accommodated before any policy emerged from the NCC. The result was that aspects of the geography, science, technology and RE documents contributed to environmental education but they were originally contextualized by the cross-curricular Curriculum Guidance 7 document for environmental education. There were further contributions to be made from other cross-curricular policy statements and subsequently by the QCA (1999) Citizenship statement.

Citizenship became a statutory requirement of the curriculum in 2002. In the 1999 Citizenship statements the programmes of study include the following:

Key Stage 3: Knowledge and understanding about becoming informed citizens.

i. *the world as a global community, and the political economic, environmental and social implications of this, and the role of the European Union, the Commonwealth and the United Nations* (p. 14).

Key Stage 4: Knowledge and understanding about becoming informed citizens

j. the wider issues and challenges of global interdependence and responsibility, including sustainable development and Local Agenda 21 (p. 15).

These are the two explicit references to environmental issues and sustainable development. For teachers who are struggling with the continuing imposition of externally generated initiatives there is little here to support them in developing the environmental education aspect of the curriculum. Also the emphasis on knowledge and understanding can be seen as being at the expense of promoting values and attitudes that could lead to a more just, equitable and sustainable society. Goodall (1993) considered that citizenship education needed to be a form of critical thinking, political activism or inquiry. He claimed, *"Without an ethical basis which includes considerations about the fairness of current processes of resource exploitation, the teaching of citizenship skills, attitudes and knowledge will not develop citizenship"* (p. 39). In the wake of the introduction of statutory Citizenship provision, Ibrahim (2005) goes as far as suggesting that *"(t)he concept of global citizenship implies a shift towards more inclusive understandings of citizenship and suggests a need to reinterpret the objectives of citizenship education"* (p. 189). The Citizenship statements are not only unhelpful for teachers but are considered by many to be addressing limited objectives.

Curriculum Guidance 7: Environmental Education and Citizenship: Key Stages 3 & 4 are the curriculum statements that inform much of the discussion in this study as it is likely to be within the context of these that much policy was interpreted. Many schools used Curriculum Guidance 7 as a starting point when considering their responsibilities to implement an environmental education policy and some might now be looking at the potential of the Citizenship document.

The Curriculum Guidance 7 document was preceded by a discussion document called Environmental Education from 5 to 16 Curriculum Matters 13 HMSO (1989b). The Department for Education and Science (DES) asked for comments on that paper to be received at the DES by 31 May 1989. Curriculum

Guidance 7 was published in 1990. The time-scale for responding to the discussion document suggests that the claim to be addressing *"heads, teachers, school governors, local education authority members and officers, parents, employers and the wider community outside the school."* was at least unrealistic. This haste may have been the outcome of the complexity of the task facing NCC but there are those who see in it a discourse designed to minimise opportunities for dissent.

Educational change in the UK in the past decade has shifted the balance of control of policy making towards central government and has resulted in increasing bureaucratisation accompanied by an avalanche of policy documents flowing into schools. At this point we need to consider the question, *"What is policy?"* It is easier to say that it is *not* simply an instructional manual than it is to define what it is. Ball (1994, p. 15) maintains that the complexity of policy analysis requires that policy be considered as both *text* and *discourse* but stresses that we should not be misled into believing that policy is a 'thing'. Policies are also processes and outcomes. He suggests that policies as *text* are "... *representations which are encoded in complex ways (via struggles, compromises, authoritative public interpretations and reinterpretations) and decoded in complex ways (via actors' interpretations and meanings in relation to their history, experiences, skills, resources and context) (p. 16).* Policy as *discourse* is more problematical to describe but it *"...may have the effect of redistributing 'voice', so that it does not matter what some people say or think, and only certain voices can be heard as meaningful or authoritative"* (p. 23).

Policy as a 'thing', would be unresponsive to shifting needs but as a process it has strengths and weaknesses. One of the dilemmas for the policy makers is that policy as a process can accommodate changing needs but also allows possible distortion of the policy intent at the implementation stage.

It is unlikely that any text could have one universally understood meaning. At the simplest level, there may be unfamiliar words in key positions and the reader

may not make the effort to assign a meaning. The DfEE/QCA (1999) Citizenship statement refers to the disputed concept of sustainable development.

At another level the text will be assigned meaning within the context of the political agenda, life-experiences and points of view of the writers and readers. The aforementioned reference to sustainable development appears in the programme of study for Key Stage 4 at the end of a list of ten elements relating to *Knowledge and understanding about becoming informed citizens*. The first of these is that pupils should be taught about *the legal and human rights and responsibilities underpinning society and how they relate to citizens, including the role and operation of the criminal and civil justice system* (p. 15). The most clearly described aspects of this programme of study relate to knowledge and understanding of existing societal structures. The implication seems to be that dominant economic, legal and political paradigms are not at issue.

At a more philosophical level there are intense debates about the complex processes involved in assigning meaning to any language, including the possibility that a given text may never have the same intrinsic meaning twice as it migrates through time and from thinker to speaker, listener, writer and reader. Ball (1994) sees policy texts as:

> *"... typically the cannibalised products of multiple (but circumscribed) influences and agendas. There is ad hocery, negotiation and serendipity within the state, within the policy formulation process."* (p. 16)

Readers will filter a text through their own experiences and will modify its meaning subconsciously or deliberately to satisfy their preconceptions. Barthes (1977, p.148) stated the case for the meaning of language to rest entirely with the reader when he wrote that *"... a text's unity lies not in its origin but in its destination ... the birth of the reader must be at the cost of the death of the author."* Writers will also manipulate language to achieve their desired outcome. At each stage of transmission meaning may be distorted or manipulated. When considering any policy statement, what is left unsaid may be more significant than

what is said. Codd (1988) suggested that some policy documents *"... legitimate the power of the state and contribute fundamentally to the 'engineering' of consent. Such texts contain divergent meanings, contradictions and structured omissions, so that different effects are produced on different readers." (p. 235)*

There is a substantial body of literature relating to discourse analysis but, for the purposes of this examination of policy texts, it will be assumed that there is a consensus at any time about the intrinsic meaning of words and that what modifies their meanings in specific circumstances is the intent underlying their use and the context in which they are used.

Pepper (1993; 1996) examines a range of environmental positions through the political lenses of Marxism, Market Liberalism and Traditional Conservatism, positions which have evolved within the Enlightenment discourse and those which are emerging from relativist, post-modern, post-structuralist thinking. Socialist ecology emerged from Marxism and proposes decentralised, regional autonomy and self-sufficiency if possible. Market Liberalism believes that capitalism can thrive in a protected natural environment because producers will supply the environment-friendly goods that consumers want. Traditional Conservatism believes that enlightened control and ownership is the best protection for the environment.

Pepper (1993) also suggests a synthesis of Marxist, anarchist and deep-ecology ideologies into what he saw to be radical green politics. He acknowledges that this still leaves the issue of anthropocentrism unresolved but he does claim that,

> *"Though it does not constitute a complete eco-socialist theory of itself, to cast Marxism's perspectives on the green problematique can at the very least constantly provide an antidote to the vagueness, incoherence, woolly-mindedness and occasional vapidity that can invade mainstream and anarchist green discourse."* (p. 248)

Goldblatt (1996) extended the debate to include a social theory perspective. He examined the roles of capitalism, state socialism and industrialism in creating environmental degradation. He argues that classical social theory has limitations in the environmental context and analyses the work of Giddens, Gorz, Habermas and Beck in attempting to overcome these limitations. He concludes that *"Democracy may be a necessary condition of making the case for sustainability heard, but it does not guarantee that its arguments will be accepted"* (p. 202). This conclusion highlights an as yet intractable dilemma for environmental thinking.

Eckersley (1992) saw a need to address the bias towards anthropocentrism which has suffused much of the ecopolitical debate. She argues that ecocentrism is crucial to a *lasting* solution to the ecological crisis.

> *"This is because it is only in those political communities in which an ecocentric sensibility is widely shared that there will be a general consensus in favour of the kinds of far-reaching, substantive reforms that will protect biological diversity and life-support systems."* (p. 185)

Those who understand 'nature' in a holistic way avoid the conflicts inherent in the dualist nature/human model of the environment. They propose a less polarised approach. Mathews (1995) saw benefits in discussing value in nature within the concept that *"... each viable self does its best, within the terms of its own particular faculties, to further the interests of itself and the ecosystem through which it is defined"* (p. 151).

A further complication arises from consideration of the aesthetics of 'natural' and 'artificial' and to what has 'value' in these two domains. Why do some environmentalists value the natural in mountains and not the artificial in highways? Why are original works of art valued when indistinguishable copies

are not? The question of what we value and why is far from simple to answer and this conflict has repercussions for environmental policy and practice.

In 1949 when discussing the 'value' of landscape, Leopold summarised a land ethic as follows:

> *"It is inconceivable to me that an ethical relation to land can exist without love, respect, and admiration for land, and a high regard for its value. By value, I of course mean something far broader than mere economic value; I mean value in the philosophical sense"* (1968, p. 223).

An emerging strand is to be found in the notion of the Risk Society and social change. From the 1970s onwards there has been a growing debate in this area. Writers like Beck and Giddens attempt to move the social-change debate into a Post-Enlightenment phase. They seek to modify the Enlightenment by incorporating the response of reflexivity. Roots into science are maintained but multiple layers of alternative discourses are superimposed. Lash, Szerszynski & Wynne (1996) extended this debate with an edited collection of writings under the title *Risk, Environment & Modernity - Towards a New Ecology.* Lash *et al.* claim that environmental issues are being translated into policy and practice in ways which can be described as " *epistemologically 'realist', positivistic, disembedded, technological and cognitivist'* at the expense of *"important cultural, social and existential dimensions of the contemporary 'environmental' crisis"* (p. 1). Hajen (1996) agrees when he writes:

> *"The rationalisation and technicisation of ecology are well under way while the popular critique drifts more and more in the direction of the ecologisation of the social"* (p. 266).

Riechard and McGarrity (1994) conducted research amongst early-adolescents which illustrates the gap between risk perception and estimated risk

for societal and environmental hazards. They conclude, *"The long-term goal should be the production of a risk-literate citizenry that demonstrates responsible decision making when faced with societal and environmental hazards"* (p. 22). Rosa (1998) describes risk as being the exposure of something of value to humans (including humans themselves) to a situation where the outcome is uncertain. It is acknowledged that risks have the potential for loss or gain and that risk management implies making causal links between actions and outcomes and then either avoiding or mitigating undesirable consequences.

Risk levels in society and the environment are rising with the increasing interdependence of contemporary, global markets. Risk has always been part of the human experience e.g. hunter/gatherers feared attack from other species; we fear nuclear holocaust. However, there are now significant differences emerging. Historically most risks were local in impact but now they can be what Jaeger et al. (2001) refer to as eco-systemic risks e.g. rain-forest destruction which is a local event with cumulative global potential. In the past risk was likely to be geographically confined (earthquakes) but now it can have global impact (Chernobyl). Expanding production and consumption test social structures and are seen by many to be increasing environmental damage e.g. ozone depletion, toxic exposure and climate change.

Beck (1992) considers the emergence of the risk-society to be what he terms reflexive modernity. He challenges the relevance of the social class distinctions that emerged from classical Marxist and Weberian traditions and contends that risk is now more individualised. One of the characteristics of reflexive modernity is that the growth of knowledge and its application has created uncertainty including ecological uncertainty. Environmental degradation is in part the outcome of the application of scientific knowledge and paradoxically societies are now looking to scientists to undo the damage. He postulates that the principal concern of industrial societies was the production and distribution of goods but the priority of the risk society is the management of perceived risks.

The production and distribution of wealth created inequalities in society and the management of risk has the potential to create different inequalities.

It is clearly possible to manage ecological risk by allowing the risk to be located at some distance. Industrial processes with the potential to damage water courses can be located in areas of high unemployment where the immediate need to financially support a family outweighs any misgivings about the source of income. Risk can also be displaced in time. The risks inherent in actions taken now may not be realised for several generations. Global warming may have catastrophic effects in the years to come.

One limitation of the concept of reflexive modernity in the environmental discourse is that it is possible to interpret risk management in ways that do not address fundamental environmental issues. Risk management may be no more than a process of displacement rather than risk assessment followed by action to avoid or minimise risk where possible. This process merely postpones constructive problem solving. A further limitation is implicit in the contention that risk is now seen to be more individualised. How can individuals take action to manage risk that is beyond their control?

According to Beck (1992) adoption of "risk" as the imprimatur of our age marks a significant refocusing of social thought. The foundation of Western thought since the Enlightenment from Comte, Spencer, Marx, Parsons, Habermas, and others has been the expectation of progress, of continued improvement in the social world. The emergence of a "Risk Society" abruptly challenges that assumption. Giddens (1991) suggests that individuals are losing confidence in the constancy of their social and material surroundings and feel powerless to reduce the risks.

One further barrier to effectively translating environmental education theory into practice is the lack of consensus about how language is used by competing

ideologies. Much of the language in use in the environmental discourse has implicit meanings rooted in a number of paradigms that are fundamentally rational and anthropocentric. Even frequently used terms can be problematical. Pearce, Markandya and Barbier (1989, pp. 28-47) discuss at length a range of possible definitions of *sustainable development,* a term which is increasingly in use. Chaterjee and Finger (1994) claim that the term *sustainable development* implies instrumental rationality and emerges from the dominant development paradigm. Jaeger, Renn, Rosa and Webler (2001) suggest that ecological imperatives require that progress should no longer imply more, larger or quicker. The term sustainable development is frequently used in education policy statements and will be discussed in more detail later in this review.

Environmental education therefore emerges from a number of paradigms. Theoretically, paradigms describe a worldview or a general perspective. They simplify the complexity of the real world and are deeply embedded in the socialisation of individuals telling them what is important, legitimate and reasonable without long philosophical consideration.

Robottom and Hart (1993 p.7) consider paradigms to be characterised by responses at 3 levels

- Ontological (what is the nature of reality?)
- Epistemological (what is the nature of knowledge?)
- Methodological (how is knowledge developed?)

Environmental literature seems to be still struggling to address these three questions so the foundations for developing environmental education are uncertain. However, whilst acknowledging the uncertainties that emerge from the literature as the debates continue, Palmer (1998) suggests, "... *surely it is important to retain goals and terms that have actually served and continue to serve the critical function of assisting teachers and other practitioners to discover overlooked and important dimensions of environmentalism"* (p. 238).

2.5 What is Environmental Education?

This investigation focuses on factors affecting the interpretation and implementation of environmental education policy so there is a need to have some understanding of what is meant by environmental education. Environmental education policy is clearly evolving within a number of educational and environmental discourses some of which are incompatible. It is also a policy that is competing for a place within a crowded curriculum, much of which is statutorily defined in terms of content, time allocation and assessment. Nevertheless, Gayford (1996) claims that the need for its inclusion in the school curriculum is clear to most people. For many teachers, any knowledge or experience of environmental education is likely to be centred on the Qualifications and Curriculum Authority Citizenship (1999) document and the National Curriculum Council's Curriculum Guidance 7 (1990) policy statement. A number of inadequacies of the latter document have been identified. For example Goodall (1994) points to its weakness in failing to address unambiguously the issue of the causes of environmental problems. Even this apparently simple observation raises further complex issues. There is a vociferous body of opinion that many environmental problems are either not problems at all but are merely low points in a natural cycle of events, or are a misinterpretation of scientific data. Indeed Lomborg (2003) presents extensive statistical measures and analyses to support the following conclusion.

> "*We are actually leaving the world a better place than when we got it and this is the really significant point about the real state of the world: that mankind's lot has been vastly improved in every significant measurable field and that is likely to continue to do so.*" (p. 351)

Critics of his work would point out the dominant positivist and anthropocentric paradigms and also would question the confidence with which he predicts future developments. Nevertheless he is not alone in asserting that the case for impending environmental disaster is being over-stated.

So policy-makers on the national and international stages are receiving conflicting advice from experts. Contradictory advice creates an opportunity to manipulate policy; to avoid confronting the issues or to make superficial policy decisions. Opinions differ as to which of these explains the emphasis on the knowledge and skills strands in existing environmental education policy statements. The focus of this study was to understand how and why schools and teachers respond as they do to policy decisions rather than to analyse the agenda of policy makers.

From the complexities of environmental discourses and educational paradigms, emerges the question, "What is environmental education according to policy statements?" For this study it was useful to differentiate this from the question, "What should environmental education be?" in order to understand whether teachers confine understanding to their interpretation of policy statements or have a richer, theoretically-grounded understanding of environmental education. From what has been written it is not easy to answer this question but, if schools are being asked to address this in the curriculum, there is a need for a starting point at least so the next section will look at a number of key policy statements. This section will examine the nature of international statements about environmental education and will follow with a commentary on how these statements have been translated into policy for use in UK schools.

Since the 1965 Keele University conference where environmentalists and educationalists worked together, a succession of international conferences addressed the issue of environmental education. The outcomes begin to answer the question, "What should environmental education be?" The text of the NCC

environmental education policy document Curriculum Guidance 7 is the starting point for answering "What is environmental education?" The claim that this is an environmental education policy as opposed to being essentially an environmental studies policy will be contested.

The nature of environmental education is clearly complex but some common objectives have been established. In 1970 The International Union for the Conservation of Nature and Natural Resources (IUCN) published the following definition.

> *"Environmental education is the process of recognising values and clarifying concepts in order to develop skills and attitudes necessary to understand and appreciate the inter-relatedness among man, his 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."*
> (IUCN, 1970).

This statement acknowledges the need for, and assumes a link between, attitudes, skills and behaviour.

The Belgrade Charter was a Global Framework for environmental education (UNESCO, 1975) which resulted in the first inter-governmental statement of aims and objectives. This identified the need for acquisition of knowledge, skills, values and attitudes that would change behaviour. The influential final report from this conference set out the following three critical goals for environmental education.

1. *"To foster clear awareness of and concern about economic, social, political and ecological interdependence in urban and rural areas.*

2. To provide every person with opportunities to acquire the knowledge, values, attitudes, commitment and skills needed to protect and improve the environment.

3. To create new patterns of behaviour of individuals, groups and society as a whole towards the environment."

The Belgrade Charter: (cited in Palmer & Neal, 1994, p.13)

Once again the attitudes, skills, behaviour link is assumed..

• The Tbilisi Conference (UNESCO, 1977) produced recommendations for formal and informal environmental education curriculum development.

• The World Conservation Strategy (IUCN, 1980) placed an emphasis on global issues and stressed the concept of sustainable development.

• The Tbilisi Plus Ten Conference (UNESCO, 1987) continued to emphasise the critical importance of education in raising environmental awareness and noted the links between environmental quality and the satisfaction of human needs.

• Our Common Future (Brundtland report) considered education to be central to a global agenda requiring a vast campaign to change human attitudes. By 1987, the World Commission on Environment and Development was stating:

"The changes in human attitude that we call for depend on a vast campaign of education, debate and public participation."

WCED, 1987 (cited in Palmer & Neal, 1994, p.14)

The ensuing debate eventually led to the Earth Summit (UNCED) conference in Rio de Janeiro in 1992.

• The Earth Summit (UNCED, 1992) resulted in Agenda 21 which called for a reorientation of education towards sustainable development. Agenda 21 states:

> *"To be effective, environment and development education should deal with the dynamics of both the physical/biological and socio-economic environment and human (which may include spiritual) development, should be integrated in all disciplines, and should employ formal and non-formal methods and effective means of communication"* (para. 36.3).

Here Michael Howard, then UK Secretary of State for the Environment made the following statement:

> *" Where before sustainable development was an abstract concept cherished by specialists, there has (now) been a general acceptance and understanding of the phrase, it is on the political agenda and has penetrated global consciousness... It is now something the people of the world are acutely aware of and I believe will hold their leaders to."*
> (The Guardian, 15 June 1992.)

With this statement UK political leaders acknowledged the concept of sustainable development. If UNCED has had any long-term effect, it is that environmental issues are no longer confined to a small number of individuals who are considered to be eccentrics. It has now been acknowledged that all sections of society in all communities have a part to play in redefining the economic, social and political structures that underpin our lives.

UNCED identified education as being of critical importance to this process. The challenge now facing politicians is to translate the rhetoric into action. The key aspect of Michael Howard's comments may prove to be, *"It is now something the people of the world are acutely aware of and...will hold their leaders to."*

In the aftermath of these conferences, Palmer (1998) offered the following summative statement:

> *"Environmental education, in its broadest sense, is about 'empowerment' and developing a sense of 'ownership', improving the capacity for people to address environment and development issues in their own communities. It is about touching people's beliefs and attitudes so that they* ***want*** *to live sustainably, providing sufficient information to support these beliefs, and to translate attitudes and values into action"* (p.274).

An effective environmental education policy to be introduced into schools is recognised as being an essential prerequisite for the shifts in attitudes that have been identified to successfully address the objectives agreed at international conferences. It is clear that environmental education must go far beyond the concept of managing ecosystems. It must embrace understanding of economic, political and social systems and development of skills to change or abandon systems that do not directly support sustainable societies. It must promote the concept of social justice for all.

However, as Sterling (1992, p. 7) cautioned, "*Even the most enlightened government is wary of far-reaching environmental policy that is too far ahead of public consensus, whereas an unenlightened one needs the pressure of an aware public.*" The challenge to education is to raise awareness to the point where politicians can feel that the climate for change exists to the extent that it will not endanger their power-base. Within the existing political and economic structures in developed economies politicians are still largely confined to understanding healthy economies as being those which continue to deliver economic growth. Sustainable development as a concept embraces its own tensions and will only be refined as societies become more aware of the implications of political decision-making, the interdependence of economies, the consequences of short-term decision-making and the potential for building a global economy based on eco-

economic principles. Effective environmental education will need to nourish an increasingly informed interaction between political decision-making and public concern.

In principle environmental education has now become a formal element of the curriculum in schools and colleges across the world but few would disagree that there remain many barriers to the successful implementation of policies which will have a positive global impact. The problems begin at the policy-making stage, proliferate through the implementation stage and are arguably at their most complex when considering the desired outcomes. So what impact have these conflicts had on the translation of the emerging international consensus about environmental education goals (What should environmental education be?) into effective policy for use in schools (What is environmental education?)?

As governments were making commitments on an international stage, the UK Government was making major reforms in education, including curriculum content. The outcomes for environmental education have included:

- 1990, *Curriculum Guidance 7: Environmental Education*, NCC.
- 1991, *Environmental Education: the Vital Link*, RSPB.
- 1996, *Teaching Environmental Matters through the National Curriculum*, SCAA.
- 1998, *Education for citizenship and the teaching of democracy in schools: Final report of the Advisory Group on Citizenship*, London: QCA.
- 1999, *Sustainable Development Education: Teacher Education Specification*, London: Forum for the Future.
- 2002 *Citizenship at Key Stages 3 & 4*, London: Qualifications and Curriculum Authority.

Publication of the NCC Curriculum Guidance 7: Environmental Education document followed soon after the introduction of the National Curriculum and is

the one that is mentioned by teachers who know of the existence of policy statements. The document is constructed around three discourses commonly described as:

- Education *about* the environment which emphasises knowledge about ecological, economic and political systems and processes.
- Education *through* the environment which uses the environment as the medium for education.
- Education *for* the environment which has a values/ attitudes-based agenda that seeks to change behaviour.

Enquiries were made by the researcher during the process of a review of the National Curriculum. Communication from the Department for Education and Employment about the possible status of environmental education drew the response that *"(t)he Secretary of State has made a commitment to ensure that a light touch change will be made to the National Curriculum."* (Crick, J., pers. comm., 26/11/98). There was little to suggest that the existing position of environmental education in the curriculum would be fundamentally changed and indeed, when the review was published, environmental education received no mention.

Many environmental education researchers consider education *for* the environment to be the critical discourse and consider that this policy strand, which addresses values and attitudes, has been displaced by the other two (Fien, 1993). There is no clear evidence that the outcomes of education *about* and *through* the environment have links with the objectives of education *for* the environment. Indeed, there is no firm evidence that young people with a high degree of environmental awareness reflect this in their actions. Newhouse (1990), in discussing attitude-behaviour discrepancy studies, points out that too little is known about the links between attitudes and behaviour and concludes that environmental educators might best join forces with values/moral educators.

The briefest examination of policy statements about environmental education illustrates a potentially confusing range of terms and concepts in use including environmental education, development education, sustainable development education, environmental education for sustainable development and education for the development of sustainable societies. Over a period of time they have been variously used as interchangeable or have been subjected to protracted debate about precisely how they differ. However, by 1996 the Department for Education and Employment (DfEE) was outlining strategies for environmental education in the 21st century and referred to ... *the concepts of sustainable development and responsible global citizenship.* The terminology in use in policy documents was beginning to change and *education for sustainable development* was in increasing use. There are a number of inherent difficulties in the use of this term.

Part of the appeal of *sustainable development* is that it apparently reconciles two attractive but potentially conflicting ideas. The first is conservation or preservation of aspects of nature that are currently endangered by pollution or depletion. The second is the ongoing desire of humans to 'develop' in the sense of having more or better. Bonnett (2003, p. 682) suggests three problematics of the term:

- *Semantic:* Society can interpret it in its own best interests so Western style economies can use it "... *to affect deep concern for the environment while pursuing sustainable economic growth in a way that shows scant regard for a more broadly conceived ecological perspective.*"
- *Ethical:* Assumptions are made about the relationship between humans and nature and whether the underlying ethic should be anthropocentric, biocentric or something different. The fundamental issue of how any ethical dimension should be grounded is unresolved. "*There is also the issue of the nature of a moral relationship with future generations.*"

- *Epistomological:* Our imperfect knowledge of the complexity of both natural and social systems is such that we may not be in a position to decide which actions are appropriate. The question remains, "... *how does one construct a policy in a situation where in practice it is impossible to avoid action that* might *have detrimental consequences for the environment – and for future generations, knowledge of whose needs is also problematical?"*

Jickling (1991) considered that *education for sustainable development* is contrary to his concept of education for the following reasons:

- it suggests that education then becomes training which is the acquisition of skills and abilities which have instrumental connotations and can technically occur through repetition and practice without leading to understanding,
- the concept of sustainable development is contested, which makes teaching for it doubtful at least,
- the prescription of some particular outlook conflicts with the development of autonomous thinking.

Sterling (1992) partially circumvents this issue by using the term *education for sustainability.* Sauvé (1996) suggests the concept of *education for the development of responsible societies.* Despite the lack of clarity, Gayford (1998) points out the need for teachers who are involved in any aspect of environmental education to understand the ideas that are being debated among environmentalists, politicians, academics and planners. He is unsure of how this can be realistically achieved but links it to professional development.

The term most commonly appearing in recent curriculum policy statements for UK schools is *sustainable development.* Although this term is problematical, Pearce, Markandya & Barbier (1989, pp. 29-49) suggest that prefixing *development* with *sustainable* makes an important distinction between economic development and economic growth. Economic growth is simply an increase over

time in per capita GNP but economic development is, they suggest, a wider concept that embraces the achievement of a set of social goals. These social goals include intergenerational equity. This opens the debate about the relative merits of natural and man-made capital and whether bequeathing an aggregate of these could be considered to be equitable. Deep ecologists go further and suggest GNP should not be a factor in sustainable development. Naess (1989) suggests that there is a growing body of economic literature that supports the views of environmentalists. Bonnett (2003, p. 690) cautions against "... *proceeding on the basis of easy – because vague – assumptions about the goals of sustainable development, as though it were a policy whose chief problems are of implementation rather then of meaning and motive.*" Clearly the concept of sustainable development is open to interpretation from a number of perspectives, some of which may be damaging to the natural environment. It is nevertheless the term being used so it becomes essential to have a clearer understanding of its use.

As an attempt to make a useful definition that accommodates its frequently rationalist and utilitarian current usage whilst allowing for its evolution into a socially transformative usage, the following is suggested.

> *Education for sustainable development seeks to develop attributes in individuals that will empower them to live within the ecological capacity of the planet whilst allowing everyone access to the conditions needed for physical and emotional well being.*

This definition circumvents the theoretical economic growth/social development debate about sustainable development and, more importantly in the context of this study, is a concise statement for use in schools.

2.6 Teacher thinking on education and environmental education.

It is being increasingly recognised in recent years that educational reform and teacher development are unlikely to take place effectively if teacher thinking and beliefs about education are marginalised in the way that was demonstrated by their exclusion from the processes surrounding the Education Reform Act (1988). Bell & Gilbert (1996, p. 15) consider that the developmental process must involve "... *not only the use of new teaching activities in the classroom* ***but also*** *the development of the beliefs and conceptions underlying the actions.*"

What is clear from the preceding sections of literature review is that there is a mismatch between theory, policy and practice and that existing policy is erratically operationalised. In discussing the rhetoric/reality gap for environmental education Palmer (1998, p. 119) writes, *"There is an ever-widening range of themes pursued by environmental education researchers with increasing emphasis being placed on the links between empirical research and the improvement of practice."*

Improvement of practice based on *empirical research* will be at least partially dependent on a structured Continuing Professional Development (CPD) process. Shallcross, O'Loan and Hui (2000) surveyed 96 UK junior schools and concluded that CPD in environmental/sustainability education needs to have a significant school focus. They pointed out that in 1997 much control of CPD was handed over to the Teacher Training Agency (TTA) and that neither environmental education nor sustainability education were included in the 8 areas identified by the TTA for funding. It seems that the links between empirical research and improving practice for environmental education are not as yet being given a high priority by the TTA. A further concern is that research may even be addressing inappropriate issues by focusing on the goals of environmental education rather than the process of improving practice. In the context of reorientating environmental education from a positivist to a socially critical paradigm, Robottom (1987, pp. 114-115) suggested the following criteria for professional development.

Professional development in environmental education should be:

- inquiry-based (encouraging participation at all levels)
- participatory and practice-based
- critical
- community-based
- collaborative.

The following questions are beginning to be addressed by recent research into teacher experiences and thoughts about environmental education:

- What are teachers articulating about their current practice?
- What are the perceived barriers to developing their practice?
- How can their needs be met?
- What concerns are teachers expressing about research?

At the end of the pilot stage of research being carried out with secondary school geography teachers, Rickinson & Robinson (1999) reflected on the methodological issues for both researcher and teachers in the project. A key conclusion was that more time should be allowed to create an appropriate climate for the work. They felt that this would provide time for reducing concerns about procedures and for "... *ongoing discussions about the nature of the research and its ethical aspects*" (p. 88). They also noted the importance attached by the teacher to professional development as an outcome of the research. This acknowledged the ever-present issue of how research findings can be disseminated within the school. Rickinson & Robinson felt that co-writing was one approach to more effective collaboration and discussion.

Robertson & Krugly-Smolska (1997) intensively interviewed and observed 3 committed environmental education teachers and found a commonality of belief that education is *'moving more and more towards specific content'* and that *'heavy duty curriculum'* (p. 319) is making it difficult to incorporate aspects of environmental education. They found that, "*Teachers feel the pressures of accountability for their actions and are often reluctant to risk beyond the safety of an endorsed curriculum*"

and *"Teachers still have obstacles with which to contend beyond the complexities of environmental education theory"* (p. 323). They concluded that researchers need to take account of the immediate concerns of teachers' practice; that the complexities of environmental education theory need to be addressed to identify what can realistically be achieved in schools and that research should inform curriculum development and policy to make a convincing case for giving teachers explicit permission to engage with the ideas generated by theorists.

Also in 1997, Wals & Alblas carried out a case study with 4 teachers from secondary education and found that a strong concern was the lack of identity for environmental education if it is scattered throughout the curriculum with no clear links. The teachers in this study felt that there was a need to design *"... clear learning pathways that reinforce the environmental dimension of teaching and learning throughout the curriculum"* (p.259). These teachers were clearly expressing a need to feel that they were operating within a structure that had some degree of definition.

Corney (1998, 2000) reported a case study using *interpretive inquiry and qualitative data* to explore the perceptions about teaching and teaching environmental issues in geography of 3 student geography teachers as they began a PGCE course and how their course experiences influenced their thoughts and practice later in the course. All 3 student teachers' geographical conceptions converged on a people-environment interpretation and included a values dimension in both their thinking and practice. The study revealed two major and interrelated issues. Firstly, student teachers began their course with preconceptions of geography and teaching that remained powerful influences throughout the course. Secondly, it is suggested that there is a need to further develop a collaborative Higher Education/School partnership where planned specific experiences emphasise student teacher reflection and where programmes are evaluated in terms of "... *student teacher development of practice and understanding"* (p. 323). Corney stresses the importance of *"... reflection in contributing to student teacher conceptions ... given the competency based model of*

teacher training which underlies current national requirements (DfEE, 1997) and the relatively small part which reflection seems to play in these (p. 322). This study highlights the need for reflection to become a core part of teacher practice but acknowledges the difficulty of embedding that within current structures.

In 2000 Gayford reported the outcomes of a qualitative study where teachers of science were involved in focus group discussion about the teaching of biodiversity. These teachers had varying experience but proven commitment to such teaching. Key findings included that the constraints of time and the demands of the science curriculum meant that essential curriculum links were not being made and also that *"(t)he process of focused discussion among peers who shared similar teaching experiences enable teachers to identify closely with the issues involved and work towards new understandings of pedagogical concerns"* (p. 359).

Dyment (2005) surveyed administrators, teachers and parents in 45 Canadian schools and followed up with 21 interviews about their use of green school grounds as outdoor learning sites. Her findings were that such grounds are used regularly by physical education and science teaching but much less for other subject areas. Participants in the Dyment study indicated that curriculum constraints were major barriers to working outdoors but they were more likely to do so if there were clear, mandated links. This study also revealed that teachers are often limited by assumptions about their role as experts-in-knowledge and also by the perception that standardised testing has reinforced the classroom-based orientation of teaching. These assumptions "*...sit uneasily with the realities of outdoor learning where the environment is less easy to control, where learning outcomes are less predictable and not necessarily measurable, and where learning experiences are more fully embodied*" (p. 38). One implication here is that teachers feel less confident about engaging with curriculum where they have less control over both curriculum content and the physical environment in which teaching and learning take place. The sanctuary of the classroom and a knowledge-based curriculum are understandably

difficult to vacate if teachers feel they are risk-taking by doing so. If CPD is to have a significant impact it will need to address this anxiety.

Cotton (2006a, 2006b) reported on a series of semi-structured interviews with 3 experienced geography teachers in English secondary schools to explore their beliefs and attitudes relating to teaching controversial environmental issues. These were 3 teachers engaged specifically with curriculum that formed a key part of examination requirements and that also addressed controversial issues. A key finding was that these teachers believed that they should adopt the 'neutral teacher' role and should present a 'balanced' view of the issues. There was no evidence that they were embracing the 'committed teacher' role that might best generate a socially critical model of environmental education. Cotton pointed out that these were teachers with clear opportunities to promote the more radical aspects of environmental education but they chose not to promote specific pro-environmental attitudes. She continues by hypothesising that teachers in other curriculum areas may be even more constrained in this respect.

The 3 teachers in the Cotton study found that adopting a neutral role and presenting balanced views were problematical. This quest for balance and neutrality may not be desirable. Most teachers are aware of the concept of the 'hidden curriculum' but may not recognise its manifestations. The danger is that pupils cannot challenge the hidden curriculum in the way that they can challenge overt expressions of teachers' opinions. Nevertheless the belief that controversial issues must be addressed in a balanced way was dominant. This concern to maintain a balance when engaging with controversial issues is unsurprising if teachers are bounded by the concept of authority-in-knowledge. A reluctance to be a 'committed teacher' in this context is likely to be reinforced by external forces that prescribe in detail much curriculum content and the positivist modes of assessment.

This dissertation is an account of research that was being undertaken at the same time as some of that reported above. In many ways it is complementary and extends

the accumulating body of knowledge. Indeed it begins to address the speculative hypothesis suggested by Cotton (2006a) that teachers of disciplines other than geography may be even more constrained when dealing with controversial issues. The participants in this study were from a wider range of subject disciplines and from a number of schools. In some ways that created difficulties that resulted in a reorientation of the research. These are discussed in Section 4.1. In other ways that could be seen to be a strength of the research. What this work does do is begin to shed light on the issues that are relevant if environmental education is to develop in schools in its socially reforming manifestation which is where all staff would need to play a part.

Chapter 3: Research design

3.1 Orientation of researcher

> *"All research is influenced by the ideology of the researcher; sometimes the researcher is also a major actor.... It is good practice to provide a clear statement of methodological stance in terms of the values and beliefs of the researcher"* (BERA, 2000, p. 5).

The focus on environmental education provision emerges from my personal and professional experiences. My personal involvement and interest in environmental education issues evolved over much of my life. My earliest memories are of a rural childhood within a family that actively engaged with activities outdoors. We were encouraged to cultivate a garden, to care for our own animals and we spent much of our time in a 'natural' environment. The researcher's personal experiences therefore appear to support Palmer and Suggate (1996) who suggested that the most significant life experience identified, which leads to a commitment to environmental concerns, is outdoor childhood experience.

For 25 years I was also a teacher of mathematics in three LEA comprehensive schools with involvement in attempts to introduce environmental education initiatives into one of these schools in particular. This involvement spanned the 1988 Education Reform Act and the introduction of the National Curriculum.

Three aspects of the teaching experience are significant. Firstly, at the beginning of my teaching career, my beliefs about the nature of many aspects of education had been formed at a subconscious level. There was no apparent reason to suppose that there could be a school experience that was fundamentally

different from my own. My early career reflected and reproduced the culture in which I had been educated. I accepted the model where teachers are expected to be the 'experts' and that school pupils 'received' knowledge from those experts. The knowledge was defined within the fact-based scientific/ technocratic paradigm. The concept of teacher and pupil entering a cultural, intellectual and psychological interaction evaded articulation. The realisation that such is the case, even within the positivist discipline of mathematics, evolved over several years. It became increasingly evident that my mathematics pupils appeared to be more motivated to engage with the curriculum when they participated in investigational and problem-solving processes. Transmission of facts alone did not enable the pupil to search for the questions to ask and to know how to begin to formulate solutions.

Paradoxically, the educational paradigm shift I was undergoing took place within the context of fundamental structural changes to education that began with the James Callaghan speech at Ruskin College in 1976 and culminated in the 1988 Education Reform Act. Many of these changes legislated formally, or by implication, against my understanding of the concept of education.

Secondly, ten years of attempting to embed environmental education into the ethos of one school culminated in the realisation that there were structural obstacles that could not be circumvented within the existing context. A colleague and I were the driving forces behind these efforts with the occasional involvement of two others. This was in a state comprehensive school whose staffing level ranged between 65 and 75 with pupil numbers of 1300 to 1500. Environmental education remained marginalized in this school. An unwilling curriculum co-ordinator was appointed at one point but claimed no expertise and had no intention of fulfilling the role unless under pressure to do so (pers. comm.). His appointment seemed to be a pragmatic response to a problem arising from a radical restructuring that took place in the school when a new head teacher was appointed. Environmental education activities in this school were still classified

as extra-curricular activities at the end of the ten years of attempting to transform the school ethos.

For the people who initiated these attempts at curriculum development, growing demands made on their time by the 1988 Education Reform Act conspired to make their efforts unsustainable and their vision and experience was lost to whole-school curriculum development. I have now left the school and my colleague has indicated his disillusionment at the lack of positive response to our initiative (pers. comm.).

During this period I was completing an MA in Education Management with a substantial proportion of the content focused on aspects of environmental education provision. What had hitherto been practical experience could then be interpreted within appropriate theoretical contexts. This was a transforming experience and was the catalyst for my embarking on this study.

Finally, following the Education Reform Act 1988, I began to feel that many newly qualified teachers seemed to have an attitude to their role that was different in some ways from mine. Discussion with similarly experienced colleagues suggested that they felt the same. It is possible that this was merely an expression of the phenomenon of impatience with lack of experience but we felt that that was not the case. We speculated about the perceived differences and felt that somehow the sense of a degree of autonomy and the opportunities for creativity were being lost. If this is the case, then many teachers will find it difficult to interpret and implement aspects of the curriculum that are non-statutory or loosely defined. This would have considerable implications for environmental education provision that is both non-statutory and has little clear definition in government guidance documents.

. My personal convictions are ideologically radical. My pragmatic position however is that of reform rather than revolution towards a socially critical model

of education. My environmental position is probably best described as an imperfect deep ecologist believing in the 'intrinsic' rather than merely the 'instrumental' value of nature (Huckle, 1983). If, despite my efforts to avoid undue influence, my personal convictions have distorted some meanings, I hope that will be transparent.

3.2 The Research Approach

> *"Our guess is that it is only if we squarely face the fact that we are not really clear either what educational research should be about, or what its appropriate methods are, that we shall even begin to take the first steps towards a better path"*
> Wilson and Wilson (1998, p.356).

For some years there has been an ongoing debate relating to the nature and value of much of the educational research that has taken place recently. This is illustrated, for example, by the response from Hammersley (1997) in the British Educational Research Journal to the Hargreaves, D. (1996) Teacher Training Agency (TTA) lecture and by the OfSTED-commissioned research carried out by Tooley and Darby (1998). In his lecture to the TTA, Hargreaves claimed that much education research is not evidence-based, is of no practical use to classroom teachers and does little to add to a cumulative body of education knowledge. He continues by suggesting that evidence-based medical research is a model that might be adopted by education researchers. Hammersley (1997) acknowledges the limitations of current education research but presents his case that Hargreaves' solution is unlikely to be the remedy and that the move towards evidence-based accountability is more likely to further *"... demoralise and undermine the professional judgement of practitioners, in occupations that have already been seriously damaged in these respects"* (p.154). He also argues that the audience for educational research is much wider than that of teachers and sees its main

functions as being "... *to inform public debates about educational issues: to provide information for anyone concerned with those issues, not only teachers but also parents, governors, administrators, pressure groups, politicians and citizens generally.*" (p. 154).

It is also worth noting that Hammersley points out that most education research is carried out by ex-teachers (p.150). This suggests that, in many cases, education research is informed in part by the teaching experience of the researchers. The question *"What's the Use of Research in Environmental Education?"* was addressed in a paper by Rickinson (2003). He challenged "... *simplistic notions of research dissemination...*" and moved "... *the question of research utilisation into wider debates about professional learning, research-engaged schools, pedagogical change and collaborative enquiry.*" He concluded:

> *"We need to learn how to work with others to develop better shared understandings of what these findings and implications mean in different practical and conceptual contexts"* (p. 17).

In 1997 the Teacher Training Agency funded 27 classroom-based projects to be carried out by teachers. They were described by the Agency as being "... *in line with its commitment to transform teaching into a profession guided and informed by high quality practical research.*" There appears to be an agenda to confine research within a rational paradigm that attempts to measure educational phenomena. Research that is interpretative is marginalised. The effect would be to exclude research from areas that cannot be measured in some way. For environmental education research that seeks to understand subjective values, attitudes and experiences, a shift to a positivist paradigm with generic research guidelines would impoverish understanding of the complex interplay between teacher beliefs about their roles and responsibilities and the way that they implement policy.

This growing pressure for education research to be applied research that conforms to what are seen to be rigorous methodologies and methods has resulted in the outcomes of interpretative methods being questioned. However, an appraisal of the literature relating to educational research in general, and environmental education research in particular, indicates that there is a perceived need to carry out qualitative research (Robottom & Hart, 1993; Fien & Hillcoat, 1996). The central endeavour of qualitative research is seen to be to seek to *"understand the subjective world of human experience"* (Palmer, 1998, p.114). Since 'education *for* the environment' addresses the values and attitudes that frame the behaviour of individuals, we need to find a way to understand how these are developed if we seek to modify them.

. The disadvantage of generic guidelines is summed up by Hart (2000) as follows:

> *"Criteria of reasonableness, trial-and-error learning, and the use of pluralistic epistemologies may be used to decide among knowledge claims. Methods are judged for their usefulness and for their success in producing meaningful understanding about the questions of the inquiry; they are not judged according to a standard of tautological statements and deductive logic. What methods are appropriate can only be answered by reference to the questions and the community who must be convinced"* (p. 42).

When a researcher engages in qualitative research, they become what Lincoln and Guba (1985) term the *human-as-instrument* and adopt a posture of *indwelling*. The human-as-instrument is the only instrument that is flexible enough to understand the constantly changing human experience with its subtleties and complexities. Maykut and Morehouse (2001) suggest that, for qualitative researchers, indwelling implies empathy with the actors in a situation and a reflective approach to the research experience and the meanings emerging from the data.

This research was conducted within the phenomenological or qualitative paradigm. Maykut and Morehouse (2001, p. 12) adapted the work of Lincoln and Guba (1985) to describe six postulates of this approach. These are described briefly with acknowledgement of some of the implications for this study.

1. There are multiple realities in the way that the world works. *"These realities are socio-psychological constructions forming an integrated whole."* The teachers in this study will have constructed their professional reality within a range of contexts. They will bring to their role beliefs formed within the complex web of their experiences. There will be common factors that result in interconnections between individuals and there will be factors unique to individuals. Each will have a sense of what their role is (they will believe they know how their world works) but, as with many of us, few will have considered why they understand it to be so.

2. *"The knower and the known are interdependent."* For both researcher and participant, what they know about a situation cannot be separated from the knowledge they have constructed and used to define or describe it. In this case the researcher could draw on knowledge constructed from extensive experience as a classroom teacher but that knowledge was constructed within experience which differed in many ways from that of the participants in the study. The researcher spent many years as a teacher of mathematics, which was considered to be a high-status subject. The national curriculum reinforced that status.

3. *"Values mediate and shape what is understood."* There are two implications for this study. Firstly, teachers' practice is influenced by the values they bring to the construction of their role. This has particular significance when they are interpreting aspects of the school curriculum, such as environmental education, that are not clearly defined. Secondly an observer of social action interprets it within his/her own system of beliefs. (One person's terrorist is another's freedom

fighter.) Data collection and analysis in this type of research should take place with this in mind and the researcher needs to be constantly searching for the values underpinning the data.

4. *"Events shape each other. Multidirectional relationships can be discovered."* Causal links are not the principal focus of qualitative research. The underlying beliefs of a teacher's practice will be many and varied. There may be a causal link between statutory requirements and their practice, e.g. legislation specifies content and, to a considerable degree, mode of delivery for the numeracy hour. In the case of environmental education there are no statutory requirements and other, clearly definable causal links may not exist. The underlying motivations for teachers who engage with environmental education may be not be easy to uncover.

5. *"Only tentative explanations for one time and place are possible".* (This contrasts with the quantitative researcher's endeavour to eliminate unique aspects of a situation in order to generalise to the largest number of subjects and experiments). What is possible is that the data-analysis will allow the researcher to build substantive theory, in this case theory about influences on environmental education provision. Formal theory that might be generalised to understand what influences all curriculum content and delivery may also emerge.

6. *"Generally, the phenomenologist seeks to discover or uncover propositions."* The researcher in this case is attempting to uncover how teacher beliefs impact on environmental education provision where there is no statutory policy statement.

These postulates show how the qualitative research paradigm is designed to understand the complexities of social situations. The dominant, positivist paradigm assumes concepts of one reality, objectivity, sequential events, causal links and values-free knowledge. Human behaviour can vary considerably between individuals where all are faced with what appears to be the same

situation. A qualitative research method acknowledges a range of realities. This study examines human behaviour in an education setting and the qualitative paradigm has most to offer as a research methodology. A Grounded Theory approach has been used.

3.3 Grounded Theory

Grounded theory is an aspect of qualitative research first described by Glaser and Strauss in 1967. A grounded theory approach to research uses the concept that theory will emerge from the data as a continuous and contiguous process. It assumes that theory is a developing process rather than a fixed end-point. The researcher is engaged in a process where simultaneous collection, coding and analysis of data take place. Theory begins to emerge and is the controller of the next stage of the data collection process. Because concurrent collection and analysis of data take place, gaps in the data can emerge whilst the researcher is still in a position to collect further data. (Glaser & Strauss, 1967; Miles & Huberman, 1984).

As immersion in the research situation progresses, the data become increasingly saturated and the emerging theory more refined (Glaser, 1978; Strauss and Corbin, 1998). Saturation is described by Strauss and Corbin (1998) as being "... *a matter of reaching the point in the research where collecting additional data seems counterproductive; the "new" that is uncovered does not add that much more to the explanation at this time*" (p. 136).

Grounded theory uses open and eclectic methods that can be varied and modified as the research progresses in response to the changing contexts within the study. Underpinning these methods is the search for understanding of the phenomena being researched (Anderson, 1990; Tilbury & Walford, 1996). The researcher has no preconceived theory to be tested but is looking for the theory

that is emerging from the data. Grounded theory is a search for insight into a situation and is therefore appropriate for use when researching social phenomena that are by nature shifting phenomena with depth and complexity that cannot be uncovered by superficial exploration of the situation.

Tilbury and Walford (1996) justify the use of a grounded theory approach (Glaser & Strauss, 1967; Strauss & Corbin, 1990; Denzin & Lincoln, 1994) for research into environmental education by pointing out that *"(t)his qualitative, naturalistic, flexible, interpretive, eclectic and generative research method can add a new dimension to the research..."* and *"...may provide fresh insight into why the goals of environmental education are still not effectively developed some twenty-five years after its first appearance in the school curriculum."* (p.62).

Some critics of education research suggest that much of it is flawed in its focus, the conduct of the research or the eventual presentation. Hargreaves (1996a, p.7) suggests a considerable amount makes no serious contribution to knowledge or theory; is irrelevant to practice; is uncoordinated with other research and is confined to obscure publications. Tooley and Darby (1998) explored this claim with a critique of 264 articles in 4 journals. They reported concerns about methodological issues surrounding the conduct and presentation of qualitative research. They expressed their concern about sampling bias and lack of triangulation thus:

"Indeed, the intimate connection between these methodological problems and the issue of partisanship became clear – if a researcher wished for a particular partisan position to come across, then he or she would be well advised to steer clear of triangulation and not worry about sampling" (p. 74).

To overcome such reservations about this type of research, the researcher needs to address the question, "What steps can be taken to ensure that what is reported is a valid account of what took place?" Triangulation, reflexivity and

respondent validation are methods that can be employed to strengthen the validity of qualitative research. Triangulation will seek to find confirmation of an interpretation in another source of data. Reflexivity involves the researcher in continually thinking about his/her role in the research process and also in ensuring that the report of the data collection and analysis procedures are sufficiently transparent for the reader to assess the credibility of the work. Respondent validation seeks confirmation of interpretation or emerging theory from participants in the study.

When assessing the validity of claims made in this type of research, Glaser and Strauss (1967) considered the concepts of credibility, plausibility and trustworthiness to be appropriate to apply and asserted that grounded theory generates substantive theory which *'... is "accurate" in fit and relevance to the area it purports to explain.'* (p. 224). They claim that substantive theory generated using qualitative methods is often an end product for several reasons, the most important of these being that social structures undergo continuous change. Older structures *"... frequently take on new dimensions before highly rigorous research can be accomplished."* (p. 235). They also claim that, once substantive theory has been generated, it can be applied *in* situations as well as *to* them. *"Thus people in situations for which a grounded theory has been generated can apply it in the natural course of daily events."* (p.249). It follows that carefully -structured grounded theory should not generate theory that confirms the reservations about education research expressed by Hargreaves (1996a) and Tooley & Darby (1998).

3.4 Sampling

This research was carried out largely in Merseyside and Cumbrian Local Education Authority (LEA) secondary schools with additional data from Postgraduate Certificate in Education (PGCE) students who were embarking on

their year of professional skills training. These are some of the people who will become the next generation of teachers and will be entering the profession via a subject-specialist degree, followed by a professional skills year that is dominated by practical competencies. Their ideological positions may have been more penetrable since they were not yet struggling with the organisational issues of curriculum delivery.

Cumbria and Merseyside were chosen because they differ in many ways and had the potential to afford opportunities for maximum variation sampling (Maykut and Morehouse, 2001, p.57). They were also readily accessible to the researcher. Maximum variation sampling seeks to select people or situations considered to be representative of the range that might be found in the research context. Analysis of preliminary data will indicate where to collect further data to create a deeper understanding of the research phenomenon. There were three participating schools in each of the two research areas and this created opportunities to build a depth of understanding as subsequent schools were visited. Glaser and Strauss (1976, p. 45-77) call this *"theoretical sampling"* and assert that it *"allows the researcher to build and broaden theoretical insights in the ongoing process of data collection and analysis"*. This process of refining the data collection and analysis as the research unfolds is known as *emergent.*

Schools within Cumbria LEA were chosen for two reasons. Firstly, the LEA was launching a pilot environmental education project in some of its schools. Three secondary schools were taking part in this and it was reasonable to assume that they have a commitment to environmental education curriculum development since they were prepared to accommodate the inevitable disruption caused by releasing staff for training sessions. Secondly, Cumbria is a largely rural authority and the contrast with the largely urban Merseyside area supported maximum variation sampling.

In practice, sampling within these two areas was of necessity opportunistic sampling (Patton, 1990). The choice of Cumbrian schools was predetermined by their participation in the pilot environmental education project. Initial contact with the co-ordinator of the pilot project was made by letter. This was followed by a telephone conversation to discuss the aims and objectives of the study. After obtaining provisional consent from the co-ordinator, the LEA officer with responsibility for the pilot project was approached by letter and telephone. Consent was readily given. On this occasion, the involvement and perspective of the researcher were seen by both co-ordinator and LEA officer to have potential benefits for the project. Initial access to this pilot project and the three participating secondary schools was easily negotiated.

The choice of Merseyside schools was severely limited by the refusal of the majority of schools to participate in this research to the extent that the researcher had to rely on personal contacts to generate anything more than the initial contact. First contact was made with all state sector secondary schools in the Merseyside area by sending a letter with an accompanying short survey and stamped addressed envelope. The survey was planned to collect some data about environmental education provision in these schools and also to establish whether they were prepared to participate in the study. This refusal to take part in research highlights several issues relating to education research.

One Merseyside head-teacher responded to the initial survey of this research with a photo-copied article from one of the head-teachers' professional journals to "*illustrate my dilemma*". Its contents presented a cynical view of education researchers. In the context of replying to a courteous request, the contents of the article could be interpreted as being offensive about research and researchers. Ironically, it would have taken less time to complete the survey. Another head-teacher was quite specific that he did not want his staff to have to undertake any extra work. These two examples are indicative of what appears to be a growing

schism between practitioners and researchers and this clearly has fundamental implications for future educational research.

Criticism of the value of much education research is entering the public arena via the press and it is possible that this was an additional reason for schools' reluctance to engage in the research process. This may be a reflection of Shacklock's (1998) contention that critique of what he calls *Fast Capitalist Educational Change* is in danger of being overwhelmed by the pace, volume and mode of transmission of such reform. Wallace (1993, p.355), when discussing the role of the media in education policy, claims that they may collude with a politically generated discourse of derision by stripping education policy of its context and perhaps promoting a myth. He writes, " *Government politicians may attempt to use the media to soften up the target of policy prior to implementation, to create a climate of acceptance for it, and to isolate potential adversaries ...".*

For this research, initial contacts were made with Merseyside Local Education Authorities (LEAs) to discuss consent for research to take place. None of the five LEAs had existing procedures for supporting research and all five expect researchers to negotiate with individual head-teachers. A co-ordinator at this level might facilitate the research process and also minimise the number of contacts made with individual head-teachers.

3.4.1 Cumbria

The initial data collection in the Cumbrian schools was of necessity the first stage (January to October, 1998) in this project because it had to coincide with the launch and progression of the Cumbrian Education 21 pilot project. Three secondary schools were taking part and the project leader, steering group, LEA advisor and head-teachers agreed to take part in the research. Initial access to these schools for research purposes was negotiated without problems. This may

be because they are located in a geographical area that is not saturated with demands from researchers.

In some ways these three schools might appear to exemplify minimum rather than maximum variation (Maykut & Morehouse, 1994). They are all LEA mixed comprehensive schools. They are all situated in small market towns with an intake covering a large rural area and it was safe to assume that the schools' management teams have some commitment to environmental education provision as they volunteered to take part in the pilot project.

However, one of these schools is situated in close proximity to a large nuclear installation and many of the pupils are from families where the principal income is from employment in the nuclear industry. This is one of the few employers in a large geographical area with opportunities for highly qualified, high earning individuals. The second is situated on the boundary of the Lake District National Park. Employment opportunities here are most likely to be in agriculture and tourism. The tourist industry is built on the beauty of the landscape. The third school is situated in an area that has seen the loss of employment opportunities in fishing and heavy industry. This area is now undergoing a period of major transformation of employment patterns. These factors illustrate the need to consider historical and cultural backgrounds when designing environmental education delivery (Gayford, 1993). For example, an anti-nuclear message is unlikely to be positively received if it ignores the economic dependence of a community on employment in the nuclear industry.

3.4.2 Merseyside

In stark contrast to Cumbria, negotiating access to Merseyside schools was problematical. Merseyside contains within its boundaries several Higher Education institutions offering Initial Teacher Education courses and the

placement of pupils for their school experience makes considerable demands on resources across schools in the five LEAs in the area. There is also likely to be a greater demand for access for research purposes than is the case in Cumbria.

The first contact with the 92 Merseyside schools was made with a postal survey with a covering letter to outline the research. (Cumbrian schools had been used to pilot the survey). This contact included a telephone number and address for those wishing to have more information and a stamped, addressed envelope for the return. This generated 43 returns. Only 12 of these indicated willingness to consider further involvement. There followed a lengthy period of follow-up letters and telephone calls, most of which were ultimately unsuccessful in terms of negotiating access. Seven Merseyside schools agreed to visits with varying degrees of success within the context of this study. Three individual teachers saw an opportunity to use an external agency (the researcher) to facilitate planning the school's environmental education provision. Each undertook to contact the researcher with information about developments and, despite subsequent contacts, none responded. In these three cases the efforts of the researcher on behalf of the schools was not reciprocated. Only three schools agreed to allow the researcher to carry out a series of interviews and two of these were the outcome of the researcher's personal contacts.

Control of the research situation is ultimately with the school. In some ways the relationship between researcher and school is informal and schools are able to control this relationship. The researcher has little influence on the situation since research takes place entirely at the goodwill of the school. If researchers are to work in true partnership with schools, there is a need to negotiate a mutually beneficial code of conduct.

3.5 Data Collection Methods

Data for this study were collected using a range of methods. A questionnaire was piloted in Cumbrian schools and was then used as the first contact with Merseyside schools. This was designed to collect some information about what the schools considered to be their environmental education provision and also to identify schools that might co-operate in the study. Interviews, including interviews with contemporaneous note-taking, retrospective note-taking and tape-recorded interviews for subsequent transcription were then carried out with a range of individuals engaged in aspects of environmental education policy-making and implementation. These interviews were a critical element in the data collection process and they raised several important issues that will be discussed later in this section. The data collection timetable in Cumbria was governed by the predetermined timetable for the LEA's pilot environmental education project and took place over a period of 18 months. Data collection in Merseyside took place over a similar period and was governed by the schools that allowed access.

In Cumbria the researcher attended all training sessions for the pilot project and recorded data in a field notebook. Contacts made during this stage were followed up and led to a series of 10 interviews with teachers taking place within one school in the project. Two interviews were carried out with individuals who designed and provided the training sessions. The Head Teacher of a second school was also interviewed and allowed access to the school on a day designed to be an 'Environment Day'. The involvement of the third school in the project was of short duration when the teacher nominated as school co-ordinator became ill and no replacement to the project was made. It was not possible to negotiate access to this school thereafter. Several telephone calls eventually resulted in a conversation with an acting head of department who apologised that under the circumstances, there would be no staff member with the time to spend with me.

In Merseyside schools data were collected from a series of 15 interviews with teachers in three schools. One further interview took place in a fourth school and was unique in the context of this research. It was arranged for a Saturday morning; the school was locked when the researcher arrived; the interviewee eventually appeared with a key and the interview took place in what was apparently his office. The individual talked at length and avoided any responses directly relevant to environmental education provision but he clearly had much that he was determined to say about his school. After some reflection on the usefulness of this interview, it was decided to retain it as part of the research since much of what he had to say has implications for provision in his school. This will be revisited at a later stage.

Ideally the researcher would sample the teaching population in each school based on the concepts emerging from interviews. In practice this was controlled entirely by the participating schools. Brief biographies of the participants can be found in Appendix 1. Further data were recorded using field notes, including journalistic-style notes and thick description of group and individual activities. Geertz (1973, p.29) described thick description as being "... *a way of presenting solid descriptive data so others reading the researcher's results, interpretations and recommendations can comprehend the context within which the conclusions were formulated.*" Thick description *gives the context of an experience, and reveals the experience as a process* as opposed to merely reporting the facts of a situation (Denzin, 1994).

Informal conversations and semi-structured interviews with key informants were also recorded. Often informal conversations where the participant is not consciously engaged with the research yielded valuable information about the cultural and historical background of the school or about his/her beliefs. Other information used for triangulation of aspects of the data was collected from follow-up telephone calls, correspondence and a range of policy documents and autobiographical notes.

With the exception of the questionnaire survey, which was part of the original sampling process, these methods were employed whenever they were the most appropriate to reveal further insight into the research situation. The flexibility inherent in using a range of methods allows researchers to respond in the most effective way to circumstances over which they have little or no control; to apply more than one method to a given situation for triangulation purposes and to increase saturation of the data as the research progresses.

3.6 Data limitations

The choice of schools and interviewees for this project was limited by factors that have been previously discussed. However, the schools that were the focus of the final part of the study were chosen partly because it was thought that they could highlight any significant differences there might be in environmental education provision which result from the difference between a rural and an urban location, and partly because they participated with enthusiasm in the early stages of the work. This limited research population was essential to allow for the depth of data-collection and interpretation that were necessary to begin to understand how teacher beliefs influence environmental education provision. The study's findings therefore focus on an interpretation of what is taking place in these schools that will yield insight and comprehension of the research situation.

Statements from individuals about their beliefs may not necessarily be reliable reflections of their true beliefs. Social, personal or professional reasons may influence these statements. The greater immersion in the life of two schools should enable the researcher to place these statements into richer and deeper contexts in order to better assess the credibility of what individuals say. Ultimately, the level of trust that can be established between researcher and those researched would be critical.

3.7 Observations about the interviews

Most of the data for this research were collected via interviews with secondary school teachers and other individuals involved in working with secondary schools. These interviews were 'unstructured' and naturalistic although, as Wilson (1996 p. 117) points out, '*... there are degrees of structure in all methods of asking questions.*' For the researcher, one of the problems of such interviewing techniques is maintaining a degree of detachment from the views being expressed, whilst somehow engaging at a personal level with the informant. Strauss and Corbin (1998) describe the need to maintain a balance between objectivity and sensitivity. "*Objectivity enables the researcher to have confidence that his or her findings are a reasonable, impartial representation of a problem under investigation, whereas the sensitivity enables creativity and the discovery of new theory from data*" (p. 53). In this case the researcher engaged personally by admitting to having been a classroom teacher for 25 years.

There were potential advantages and disadvantages to this admission. Since the 1988 Education Reform Act there has been increasing involvement in schools by what are seen by some teachers to be outside agencies with a limited understanding of the complexities of education theory and practice. OFSTED inspections have created intense pressures in schools and are often perceived to be an exercise in looking for failure rather than success. New governing bodies with revised responsibilities have greater powers to directly influence aspects of schools which were previously wholly under the control of the school's management team. The researcher's personal experience as a school governor throughout a time of rapid change was one of periodic tensions between head-teacher and governing body until such time as all concerned had made adjustments to their new roles. These factors contributed to uncertainty, suspicion and anxiety on behalf of many teachers about the motives of outside agencies.

The potential advantages of admitting to having been a teacher included that anxiety and suspicion might be minimised since participants might be less inclined to view the researcher as an uninformed 'outsider' who might be inspecting the school and its practices. Witz, Goodwin, Hart & Thomas (2001 pp. 195-227) refer to "... *a kind of sympathetic empathy with the condition of the participant, based on a more fundamental understanding that the participant is not fundamentally different from oneself*" If this can be sensed and reciprocated by participants, then responses may be more open and revealing. Gouldner (1960) refers to the *norm of reciprocity* where social behaviours demand equivalent responses. It was also likely to optimise the use of interview time since participants would assume the researcher had knowledge and understanding of broad structural issues of their working lives. If too much was assumed, the researcher was in a position to ask for further information.

The potential disadvantages included the possibility that some participants might view the researcher with a degree of resentment. Personal observation over many years, and personal experience on leaving the teaching profession, suggest that for a small number of people, there is a degree of resentment when someone moves on to what might be perceived to be an 'easier' or 'better' professional role. This possibility was judged to be unlikely to be realised since the researcher asked to meet staff who were willing to engage in the research. Throughout the research, there were no obvious indicators that any individual was an unwilling participant.

Since this research used Grounded Theory techniques which seek to generate theory from data (Glaser and Strauss 1967), the researcher endeavoured to avoid creating the atmosphere of formal interviews with the attendant notion that these would be question and answer sessions with right and wrong or acceptable and unacceptable answers. It was critical that participants did not feel that they were being somehow tested about their knowledge of environmental education as

teachers in secondary schools usually consider themselves to be subject specialists and consequently may be reluctant to discuss other curriculum areas. In an attempt to reassure participants about the nature of these meetings, they were described as *conversations about environmental education* and they were encouraged to *think aloud* and to voice opinions and feelings about issues that arose. It was explained that these conversations were to explore their thoughts about environmental education and its place in the school curriculum. Oppenheim (1992, p.67) describes this type of interview as being '*heuristic*' and concerned with understanding how people *'think and feel about the topics of concern to the research'*.

In the context of ethical considerations, since there was no obvious potential risk to the participants, the researcher decided that it was appropriate to outline briefly the purpose of the conversations and to give an assurance that individuals would not be identified. This conforms to the principle of informed consent which Cohen and Manion (1996, p.352) consider '*...will form the basis, so to speak, of an implicit contractual relationship between the researcher and the researched...*'

Nevertheless, despite the apparent unstructured nature of these conversations, they were, and indeed needed to be, structured by the researcher in order to ensure that the limited time available was focused on issues related to the research. Non-directive probes were used to encourage the participants to expand issues that emerged in the interview e.g. *Could you tell me more about ...*? Occasionally directive probes were used e.g. *It has been suggested that.... Do you have any thoughts about that?*

The researcher has the essential task of controlling the interview to an appropriate degree whilst creating an environment where the informant can believe that their thoughts are being heard and understood. Although the interview ideally should appear to be a relaxed conversation, in practice the

contribution of the interviewer should be minimal to reduce any bias that could be introduced by lengthy contributions. Oppenheim (1992, p.67) claims that the ideal free-style interview '... *would consist of a continuous monologue by the respondent on the topic of the research, punctuated now and again by an 'uhuh, uhuh' from the interviewer!'* A variety of resource limitations (most often time) will usually ensure that this ideal is unattainable so the interviewer must be skilled in moving forward the conversation with unbiased, non-leading prompts. In the short time available for each meeting, it was difficult to create a relaxed atmosphere. In one school, where the Head of Geography had been given the responsibility of setting up the meetings with teachers, the researcher discussed this issue. It was agreed that before the meetings took place, teachers in this school would be given a brief written explanation of the nature of the meetings. There was the added advantage that interview time would not be taken up with explaining the research objectives. This did not appear to generate any observable overall improvement in the atmosphere. The researcher observed one individual who sat on the edge of a chair throughout the meeting and overheard another referring to the time of his *interview.* The strategy was subsequently reused, however, to benefit from the time advantage.

Other factors also mitigated against a relaxed atmosphere. Many schools just don't have a suitable space to conduct such interviews. During this research, some interviews took place in unsuitable spaces such as the school entrance hall, in a corner of the school library, with a class being taught at the opposite end, and in a science preparation room with an open door to a laboratory where a student was working with a class. On these occasions notes had to be made of the interview and thus the exact wording, the hesitations and the 'ums and aahs' of conversation have been lost for interpretation. The recording of conversations was with the permission of participants and with the assurance that they would not be asked to identify themselves by name. It was explained that this was merely to enable the researcher to concentrate on listening to their thoughts and opinions. Nevertheless, it was clearly a disconcerting experience for some, and

one individual expressed relief once the recorder had been switched off. (*Thank goodness that's over. Please don't play any of it back to me.)* It was also the case that on some occasions, participants carried on to express relevant or illuminating thoughts once recording was complete. In one case the recorder was switched on again to capture final thoughts but on other occasions the researcher had to record in a field notebook what had been said as after-thoughts. In another the participant asked *Is that what you wanted?* possibly revealing a degree of anxiety despite the reassurances described earlier. It is possible that this individual believed that there were right/wrong answers or that she was concerned to have been 'useful' in the research context. As was often the case, there was no time to explore the issue further since the individual had to go to teach.

To overcome the difficulties of creating a relaxed environment for these conversations would require time that was not available. Time for such meetings is clearly confined to precise periods, usually no more than 30 to 40 minutes, when teachers are not timetabled to teach. This in itself creates tensions since teachers are giving up time that they could otherwise be using for preparation of lessons, marking of pupils' work or any of the other tasks which crowd their day. When teachers devote time for researchers, it is highly likely that they are merely displacing other professional tasks to their personal time.

For any researcher embarking on research in schools this is going to be a problem. For a qualitative piece of research it may have a considerable impact on the information gathering process and on the quality of the information. For example, responses may become less focused as the end of the time slot approaches – the teacher may begin to think about the next lesson they will have to teach. If it becomes obvious that this is happening, it makes sense to draw the conversation to a close. On one occasion in this research for example, the participant apologetically checked a file having realised that he had probably forgotten something he needed for the lesson he was about to go to teach. It is unlikely from that point that the informant would have been giving depth of

consideration to complex ideas. It therefore would appear to be advisable that researchers working within similar constraints should not rely on being able to structure the interview towards a 'climax' of complexity.

The next section of this work will consider data analysis but that is not to suggest a linear progression with data analysis following data collection. In practice the two must be inter-linked activities with data analysis being an on-going process that informs further data collection.

Chapter 4: Analysis and discussion of data

> *'Joint collection, coding and analysis are the underlying operation. The generation of theory, coupled with the notion of theory as process, requires that all three operations be done together as much as possible. They should blur and intertwine continually, from the beginning of an investigation to its end.'*
>
> Glaser and Strauss (1967, p.43).

An intrinsic feature of the Grounded Theory methodology is that data analysis is intimately related to and informs the unfolding data-collection. To begin a project the researcher may use questions raised in existing literature but thereafter the questions evolve from the information and concepts emerging from the data. The researcher must be constantly alert to the potential meanings of a text in order to frame the questions that are most likely to clarify or deepen understanding of the research situation. Strauss and Corbin (1996) warn against the temptation to disregard fresh, emerging ideas that may disrupt the process. This is likely to stifle generation of theory. In this study, the researcher needed to conduct the interviews against a backdrop of constant reference to the reality of the circumstances in which teachers work; the political underpinnings of policy documents framing their practice; the concepts emerging from analysis of preceding interviews, and also responses from interviewees that might be indications of the belief systems that influence aspects of their practice.

Management of the data was conducted through the use of QSR N6 software. This made the management of many thousands of text units of data much less time consuming but its ease of use demands that the researcher is disciplined about analysing data alongside the collection process. The danger is that initial coding of the data will continue long beyond its potential to add to understanding. Throughout the project the researcher must remain engaged with interpreting the data. As Richards and Richards (1991, p.170) point out,

"The computer can assist, by holding a myriad threads, exploring the sticky links to other categories, by allowing the exploration of many patterns and the building of one web on another, and by testing the strength of the resultant fabric. But the task of theory discovery remains for the human researchers; the questions are their's, the combinations of categories specified by them."

Transcribed interview texts were imported into the software at the earliest opportunity and descriptive analysis was carried out. Strauss and Corbin (1998) label this process as *conceptualising.* It is a coding process that labels text units with a name that signifies something about the meaning. In this case the data were coded using labels that described the nature of the responses within the discourses relating to curriculum management, the role of teachers, individual belief statements and environmental education. Once the data were coded, code-and-retrieve processes could be carried out, coding could be reconceptualised if subsequent data modified interpretations, and new concepts could be seen to be emerging. As an example, in one interview the participant, when asked, *'... do you consider yourself to be an environmental educator?'* replied, *'Well, I think art, by the very nature of it, because it is such a broad subject, covers aspects of the environment in many different ways. That is bound in with the subject itself and, I would suggest, in the way that I deliver it too.'* The first note made by the researcher was that this implied that art was seen to transcend curriculum barriers with great potential for environmental education provision. This section of text was coded as 'cross-curricular'. The issue of whether the respondent considered both art and environmental education provision to be cross-curricular was partially resolved later in the interview with the response, *'So if this was going across the curriculum, it would be very important to, there would need to be an enormous liaison between people, and actually what part I would be expected to deliver...'.* This suggests that the participant does not conceptualise environmental education as a holistic curriculum but rather as a prescribed

curriculum with provision being managed by dividing it into discrete units to be delivered across a range of subject areas. It raises questions about the definition of the term cross-curricular and its application to environmental education provision. This question was recorded as a memo attached to the node labelled cross-curricular.

For the next stage of the process, intimate knowledge of the data allows the researcher to begin to group concepts under *'... a more abstract higher order concept, based on its ability to explain what is going on'* (Strauss and Corbin, 1998, p.113). The labels attached to concepts and categories evolve as understanding of the data increases. Grouping of concepts begins to take place as the accumulating data support or undermine the initial coding. When the researcher is confident that there is sufficient supporting data, the process of grouping the concepts into categories can be carried out. If incoming data undermine the initial concepts, the researcher needs to seek further data to clarify the meaning of the texts. For this type of study therefore, data-collection is likely to be ongoing for much of the duration of the project.

This study was designed to use grounded theory methodology to explore and understand the thoughts, attitudes and beliefs that influence teachers and their practice relating to the environmental education curriculum. As has been discussed earlier in this work, there is continuing confusion about the differences, if any, between environmental education and education for sustainability (McKeown & Hopkins, 2003), but no attempt was made to predefine these terms at the beginning of the research. It was important to allow participant teachers to voice their own understanding about the nature of environmental education since the degree of perceived clarity in expectations would be likely to strongly influence their attitudes to the environmental education curriculum and its implementation.

The discussion is set out in sections for ease of management but it is recognised that there is inextricable affiliation between sections. Where it is important to do so, these connections and overlaps will be highlighted in the closing discussion. The earlier stages of the discussion may seem to be unduly episodic or dislocated but this reflects the way in which the interpretation of the data emerged. As the discussion evolves, the core themes of the interpretation should become increasingly focussed. The categories of data that were identified in the analysis and interpretation stage are discussed under the heading *Initial interpretation and coding*. This reflects the chronology of the creation of categories.

This will be followed by a synthesis of the major themes emerging from the data. In practice the interdependence of data collection and interpretation served to increase the density of the data and to approach the point of theoretical saturation (Strauss & Corbin, 1998). Where extracts from interviews are quoted individual anonymity was preserved but there may be some explanatory text if it is considered to have a particular relevance.

4.1 Interpretation and coding

This section will begin with examples to illustrate the methods used to analyse the project's data. It uses actual data to illustrate the process but the themes will be revisited later in the discussion to enhance understanding and to enrich the emerging theory.

Verbatim records of what was said by participants were imported into QSR N6, which was used to facilitate data handling procedures. Additional data consisted of field notes made by the researcher and documentary evidence from a range of sources. These were then explored thoroughly for thoughts about the meanings of the texts. This early exploration began the process of

conceptualising aspects of the data. Strauss and Corbin (1998) refer to this as microanalysis, where the data are analysed line-by-line if necessary to generate initial concepts. The outcome can be an extensive list of codes that become refined and grouped as the researcher becomes more familiar with the data. In this case preliminary analysis of interviews from one school generated an extensive list of labelled concepts such as *Teacher role, Environmental education responsibility, Environmental education conceptualising* and *Barriers/constraints.* The analysis and discussion section will generally use the term environmental education for consistency in the text. Others such as sustainable development education or education for sustainability will only be used if they emerge from the data.

All interviews began with the researcher asking the participants to describe their role in the school so this concept of *Teacher role* was common to all the interviews and was easy to identify and code for descriptive purposes. It was felt that this approach opened the interview with a theme that would allow all participants to engage with the interviewer by describing familiar territory. For the researcher the responses were likely to illuminate aspects of their role perceived by individuals to be important. The following exchange took place with a female in an urban comprehensive school.

Q: Could you first tell me what your role in the school is?

R: I'm just a supply teacher, I'm doing a maternity leave for the teacher who's absent, so I'm here 'til about February. But I go round all the schools here and in (LEA) as well.

Q: So you're teaching what?

R: I do languages, French really, but I'm doing mainly Spanish here, but I've done every subject, I've done cookery, art, you name it I've done it.

The first response '*I'm just a supply teacher'* seemed to suggest that she was engaging with a concept of ranking her position as being less important than that of permanent members of staff. She subsequently responded as follows when asked if she had ever felt that she could influence policy:

R: No I don't think I've ever really had any chance to influence policy making, I just do as I'm told with the other minions in school. (The negative associated with *minion* suggests its use to mean servile rather than favourite.)

This reinforces the interpretation that she is ranking her position as being inferior in some way. If this concept were reiterated by significant numbers of other participants, there would be implications for environmental education provision and it therefore became important to explore other interview data for supporting evidence and also for data to clarify the implications for the beliefs individuals hold about their roles and responsibilities. Subsequent discussion will return to this issue.

Memos were then created to record the researcher's thoughts when creating these labels, and text interpreted as relating to these concepts was collected from the accumulating data. Thus the memo for *Teacher role* contained the following:

'These are immediate, instinctive responses to a question about an individual's role in the school. Predictably, most mention subject area first. Exceptions are middle or senior managers who tend to mention management responsibilities first. One other exception is 'just a supply teacher'.

In this memo the use of the term *predictably* is justified by the researcher's ability to draw on 25 years of experience as a teacher in a secondary school. Strauss and Corbin (1998 p.59) consider that "*Experience and knowledge are*

what sensitises the researcher to significant problems and issues in the data ...". They continue by pointing out that the researcher must use this with considerable self-awareness. In this case the researcher would have to acknowledge that for much of her career she would have considered herself to be principally a subject teacher. The texts coded as *Teacher role* provide little evidence that this has changed.

This first phase of analysis and coding generated many categories of data with some segments of data being assigned to more than one category until such time as their meaning became clearer. Inevitably some text was reclassified as the analysis evolved and the researcher's understanding of the situation was enhanced by subsequent data. Eventually these codes were synthesised into the categories that are discussed in Section 4.2.

In the earliest stages of this process, as the continuing data collection and interpretation were taking place, it began to seem as though much of what teachers were saying bore little relation to the provision of environmental education. This created a dilemma for the researcher. Grounded theory requires that theory emerges from the data and not from any preconceived expectations the researcher might hold. The questioning therefore must serve the purpose of facilitating the expression of participants' own thoughts rather than directing or influencing responses.

At this point the transcripts of the early interviews were re-examined and one was discussed in detail with the participant and with the co-ordinator of the pilot environmental education project, both of whom had expressed particular interest in the evolution of the study. Neither could identify any fundamental flaw in the evolution of the conversation within a grounded theory context. Subsequent interviews were carried out following the same procedures bearing in mind that Strauss and Corbin (1996) cautioned against the temptation to disregard fresh, emerging ideas that may disrupt the process. As the data accumulated and

categories were identified, it became increasingly clear that, although much of what was being said was not directly about environmental education, the implications were significant for both the curriculum and pedagogy of environmental education.

A pivotal point in the research began to emerge as the interpretation approached the stage of identifying the 3 core concepts described in Section 5.1. Until then the work had evolved within an interpretative paradigm and the categories appeared to be well supported by the data. They could also have been criticised as being merely interpretations of what was said with no attempt having been made to explain them within a central category that might be relevant beyond the confines of the study. It should be emphasised that what follows was not a point in a linear process but was a process of conceptualising that evolved from a combination of aspects of the task of coding the interviews, aspects of environmental education literature and the researcher's teaching experience in schools.

As the coding was taking place and categories were emerging, a recurring and persistent thought was some variation of, 'What has really changed?' and the realisation that, although education reforms have a considerable impact, they appear to leave fundamental structures unchanged. This led the theorising into consideration of aspects of educational reform and their implications for environmental education provision.

Further reorientation of the research took place as it became clear from the data that environmental education provision appears to be confined to the knowledge and skills strands of education *about* and *in* the environment. These are located within the rational and humanistic educational paradigms described by Sauvé (1996). There was no clear evidence of provision of the socially reforming strand of education *for* the environment that is located within the critical education paradigm. This led the research into the area of critical theorising where

the data interpretation could be explained in a more profound way. It seemed that a central category that took account of the critical paradigm of environmental education could only emerge from a degree of critical curriculum theorising. This is consistent with the views of Robottom & Hart (1993) that the problems of an environmental education curriculum are really problems of education.

This study is similar to several of those reported in Section 2.6 insofar as the data were collected largely from interviews with practitioners. However, one significant difference is that the data were collected from teachers across a wide range of subject disciplines rather than from those who could be identified as having specific environmental education practice. It also differs in that the nature of the data led the interpretation and analysis towards the critical paradigm. So, this work could be criticised for its failure to address current environmental education practice and ways to improve that. Its strength is that it has the potential to contribute to policy making.

4.2 Categories emerging from interview data

The initial categories synthesised from the interview texts will now be discussed and interpreted within the cultural contexts in which they can be located. What follows in this account of the initial coding reflects the process of data-interpretation as it evolved. It corresponds to the transition between *open coding* (Strauss & Corbin, 1998, pp. 101-121) and *selective coding* (pp. 141-161) where integration of the categories begins to take place. The code label is the initial working name given to the category and the description briefly gives a working definition for the code. Interview extracts are reported with an alias. Brief biographies of participants can be found in Appendix 1. These extracts will variously be linked to environmental education, citizenship education and educational literature. All three are in a state of flux, however the following landmark definition of environmental education that emerged from the IUCN/UNESCO 'International Working Meeting on Environmental Education in the School Curriculum' serves to illustrate the congruence of many of the objectives of all three.

> *"Environmental education is the process of recognising values and clarifying concepts in order to develop skills and attitudes necessary to understand and appreciate the inter-relatedness among man, his 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."*
> IUCN 1970 (cited in Palmer 1998, p. 7)

I would argue that the terms *Education* and *Citizenship Education* could replace *Environmental Education* and the statement would retain its power and conviction. In other words, the debate about environmental education is

fundamentally little different from that about citizenship education or the concept of education itself.

The interpretations that follow are inevitably influenced by my personal convictions but, throughout the process, I have endeavoured to find the meaning intended by the speakers, to allow teachers' voices to be heard. I have encouraged participants to articulate their own thoughts. I have made comparisons between individuals working in the same school. I have made comparisons between schools. I have acknowledged responses that are unusual.

4.2.1 Code label: Teacher Role

These are the sections of text used to describe the role of the interviewee, as they perceive it. Rather than being asked to tell me what subject they taught, participants were asked to describe their role in school and were allowed their own interpretation of the term. This took place at the beginning of each interview on the grounds that individuals would easily respond to this. It is likely that their responses reflect what they believe are the principle aspects of their role. None of the participants asked for any clarification or hesitated before answering which suggests that they were confident about expressing their beliefs about their role.

> Cate: *"I teach PE, geography, PSHRE, which is personal and social, health and religious education, RE and history. So in terms of my role, I teach lots of different threads that pull together but my main role I would say is as a form tutor."*

This response was unusual in that it was one of the few in this category where the participant considered the principal aspect of her role to be other than a subject teacher.

Clive: *"I'm a teacher of Physical Education within the school. I also have responsibility for certain aspects of Physical Education i.e. outdoor education. I am also a year 7 tutor and year 7 science teacher for my own form. ... So I am predominantly a PE teacher with some science. I also co-ordinate the Duke of Edinburgh Award within the school."*

Don: *"My role in the school is Head of Science and obviously within that it's to co-ordinate all the science curriculum, both examination and non-examination. I also have a role as the project co-ordinator for a technology college so there's a dimension there that obviously overlaps with science."*

Fran: *"I'm Head of the Art Department which covers everybody from Year 7 up to the Upper 6th."*

George: *"Well as Head of English, I see my responsibility is for the delivery of the English curriculum to the pupils in the school."*

Jenny: *"My actual title is Head of Lower School Pastoral Manager, mainly I suppose because I've been here so long and have just grown into it. ... I'm also the pastoral manager in respect that I do PSHE, health promotion, child protection. I'm responsible for looking after children and for policies such as the bullying policy, the child protection policy, the drugs education policy, the health education policy and by the way I'm a teacher as well. I am a frustrated economist who gave up teaching A level economics years ago when I got all these other jobs because I could never get to the classroom. So now I teach lower school humanities."*

These extracts exemplify the concept of a teacher role in secondary education as being that of a teacher of a subject discipline, a concept that seems to be resistant to change. The final extract from Jenny begins by describing a less-

confined role but even she eventually refers to herself as *a frustrated economist* and reveals that she still defines herself as a subject teacher.

Peter responded as follows:
"I am an environmental scientist but this doesn't exist on the school curriculum so I don't get to teach my subject. But as soon as people see the word scientist, they assume one could teach all the subjects in science." He continued, *"So I'm obliged to teach physics, chemistry, biology, geology and all that."*

With no perceptible trace of irony he was regretting the assumptions made to define aspects of his role whilst at the same time he expressed his own assumptions that his role should be as an environmental science teacher. He expressed no recognition that subject boundaries could be at least flexible.

At an early stage in this work the concept of 'the teacher as expert' in a prescribed subject area asserted itself and, as the work progressed, little strong evidence emerged to suggest that there was an underlying, more complex understanding. If teachers believe themselves to be principally transmitters of knowledge then there will be an expectation that they have an extensive body of knowledge. By confining their practice within the limits of their subject knowledge this model of teaching constrains the ability of any individual to explore a wider role. This is a comfort zone of activity with definable parameters within which teachers can feel reassured about their expertise and pupils can feel secure about their learning. Such predictability contributes to a self-perpetuating system that may only be perturbed either by liberating the imagination of teachers or by imaginative and innovative initiatives from external agencies.

It is also the zone of activity that reflects a broader cultural expectation that teachers be experts. Indeed Britzman (1986, p. 450) suggested, *"The cultural myth of teachers as experts... contributes to the reification of both knowledge and the knower."* This raises the questions of whose knowledge is to be reified and

why. Apple (1996, p. 23) maintains that there is always a *politics* of official knowledge and that it embodies conflict between *"what some regard as neutral descriptions of the world"* and others as *"elite conceptions that empower some groups while disempowering others."* He continues by suggesting that a national curriculum and its associated national testing are an ideological attack on those who already have most to lose in society. Within the context of environmental education, where even defining the official knowledge is politically problematical and challenging to economic elites, there is likely to be a range of barriers to provision. Some of these were expressed repeatedly throughout the interviews as will become evident, and others may not even be evident to teachers who function largely within the 'teacher as expert' domain and therefore have reflected little on what environmental education might or should be.

Friere (1993, p.52) categorises this type of teacher-pupil relationship as being *fundamentally narrative* in character. The implications of this for environmental education will be discussed later. So, the opening stages of the interviews immediately highlighted beliefs that are fundamental to the way that teachers fulfil what they believe to be the responsibilities of their role. What should they be teaching? How should they be doing it? Hargreaves (1994), in discussing teacher development in a post-modern age, pointed out that teaching is a changing profession and that sometimes teachers resist the change and at others they are constrained by structures *"designed for other purposes in another time"* (p. 95). He described attempts to control teachers and teaching by imposing spurious certainties as being last bastions of modernity that *"... justify continuing bureaucratic interventions by educational politicians and administrators, and they legitimate the separation and superiority of the academy as a specialized source of scientific wisdom which can direct and decree what teachers must do"* (p. 101). He continued, *"The collapse of scientific certainty fundamentally challenges the control of educational bureaucracies as well as the credibility of the academy. No wonder it continues to be resisted with great tenacity"* (p. 101).

For teachers one aspect of their resistance may be to retreat to the consistency of the role of knowledge transmission where the teacher is the expert. This is a role definition that is consistent with a rational educational paradigm. Sauvé (1996) describes the rational educational approach as *"...characterised by the transmission of predetermined knowledge...by a teacher in a position of relative authority, to a pupil who must reproduce it"* (p. 16). She contrasts this with the humanisitic educational paradigm where the focus is on the learner and the learning process and also with the inventive educational paradigm which *"...favours critical construction of knowledge and the development of relevant and useful actions."* (p. 17). For environmental education, the humanistic educational paradigm is seen to lead to the optimal development of all dimensions of the learner with the merger of nature education and environmental values education. The inventive paradigm would foster what Robottom and Hart (1993) defined as socially critical environmental education with its potential for constructing knowledge for social transformation.

So the persistence of the primacy of the subject-specialist, teacher-as-expert role is reinforced in these interviews. This raises the question of the extent to which teacher beliefs have an influence on their practice. If teachers did construct their role exclusively within the teacher-as-expert parameters, there would seem to be little space for their beliefs to influence their practice. Nespor (1987), however, claimed that beliefs and belief systems are important aspects of task definition for teachers and continued with two examples of individuals who defined their role within quite different parameters. One *"... looked at teaching as a sort of moral mission to socialise children and better the community; money for her was secondary."* The second *"... saw teaching mainly as a job, a form of labour, a way of making a living"* (p. 323).

Teachers in this study were asked to *describe their role* in school and overwhelmingly responded within subject-specialist parameters. No responses conformed to the types described by Nespor, which is not to suggest that they

don't exist, but does imply that these dimensions of teacher roles are not at present dominant in teacher thinking.

The most immediate implication for environmental education provision is that some of the values and attitudes strands of environmental education are not easy to locate within existing subject boundaries. Careful co-ordination of provision across the whole school curriculum will be needed if these are to be addressed.

4.2.2 Code label: Purpose of Education

There was no direct question about the purpose of education. Beliefs, attitudes and opinions emerged as teachers talked about their work and very few of the teachers in this study articulated any direct thoughts about the purpose of education. It became evident as the interviews were being interpreted, that attempting to categorise teachers' views about any aspect of education into either deeply held personal beliefs or professional attitudes shaped by their working environment, was fraught with difficulty. Perhaps the personal/professional duality reflects the varying degrees of certitude described by Abelson (1979, pp. 359-360) where personal beliefs are passionately held and professional beliefs are the modifications of these within the prevailing educational paradigm. Or perhaps personal beliefs strongly reflect what Abelson describes as representations of *"alternative worlds"* (the world as it is and the world as it should be) and professional beliefs are more indicative of a belief system containing a "*substantial amount of episodic material"* based on personal experience or perhaps propaganda. Newhouse (1990) points out that beliefs and attitudes are difficult to disentangle but cites Petty and Cacioppo's (1981) definitions, where an attitude is an enduring positive or negative feeling about a person, object or issue and beliefs are the information held about a person, object or issue. Given the inherent difficulty in distinguishing between beliefs and attitudes, the coding did not attempt to make a clear distinction between the two.

Joan for example appears to be describing the purpose of education within a model of education that contains *a substantial amount of episodic material or propaganda* rather than within an *alternative worlds* model.

> (The priorities are) "*...reading, writing and arithmetic aren't they? That's the big thing at the moment, improving standards ... so that they'll do better in their SATs and when they do their GCSEs they will get a higher grade...*"

It is possible that her personal beliefs would be framed within the *alternative worlds* model and that she constantly searches for a compromise if personal and professional beliefs diverge. What seems likely is that she expressed the belief system that dominates educational structures at present. In a professional environment where the space to reflect on theory and practice has been effectively closed, it is likely that many teachers will have moved seamlessly from their own experiences as pupils and students into their role as teachers without having the opportunity to imagine an alternative world. It suits the New Right and neo-liberal restorationist agenda to ensure that alternative worlds are not imagined.

Josh spoke at some length about what he thought education should be. Some of what he said was subject-specific and some described more general objectives.

> *"Oh, well, I mean obviously, the pastoral side of the job is extremely important and you hope that some of the things you do rub off on the kids and you try and lead by example in certain situations.... As we all know exams are important but you're trying to educate kids for when they leave school... and you want them to be good citizens. ... Here's what you want them to do. You want them to be able to go out and make sense of their citizenship, about their careers, about their moral issues ... the same way we have to."*

Josh's use of the expressions *"rub off on the kids", "lead by example"* and *"the same way we have to"* imply that he believes the purpose of education is primarily the transmission of prevailing societal values. This model of education reinforces the transmission of selected belief systems by providing episodic material. It does little to challenge the dominant rational paradigm. He continued by focussing his comments on business studies.

> *"I think business studies...should be part of a core curriculum because, if we're trying to educate our pupils to go out into the wide world, we've got to make issues such as European Union (etc.) interest rates, inflation, exchange rates, we've got to make them available to them."*

There was little to suggest that Josh's beliefs about the purpose of education were influenced by an alternative world. Indeed much of his response reflected the rational paradigm where education merely reproduces existing social and educational patterns.

The following response from Tim appeared initially to have a wider conceptual base. He apparently believed that education should be enabling pupils to understand and develop relationships.

> *"Enabling the youngsters to think maturely, to have a fund of knowledge that they can draw on. To see a relationship between things and that includes society ... and knowledge. To see how to grow up with one another, what other people are like, how to treat them, how to treat them differently from each other. How to react to adults, teachers in this case, but adults generally."*

However embedded in this response was *"How to react to adults, teachers in this case, but adults generally."* There is an assumption that young people have to react to teachers without there being a reciprocal requirement for teachers. This reinforces the belief that teachers are experts. So, although Tim articulates an alternative world, he seems to be bounded by the teacher-as-expert role that would constrain his practice within the dominant paradigm that Friere (1993) described as 'banking'. In the 'banking' concept education is fundamentally narrative in character with a narrating subject (the teacher) and patient listening objects (the pupils) with pupils receiving, filing and storing the deposits. Implicit in 'banking' is an assumption of a dichotomy between the world and pupils. The educator's role is to regulate the way pupils are 'filled' with what is considered to be 'true' knowledge. This suits the purposes of those described by Freire as the oppressors *"...whose tranquillity rests on how well people fit the world the oppressors have created, and how little they question it"* (p. 57).

Friere (1993 p.62) suggests that education should be the practice of freedom as opposed to the practice of domination. It should deny that man (sic) is abstract, isolated, independent and unattached to the world and should also deny that the world exists as a reality apart from people. In saying, *"To see a relationship between things and that includes society ... and knowledge. To see how to grow up with one another, what other people are like, how to treat them, how to treat them differently from each other"*, Tim does indeed deny that man is independent and unattached to the world. However, he then assumes the practice of domination with, *"How to react to adults, teachers in this case, but adults generally"*. There seems to be a gap between his conceptual and his practical world.

Of all the participants in this study, Bill was the most remarkable. He was enthusiastic about the potential to further develop environmental education in his school and was taking part in the pilot project being carried out in Cumbria. He

was the only teacher in this study who seemed to have a strong personal commitment to environmental education that was an integral part of his teaching. Uniquely he also welcomed the opportunity to participate in this research and wanted be involved throughout its evolution so arrangements were made for my return visits in the second year of this project. It was shocking to be told of his premature death when I returned to the school a few months later. He exemplified the teacher who drives forward curriculum innovation regardless of institutional barriers. During that final visit it was clear that the school had put in place temporary appointments to cover his timetable and managerial responsibilities but his vision for environmental education was at least temporarily lost. It was a text-book example of how aspects of the curriculum like environmental education can be located with one committed individual and their departure can impoverish provision in a school.

Bill was an individual who recognised the imposed boundaries of his curriculum and *explored* within those and wanted to find ways to extend them.

"I've always thought of geography as being a subject in which – not so much a subject as a kind of method of teaching really. Because we take the world as our textbook, our point of reference if you like, we can go into lots of areas. We can address some quite difficult problems – racism, population issues, birth control, things like that. We can look at them and explore them and when we feel that we've reached the edge of our safety limits, we can't really go any further as it were, then we can come back to it and very often we're actually addressing a number of issues in the real world."

He made the distinction between geography as a subject and geography as a teaching method and he defined it as an entry into a wide range of global humanitarian issues. He used *we* to include pupils and teachers. He used expressions like *We can address...* and *We can look at them and explore them ...*

in ways that suggest pupils and teachers were engaged in a collaborative endeavour. He referred to *edge of our safety limits* as a point that would be revisited. The implication was that the *safety limits* were temporary obstructions to the exploration of issues rather than permanent barriers. He reinforced the collaborative aspect of further developing environmental education in his school by saying:

> *"We need to listen to what the children are saying and look at the things that they think are important, but* (pause) *I have agonised over this, which direction to actually go in, but we mustn't not do the big issues because children haven't got to grips with those."*

He continued by describing an aspect of teaching where he thought teachers needed to influence developments.

> *"We say, 'Oh right. We'll do that but don't you think it is important that we have a look at this?' and we sort of have to take them with us and then once they get the idea themselves – and they do get ideas – we can then follow their ideas because they do have good ideas."*

Here he acknowledges that pupils need to develop skills and understanding that can then be used to enter the collaborative, co-operative mode of educational endeavour. He believes education is more than the transmission of knowledge and development of a tool-kit of skills. It should ultimately be an exercise in using the tool-kit. His was the clearest articulation of education as a potentially transformative experience with the greatest potential for beginning to address the values agenda of education *for* the environment. Somehow he had sustained his vision despite the impact of the reforms that began with the Education Reform Act 1988.

This, in many ways, reinforced the curriculum status quo by creating the statutory/non-statutory curriculum dichotomy. This dichotomy appears to be increasingly embedded in the educational ideological positions occupied by both teachers and pupils with the result that non-statutory provision including environmental education has a low priority. As environmental education has the potential to challenge many of the technocratic assumptions underpinning the instrumental model of education, powerful political, social and economic elites could be threatened if these assumptions are examined too closely. The current status of environmental education ensures that curriculum which challenges the status quo is unfocussed, or even non-existent. Thus, environmental education provision is predominantly located in the knowledge and skills domains and Government can claim to be responding to commitments to take action through education, whilst ensuring that the challenge to dominant ideologies is minimised. Close inspection of the nature of profit-driven markets within a capitalist context is not encouraged. Bill's approach seemed to consider that the *safety limits* were to be challenged and he wanted to change the school culture.

Sparkes (1991) suggested that teachers do have the potential to transform the school culture but acknowledges that there is associated risk that they may not be prepared to take. Hargreaves (1989) pointed out that teacher-generated cultural change is unlikely to be successful given the structural reinforcement that the National Curriculum is providing for the traditional teaching culture. This makes it less likely that teachers can act as change agents within the existing structures. The locus of control of the curriculum is perceived to be external to individual teachers and to the schools.

4.2.3 Code label: Environmental Education Responsibility

The following section examines responses that in some way indicate whether teachers consider that they as individuals have any responsibility for

environmental education. Previous discussion has already shown that environmental education is an aspect of the school curriculum that is still evolving in many ways and that there is still a long way to go before theory, policy and practice begin to converge in a coherent way. What is clear is that it is increasingly understood to be more than an aggregation of discrete packages of knowledge located in a range of subject areas such as science, geography and religious education. Indeed Palmer (1998, p. 267) points out that environmental education "... *incorporates aesthetic, spiritual, social, political and economic dimensions alongside (not separate from) the purely scientific.*" It follows therefore that, for effective environmental education to take place, all teachers need to understand their role in such provision.

All the teachers who took part in this study believed themselves to be in some way environmental educators but it became clear that there were widely differing views about what that might mean in practice. For many, these views were articulated with reference to prescribed curriculum content rather than from any reflection on their personal values and citizenship responsibilities.

Cate was able to draw upon curriculum statements for geography to define her responsibility, but the example she chose suggests that she defines environmental education within issues-based parameters. This approach is compatible with her responsibility to deliver the prescribed geography curriculum.

> *"Yes, I do consider myself to be an environmental educator. I'm principally from a physical geography background.... I always try to bring out statements about cutting down trees or something."*

Fran seemed to think that her responsibility to deliver the art curriculum implied an environmental education responsibility because the subject covers aspects of the environment.

"Well I think art by the very nature of it, because it is such a broad subject covers aspects of the environment in many different ways. And that is bound in with the subject itself and I would suggest in the way that I deliver it too."

When asked to expand the point about delivery she replied:

"Well a lot of art education these days is asking people to appreciate not only historical works, but works being produced today, and also in terms of looking at the environment in many different ways, and how people promote, or otherwise, the environment today and although that is done particularly through discussion work, looking at how other people illustrate and advertise different points, how people reflect the environment in the way that they paint it, and how they appreciate it."

She seems to be using the word *appreciate* in the sense of acknowledging other's aesthetic interpretation of the environment (how others illustrate different points) rather than in its more critical sense of understanding why they illustrate them as they do. There was a feeling that she was confining her responsibility within the prescribed curriculum. She had satisfied herself that *the environment* featured in her teaching and therefore she was an environmental educator.

When considering the contribution that art could make to environmental education, Wenham (1996) pointed out that art could be seen to be two apparently opposing tendencies that in fact can be complementary.

"The first is characterised by an individualistic approach, with an emphasis on creativity, originality and expression. The second tendency is to emphasize the social nature of art, which is seen as an activity rooted in tradition, but centred on investigation, exploration and communication" (p. 73).

He claims that it is the individualistic, creative tendency that has dominated the twentieth century and the potential of the investigative, explorative, communicative strand has been underestimated and under-exploited in education. Fran seems to be working in the dominant paradigm so, although she can feel that she is an environmental educator, it is within the limits imposed by the individualistic concept of art. It is clear from Wenham's writing that the potential for art to contribute to environmental education is far from being realised. He gives the example of the graphic symbolism of the World Wide Fund's panda as an artistic trigger for the emotional or intuitive responses to the environment that can be explored in art lessons.

Carr (2004) goes further and makes a connection between moral values and the arts. He suggests that "... *as well as wanting the environmentally educated to appreciate the outdoors (as passive spectators), we might also want them (as activists) to try to protect it from various kinds of industrial or commercial rape and pillage*" (p. 222). He also suggests that the works of Romantic writers such as Wordsworth, the painters Mondrian and Cezanne and the sculptors Henry Moore and Andy Goldsworthy be explored "... *with an ultimate view to recognising the potential of the arts for engaging with aesthetic, spiritual and moral aspects of environmental education*" (p. 228). Fran's responses suggested that she worked within the confines of an individual aestheticism that would limit the potential of art to connect with moral issues and the values domain of environmental education.

Janet's response typified many in this study.

"Well I think that all teachers are environmental educators because the environment must come into every area of the curriculum really."

Most then continued to describe structural barriers to their effectively delivering an environmental education entitlement. It seemed that most teachers have at least an instinctive understanding that environmental education issues are of fundamental importance to society and therefore belong in a school curriculum. However, the conflicts arising from the contested territory of the curriculum are felt by many to be outside their locus of control. Derek pointed out that, although his school was continuing to make environmental education a high priority in its planning, they increasingly felt that they were being *restricted* and *channelled* into areas of the curriculum that they had left behind in the 1980s.

Many of the teachers in this study felt that they could not find a way within the existing system to be effective environmental educators and others felt that educational reform had forced them to abandon their initiatives. What they are articulating is in part the outcome of the reorientation from what the government in the 1970s and 80s considered to be an out of control *ideological curriculum* to a curriculum of *'real' knowledge* (Ball, 1994, p.33). Within what Ball (1994) calls a restorationist curriculum, the knowledge and skills dimensions of environmental education can be accommodated but the values and attitudes dimensions become overwhelmed. Indeed Graham & Tytler (1993, p.74) when describing the evolution of the National Curriculum Council's geography statement wrote:

> *"The ecological issue showed the government's dilemma. In rapid succession ministers were against the proposals because they were worried about expense and the possibility of encouraging pressure groups, and for them because of the growing public interest in green issues and forthcoming regulations from the European Community. As regards skills, the message was constant: knowledge first and knowledge last."*

Graham & Tytler (1993) also reported conflict over the desirability of the five cross-curricular themes that included environmental education. They initially

survived to be introduced as non-statutory requirements of the curriculum only to disappear without trace from the National Curriculum Review carried out by Dearing (1994). The overwhelming emphasis of the National Curriculum is on defined knowledge within the statutory core and foundation subjects. This reinforces the environment where teachers are likely to construct their professional identity within the positivist paradigm of *authority-in-knowledge* rather than the *collaborative participant/inquirer* of the critical paradigm (Robottom & Hart, 1993, p.26) and pupils are then confined to being *passive recipients of disciplinary knowledge* rather than being freed to be *active generators of new knowledge* (Robottom & Hart, 1993, p.26). Teachers would be seen by Friere (1993) to be participants in *banking education* that *treats pupils as objects of assistance* rather than in *problem-posing education that makes them critical thinkers (p. 64).* In a restorationist curriculum there would be no place for active generators of new knowledge.

Evidence began to emerge at an early stage in this study that some of the longer-serving teachers express an idealistic concept of their role as being participators in an emancipatory, problem-posing model of education but their practice is necessarily constructed within an externally designed and statutorily imposed 'banking' system. Those who had been developing innovative practice expressed some frustration.

> Derek: ... *I see that what we did develop in the 1980s in this school has been very much changed by the top-down innovation of the National Curriculum ... we've been very much restricted and channelled into areas that we originally left behind because we wished to develop a broader response to our local environment and to global issues."*

There were also some signs of confusion emerging about what being an environmental educator might mean. Fran, who thought that art "*...because its such a broad subject covers aspects of the environment in many different*

ways...", revealed some confusion about her role as an environmental educator when she said, *"Yes in one sense, but I don't know exactly how it impinges on the environment as such."*

Wenham (1994, p.75) regrets a lost opportunity in Curriculum Guidance 7 where there was a failure to identify art as a means of visual investigation of the environment. He points out that the implication that it is sufficient to develop knowledge of the environment through scientific, technological or geographical investigation makes no sense unless the beauty or ugliness of the environment is of no consequence. So Fran's uncertainty about her role as an environmental educator may, at least partially, be an inevitable consequence of the prescribed art curriculum within which she works. Once again it seems that 'official knowledge' limits the potential to be an environmental educator.

So it seems from these responses that even if teachers have a sense that they should have some responsibility for environmental education, they believe that the realities of their working life are the barriers to their fulfilling that responsibility.

4.2.4 Code label: Barriers/constraints

The following section illustrates the range of perspectives about the barriers to environmental education provision that were articulated by teachers in this study, although it is clear that there are also some hidden barriers as exemplified by Fran's perceptions of the individualistic nature of art. In the earliest stage of coding these data, the barriers were subdivided into two categories in an attempt to differentiate between what might be merely excuses for not engaging with environmental education, and what could be perceived to be real issues that teachers felt needed to be resolved. It soon became evident that attempting this differentiation was fraught with difficulty for two reasons. Firstly,

classifying text as an *excuse* was always going to be a value judgement made by me based on my own extensive teaching experience and strong commitment to environmental education provision. The lack of detailed information about the life and experiences of individual teachers meant that I could not justify such judgements. Secondly, it became clear that I had no way of knowing with certainty whether teachers felt they were articulating excuses or barriers they would have real difficulty overcoming. So, from both the teachers' and my own perspectives, the criteria for defining excuses were problematical. With that in mind, the text was coded for barriers/constraints with the intention of classifying those if possible at a later stage.

Derek and Rob both highlighted the pressure being generated by examinations and accountability as dictating what happens in schools.

> Derek: "*... with the increased pressure for performance and public accountability teachers are being forced to focus on ... statutory requirements ... and this is not giving them the time to look at the breadth of concerns schools should have.*"

He continued with specific examples to illustrate his point:

> *"But I still believe that we're coming under so much direct political pressure at the national and local level to focus on exam results, whether it's SATs or the sixteen or eighteen plus exams that it is not giving teachers the space and time to look at the issues, often very vital issues that are in non-statutory provision."*

> Rob*: "Survival of teachers and schools has seemed to be dictated by the exam requirements and by the requirements of accountability via league tables."*

In these comments schools and teachers are perceived to be *forced* by and *dictated* to by accountability designed by external agents. Indeed Derek identifies this as *direct political pressure.* Statutory requirements and league tables are seen to be factors that limit the potential for schools to deal with the breadth of concerns they *should have.* Derek's position as Head of Humanities, and therefore a middle manager in school, is likely to mean that he is particularly aware of the degree of flexibility in the system and it is clear that he is frustrated by the limits imposed. Direct political pressure to deliver improved exam results is perceived to be overwhelming schools and teachers.

Rob's observation about the survival of teachers and schools implies a degree of anxiety about security of employment that inevitably will influence the capacity of individual teachers to overtly challenge the status quo. This professional insecurity could of course be considered by the New Right restorationists to have the advantage that teachers are less likely to question policy and more likely to conform to external demands and pressures. This seems to be the type of control-at-a-distance described by Ball (1994) where the state distances itself from coercive, prescriptive control.

> *"The individualization of consciousness, oriented towards performativity, constitutes a more subtle yet more totalizing form of control of teachers than is available in the top-down prescriptive steering of state Fordism. Resistance in this context threatens the survival of the institution. It sets the dissenters against the interests of colleagues rather than policies* (p.54).

In such a climate, teachers are likely to be more concerned about protecting themselves and colleagues than about challenging educational ideologies, and therefore, control mechanisms that threaten their careers will be very effective in defining their role. It is clear from this study that teachers now see their priority as improving standards via the proxy of improving examination results.

The following three comments are explicit about what teachers believe to be the beliefs and attitudes of pupils, but there were a number of other teachers who implied that many pupils feel the same way.

Tim: *"... you ask pupils what they think of PSE, they just don't see what the point is."*

George: *"...by the time they've finished Key Stage 3, they've already made their minds up.... They'll say, 'Well that's not important, it's not gonna help me get a job'".*

Mel: *"But also, apparently, two years into secondary school the pupils are just not motivated environmentally. Maybe it's not trendy or something but pupil motivation's another problem that they have."*

(Mel's observation was based on her reflections on the problems she experienced recruiting secondary schools to participate in a pilot environmental education project.).

What might be happening here is that pupils are conforming to the expectations of the system as conveyed by their teachers. How could pupils aspire to anything different from what is expected of them? Fullan (1991) suggests that one of the reasons for pupil indifference to innovation is "... *simply because the changes in fact do not make a difference to them"* (p. 182). He went on to report his research findings about two aspects of pupil motivation:

- *"Students who were not interested in going to college or university were impatiently waiting for the day when they could leave school and get out and make money. They were not at all interested in the curriculum. Interaction with close friends provided the only satisfaction in school."*

And

- *"College- or university-bound students were interested in discussing curriculum participation and had many ideas to suggest. However, their predominant orientation was to "cover the course topics" and "get good grades". These students valued teachers who were fair in their grading practices, knowledgeable in their subject areas, and friendly and helpful"* (p. 173).

These teacher responses do ask a question about pupil motivation to engage with aspects of the curriculum and it is clear that there is a perceived lack of motivation in some areas. Fullan (1991) addresses this issue by suggesting that co-operative learning strategies have been shown to have some success, although he cautions that they may not be a universal panacea. One of the core characteristics of co-operative learning is the development of group skills, and these would be appropriate for the socially transformative aspect of environmental education. Co-operative learning has much in common with independent learning in that both encourage pupil autonomy in the learning process (Griffith, 1998).

If we now consider the implications for environmental education and the tripartite model of positivist, interpretivist and critical domains, we can see that the New Right restorationist model of education creates powerful barriers to engaging with the critical domain of environmental education. The critical domain is predicated on collaboration between teacher and pupil in a socially critical endeavour while the New Right view is that the purpose of education is primarily vocational, with the teacher being the authority-in-knowledge. A shift towards some co-operative learning could achieve two ends. Firstly, it could generate greater motivation amongst pupils for all their learning and secondly, it opens up the possibility of adding depth to environmental education provision. This kind of shift will be dependent on political will and also a change in teacher attitudes. Neither will be easy to achieve in the short term but school managers can approach the second via INSET. So it seems that pupil motivation is

perceived by some teachers to be a barrier to environmental education provision although, it has to be said that this is what some teachers believe and is not necessarily the perspective of pupils. Further research working with pupils would be needed to explore this issue.

A further barrier is illustrated in the following extracts. Views on assessment and how it influences environmental education have been discussed in more detail elsewhere in this study but are briefly referred to here where that influence is clearly perceived to be a barrier.

Graham: *How you measure it, God only knows how you measure it."*

Fran: *"...and it's the end product that's going to be assessed even though you have a worthwhile discussion."*

Ian: *"I think, if you look at the Dearing review ... which virtually ignored the cross-curricular themes, which in a way sent out a message to schools, particularly as by that time we had league tables and accountability... and the OFSTED inspections which came on the back of that... you would have said that... schools will place less emphasis on things which they not only would find it difficult to prove success in, but also where people who were standing in judgement of schools were tending to ignore anyway."*

These three individuals reflect the assumption that curriculum must now be assessed. This opens the debate about modes of assessment. Graham's use of *measure* implies that he thinks in terms of the positivist mode of assessment with pencil-and-paper tests and examinations. Fran points out that assessment addresses learning outcomes rather than learning processes. Ian, a head-teacher, expresses views from a senior management perspective but of course these are likely to have a fundamental influence on the school ethos and on individual teachers within that school. He sees the combination of the absence of any

substantial content, referring to cross-curricular themes in the Dearing review of the curriculum, combined with the influences of league tables and OfSTED inspections, as the causes of diminishing emphasis on aspects of the curriculum where success is difficult to prove. He also claims that those judging schools were tending to ignore these anyhow. Assessment is clearly perceived to be a tool to produce evidence of success within the prevailing climate of league tables rather than a diagnostic tool for example.

Assessment in the form of tests and examinations to measure learning outcomes is favoured by the agencies for a cultural restorationist education and, despite the ongoing debate about their function and place in the system, are still firmly embedded. Ball (1994) suggested that this approach to assessment rests on a fundamental distrust of teachers and is used as a performance indicator for teachers rather than as a pedagogic tool. Ian's phrase *'people who were standing in judgement of schools'* hints at this distrust. Ball continues by suggesting, *"This is further indication of the restorationists' extraordinary philosophy and social psychology of distrust, rooted in a belief in the worst in all of us, in a norm of rational self-interest, which gives rise to the need for self-discipline and incentives as the only possible bases for social order and social motivation"* (p. 41).

This view of assessment has two implications for environmental education. Firstly, many of its learning objectives, especially those in the critical domain, are not amenable to measurement in this way. Secondly, in the current climate where examination results are promoted as indicators of successful schools, it is inevitable that schools will focus on those areas of the curriculum that will provide the evidence of success demanded by the system. Daugherty (1996) pointed to the accompanying danger of curriculum under-development "... *with external examinations being seen as an obstacle to learning outcomes which conventional examining methods were incapable of measuring*" (p. 243). He continues by suggesting that there is a need for research to explore other modes of

assessment for geographical and environmental education. The danger of curriculum underdevelopment is likely to be greatest for areas of the curriculum that are not prescribed in detail, including environmental education. Ian expressed this with the phrase '*...schools will place less emphasis...*'. Here he is demonstrating one of the dilemmas of school managers in the current education pseudo-market. He needs to 'manage' curriculum development both to satisfy the demands of the assessment driven curriculum, and to also demonstrate to the market that the school is delivering a curriculum that is broad, balanced and relevant as outlined in the 1988 Education Reform Act. He is in a position where choices have to be made and the publishable outcomes of assessment are being given priority.

The views about assessment expressed here are likely to constrain environmental education within the positivist and interpretivist domains since this is where learning outcomes can be measured and schools can feel that they can prove success when they are called to account. The environmental education aspects of the science and geography curricula fall largely into these domains. The issue of assessment for those aspects of environmental education to be found in Citizenship, R.E., PSHE and similar 'values' dimensions of the curriculum remain problematical.

The next comments illustrate an issue that was evident throughout the data collection phase of this study. *Time* is perceived by teachers to be a scarce resource. Much of their time is spent in non-negotiable activities in the sense that there are statutory requirements governing what they do. They must be in class when timetabled; they must attend meetings and activities planned by management within statutorily permitted hours, and they must carry out all other reasonable requirements such as marking, supervisory duties etc. The consequence is that they have little time that is under their own control. This raises the question of where they can find time for curriculum development.

Don: *"If something like environmental education were to be deemed important enough to be raised in schools, then the only way I know of making people sit up and take notice is to make it examinable. Optional things are the first to go out the window when you're struggling, when you've got a member of staff off or ... there's exam stuff coming up."*

Fran: *One of the big constraints, like most teachers will say, is that of time. You don't have enough time always to develop an issue. You're just getting into it and it's the end of the lesson. If it's with the younger age group, you only see them once a week ... you have to then recap the following week."*

Harriet: *"Well my amount of time to prepare and read around the resources that I'm using is going to influence what I'm putting across."*

Rob: *"With the older kids particularly I do like them to go away and research things and come back and talk to the rest of the class and discuss things and look at different sides to an issue. But those activities, you increasingly perceive them as a bit of a luxury. I do think some kids lose out from listening to what other kids have got to say within the class, their attitudes and values on those particular kinds of topics that we might be discussing."*

Janet: *"Well in the present climate I wouldn't push for that really because people are up to their eyes with, as you know, everything else that's going on and just organising your own delivery of your own subject area takes enough sorting out and planning."*

Peter: *"Environmental education is acknowledged as being extremely important, but, it's only one of the, one of the elements, obviously, of a more or less totally constrained curriculum. And consequently there is, there is little that you can do that is not prescribed."*

One of the outcomes of reforms introduced in the 1980s was the School Teachers' Pay and Conditions Order (DES, 1987) which quantified a minimum of 1,265 annual working hours. Headteachers thereafter needed to be mindful of this figure when they were planning staff time, and formal in-service training sessions had to be accommodated within these hours. At a time when new initiatives were being introduced to schools at an unprecedented rate, there were increasing demands being made for staff development time when there was probably less good-will amongst teachers than for many years. It was inevitable that headteachers would focus staff development time on those initiatives that had statutory backing, and that would be used to make judgements about the effectiveness of the school. Environmental education did not fall into these categories. It was unlikely that curriculum development for environmental education would be a whole-school priority and as a consequence, it was only likely to thrive where there were committed individuals who were prepared to give their time.

It is not appropriate in this study to discuss the issue of time management in detail but Wilkinson (1992) suggests the following as some of the factors influencing how individuals respond to demands on their time and each has implications for environmental education.

- *"I cannot respond until I have the necessary information to hand."*
- *"I'm too busy now to respond to that problem – I'll look again when I have more time."*
- *"Allow the dust to settle."* (pp. 274-275).

Having the necessary information to hand for teachers who are acculturated into the positivist model of education, with the teacher as the expert, is a prerequisite for their teaching responsibilities. They are unlikely to willingly

engage with an environmental education curriculum that is not clearly defined, especially as much of the ERA (1988) reinforced the positivist tradition.

I'm too busy to respond to that problem can be a valid response to managing scarce time until a policy decision is made that enhances the priority of environmental education. Whilst time remains a scarce resource, it is understandable that it will be used for tasks that have been accorded the highest priority.

Allow the dust to settle can also be a valid response that is based on experience. My own experience was of belonging to a mathematics department that invested many hours of time preparing for the introduction of the National Curriculum. At the same time, as we were engaged in co-ordinating our carefully-designed support structures with the interpretation and implementation of externally generated policy, the policy was undergoing major revisions and much of our work had to be immediately redesigned. Subsequent innovations tended to be viewed in this light and we were more likely to *allow the dust to settle.*

One way to overcome these issues for teachers would be to carefully prescribe an environmental education curriculum, but few who are seriously committed to this aspect of education would subscribe to such prescription. In the short term, the way to promote environmental education needs to respond to teachers' feelings: that they no longer have the time to devote to curriculum development. This could be partially achieved by providing support materials that would reduce the demands on teachers' time. Lakin (1996) has pointed out that it has been recognised that there is a pressing need to evaluate available resource material that could be used by teachers. As a short-term measure this would firstly address teacher uncertainty about what environmental education could be, and secondly, would support the early stages of its implementation without alienating teachers by increasing the demands made on their time. The

obvious reservation about such a strategy is that of deciding who would evaluate materials and who would be defining the content and its context.

The next three comments illustrate the anxieties many teachers have about dealing with what are seen to be contentious issues.

Derek (Acting head of humanities in a school situated close to a nuclear facility): *"I think that here there is a curious reluctance to fully debate nuclear environmental issues because of the protectionist concern that these are our local jobs you're talking about. Certainly there have been problems in placing this in any prominent way within the curriculum."*

Tim: *"Yes, there's a danger in citizenship lessons being this is how you should behave. There's a danger there because who lays down what we should do? ... There are many tensions there as to what should be laid down. ...However there is a general consensus on some things. You should not kill your next door neighbour is one of the obvious ones."*

Jo (referring to a nuclear power plant): *"... it's a major employer. You have to remember that so you can't always be as straight as you'd like to be, not round here."*

These examples illustrate the feeling that some issues are difficult to address in schools because there is perceived to be a danger of bias in the curriculum. The assertion that the placing of nuclear environmental issues into the curriculum of a school situated close to a nuclear facility, is perceived to be problematical, highlights one dilemma for schools. The *curious reluctance* referred to is not so curious and the *many tensions there as to what should be laid down* are unsurprising if environmental issues are seen to be dichotomous, i.e. there are 'right' and 'wrong' solutions, rather than teacher/pupil explorations of a web of values and attitudes. It is significant that the first of these two statements comes

from a school with a strong commitment to environmental education. Many of the staff have been involved in the school's environmental education provision and it was one of three schools participating in a LEA pilot project to develop environmental education. Despite this school's commitment, a locally controversial issue is still perceived to be problematical for their provision. The QCA Citizenship guidance on controversial issues makes the generalised statement that *"teachers will need to consider the following"* and includes *"ensuring they take due care for the needs of individuals in the class when tackling issues of social, cultural or personal identity"* (p. 34).

Within a positivist model of environmental education where teachers are expected to be the authority-in-knowledge, these anxieties are unsurprising. Teachers will believe that they should have the answers to questions but will often know that there are no unequivocal certainties. In the interpretivist model where knowledge is externally generated, but often negotiated, there is scope for all to feel that their views have been heard. The QCA Citizenship guidance approaches this stance but having one's views heard is not a sufficient condition for empowering and engaging individuals.

However, it is only in the critical model where teachers and pupils are participants in new problem-solving networks that contentious issues can be seen as issues where all have rights and responsibilities in designing the best compromises, rather than in merely accepting the dominant paradigms. It is likely that the outcome would then be that hitherto contentious issues would become easier to introduce, albeit no easier to resolve. Palmer (1998) reminds us that it is the critical model that challenges existing power relationships. As such, it is incompatible with a New Right, restorationist agenda. The existing positivist model of education reinforces the contentious nature of aspects of environmental education since it is inevitable that there will be some conflicts between what is politically desirable and what is environmentally desirable. Sustained growth in

the market for fossil fuels, for example, is not compatible with careful stewardship of a finite resource. Ecocentric and technocentric approaches to this dilemma would differ.

Only one individual in this study expressed his thoughts about curriculum development in a very personal way but what he said highlighted an issue that almost certainly could be found in more schools.

> John: *"I made a conscious decision that I wouldn't worry about curriculum development. I went through that and did that all as a management role in another school in another time, and my interests moved on so I'm not bothered about curriculum development. If somebody said we are moving to a course, which has actually happened - the GCSE syllabus changed this year - and I think it will be for the benefit, that's fine, and if I don't I have enough clout, for want of a better word, to be able to see what the benefits will be, what will the answers be, and, in fact, I've, in the past undertaken quite a lot of curriculum review, so I'm quite happy to go along with the flow, because a) I understand what's going on, and b) I have confidence in the person who's doing that change, you know, that's an important point, confidence to say, yes I agree. But, actual responsibility for curriculum planning and curriculum awareness - erm, no."*

When asked to say where responsibility for curriculum planning did lie, he replied,

> *"Hard for me to say, because I didn't want to get involved in it, so I just kept away from it.... I presume it would, it rested with the Curriculum Deputy, but again that role has been redefined over the, over the months."*

He expresses that his own interests moved from curriculum planning into other areas. What he also observed was that there had been a considerable period of constant change in his school with roles being redefined to respond to the changes. He paints a picture of a school where teachers' roles and responsibilities changed frequently with the outcome being that even he as a senior manager was unclear about exactly where some responsibilities lay. He admitted that he was no longer sure who was responsible for curriculum planning. In one other school similar confusion was illustrated when a science teacher believed he was co-ordinator of environmental education (albeit he claimed to have no interest in fulfilling that responsibility) and a deputy headteacher was also named as having the role of co-ordinator. Several planned meetings between the researcher and deputy headteacher were postponed, and ultimately he remained elusive. Some teachers in that school thought the co-ordinator was the aforementioned science teacher, but most did not know if there was a co-ordinator. Clearly there was also some lack of clarity in that school about curriculum responsibilities. The implication of this kind of uncertainty for aspects of environmental education provision is that they are likely to be overlooked since they cannot be located with clarity within the curriculum structures that have been reinforced by recent statutory changes. There is a clear need for each school to have a committed co-ordinator of environmental education (Palmer, 1998) and most of the schools surveyed in the earliest stage of this work did not have a named co-ordinator.

The overwhelming impressions of the major constraints on environmental education provision emerging from the interviews in this study are twofold. Firstly, teachers are bounded by the conceptual framework of their role as experts in knowledge. This confines their working strategies within the subject boundaries that are familiar and 'safe territory' and acts as a barrier to their feeling enabled to go beyond those boundaries. Secondly, they are bounded by externally designed educational structures over which they have little or no control. These structures effectively prescribe teachers' time to the extent that

they have minimal opportunity or indeed incentive to venture beyond them. Within the system there is little public recognition or reward for doing so.

Sparkes (1991) summarised this and linked it to the effects on pupils with the following.

> *"These strategies become persistent ways of ordering behaviour through time as teachers and pupils organise both their actions and values to take advantage of their cultural competencies. These behaviours, in turn, are reinforced by a range of structural constraints that they face as teachers, such as, large classes, lack of equipment and other resources, evaluation procedures, the timing of the school day and the length of teaching periods, and the hierarchical organisation of the school" (p. 6).*

A third group of constraints on environmental education provision as perceived by teachers could be considered to be logistical. These did not feature as strongly as the conceptual and educational barriers but were highlighted in some responses.

> Dave: *"We are restricted because of travelling to get to different environments. Sometimes we are restricted by the sheer numbers involved."*

Dave implies that cost and numbers of pupils restrict access to aspects of environmental education in different physical environments. Opportunities for pupils to participate in what Palmer (1998, p. 28) describes as the *"...participatory, problem-solving techniques..."* of education 'in' the environment are reduced by such a limitation, although school-grounds work offers some potential opportunities. Rickinson et al. (2004, p. 41) reviewed research on outdoor learning and concluded that, *"There is significant evidence that social development and greater community involvement can result from*

engagement in school grounds projects." They also pointed out however that, despite evidence that fieldwork has the potential to improve environmental attitudes, the amount taking place is severely restricted. Green et al. (1996, p. 139) reporting a project carried out with school pupils in a wetland area concluded that *"(t)he use of broad environmental themes such as 'change', 'growth', 'habitats' and 'physical processes' has provided opportunity for planning appropriate learning experiences... on environmental damage and pollution and the effects of human influence on the environment."*

So, as evidence of the value of fieldwork for aspects of environmental education accumulates, it appears to be increasingly difficult to provide such opportunities. This is almost certainly linked with legislation governing the charges schools can make for pupil visits off-site. Schools may not charge pupils for visits made during 'normal' school hours and have had to devise intricate ways of funding trips including asking for 'donations' towards the cost. The practical implications of this are that teachers organising trips are likely to have to make a strong case within the context of the National Curriculum. This is not easy to do for aspects of environmental education that do not emerge directly from science and geography. Experiential and aesthetic considerations are unlikely to be considered sufficient in themselves for the undertaking of such visits.

Joan's logistical problem is that of ensuring that appropriate resources are available for lessons she has planned but that are to be delivered by a number of teachers at the same time. She had previously referred to the issue of planning for a group of teachers where skills and commitment could vary from year to year.

"... money is not the only issue but I can do videos for staff ... but it's still a problem getting the six year 8 tutors to all have a video in their classrooms at the same time. It can be an organisational problem."

The immediate concern expressed by Joan is how to effectively deploy the resources available to her but behind that lies the larger issue of where environmental education is situated in the list of school priorities. The 'high value' areas of the core curriculum and the examinable subjects that can be used as indicators of success are likely to be the first priority when finite resources are being allocated. For PSE and Citizenship, which is where the socially critical aspects of environmental education could be developed, they are likely to be less well resourced. This is an inevitable outcome in the prevailing positivist educational paradigm. Joan's problem is really just one symptom of a fundamental flaw in the National Curriculum. It is unlikely that a curriculum that is so soundly rooted in decontextualised knowledge at the expense of socially-grounded learning will promote empowered citizens. Indeed Griffith (1998, p. 141), after a five year study of Citizenship and independent learning in schools, concluded that it was inevitable that the administration of the National Curriculum with its attendant structures would lead to *"...the disempowerment of the majority"* and *"...the silencing of the disempowered."* The socially reconstructive aspect of environmental education is effectively excluded from such a curriculum.

My earliest thoughts about the barriers to environmental education provision were to consider whether any might be merely excuses. For reasons discussed earlier, I realised that I was not in a position to make that judgement. What eventually emerged from the data were three types of barriers that could be categorised as:

- Identity concepts: these are the beliefs teachers hold about the nature of their role as teachers and it is clear that most define themselves as the teacher-as-expert, subject specialist and this role ultimately is the one within which they problem-solve when they consider other aspects of the curriculum. Since the 1988 Education Reform Act this concept has been reasserted and reinforced by statute.

- Education structures: these are the parameters within which teachers have to fulfil their responsibilities and they are clearly designed to reinforce the teacher-as-expert, didactic and disempowered role. The overwhelming focus on examination results combined with a carefully prescribed statutory curriculum have effectively undermined the potential of teachers to reflect on fundamental aspects of their role.

- Logistical issues: these are the practical issues such as time, equipment, training needs that affect the ability of teachers to carry out their tasks. It is clear that some, perhaps most, of these are really symptoms of the previous two. The combination of these effectively confines environmental education provision to the positivist and interpretivist domains.

4.2.5 Code label: Change

Resistance to change is quite possibly one of the greatest challenges in the development of any organisation. What was happening in schools when I was a pupil differed little from what was still happening when I entered teaching. So it seems that without external pressures, education would have continued to reproduce itself ad infinitum. The Education Reform Act 1988 was intended to be the catalyst for massive and rapid change, and the challenge for schools became how to manage that change. Resistance to many of the changes became a fruitless exercise since they were accorded statutory status and systems were introduced to ensure compliance or *enforcement* using the expression used by Josh in this study. Market forces were imposed on the provision of education as far as was possible, and it became possible for schools that apparently did not respond effectively to what was imposed, to pay heavy penalties. They would be identified publicly and might even be labelled as failing schools by the new Office for Standards in Education (OfSTED) inspection system. Parents were theoretically free to react to that judgement by choosing to enrol their children elsewhere. Schools with

falling rolls then found their funding reduced since funding was partially determined by the numbers on roll. Reduced funding ultimately led to reduced staffing. So teachers were faced for the first time with the very real possibility that posts could be lost if they did not comply with externally generated requirements. In the face of such pressure, responding effectively to the demands for change became a consuming issue for school managers.

There is a sense in which much of what was said in these conversations must be about change since teaching is an endeavour that in many ways cannot be replicated between one day and another or between one teacher and another. So some degree of change is endemic for teachers in their daily practice. The mood of one class may change from lesson to lesson depending on uncontrollable factors such as the experience they have just had in the preceding lesson. Dealing with such changes is part of a teacher's skill base. Beyond that there is a degree of whole-school change that is perhaps subtle and unnoticed. For example, new appointments are made to management posts and some changes will be introduced. So there is a constant change process at work that many teachers accept as the environment in which they work.

The point at which change becomes a dominating issue is where it is perceived to be an event rather than a process. The following extracts have been chosen to demonstrate that change can indeed be perceived to be an event rather than a process, and this perception has consequences for the ease with which teachers adapt to change. When Joan was asked what she felt about some aspects of the curriculum (environmental education in this case) being addressed in all subject areas, her use of *reinvent* suggested that she perceived this possibility to be an event rather than a progression in curriculum development.

"I can't see how that would make an improvement on what we've got. It seems to me to make things too complicated, that Maths has been taught for something like 130 years in Britain and they've probably got the idea

of succession and progression between different levels quite well worked out. And to impose this upon them would be like having to reinvent everything and there'd be lots of resistance, I think, from lots of people."

What was unexpected about this response was that, although she co-ordinates PSE and teaches sociology, Joan chose to reinforce her view using mathematics, a subject where the concepts of succession and progression are deeply embedded. This suggests an antipathy to a change event that is not rooted in the potential viability of the proposed change for her own subject area, but rather in a more deeply rooted anxiety about change. It seemed that she was searching for the evidence that would best support her beliefs about change.

Referring to the imminent Citizenship curriculum and preparatory INSET Joan responded:

"It depends who's doing the INSET. I suppose it could raise the quality of teaching if it was brilliantly done and brilliantly resourced. Or people could feel very threatened and despondent. I suppose if we are going to be pragmatic and not simply idealistic, I think it would be a mistake to impose this on people."

There are a number of implications in this response. There seems to be an assumption that the quality of teaching depends on the quality of INSET provision and that is seen to be a one-way process. Good provision undoubtedly would be inspirational and informative, but it should not be the sole basis of good classroom practice. Despite educational reforms that have been increasingly prescriptive, there is still some autonomy in the interaction between pupils and teachers, where the educational process can transcend the strait-jacket of mere transmission of knowledge if teachers have confidence in their skills. This was not the only indication that what Apsland & Brown (1993, p. 14) referred to as *'learned helplessness'* has become endemic in teaching. A second assumption

seems to be that teachers will resist imposition of new curriculum as though there once existed a time when that was not the case. For secondary school teachers there has always been an imposed curriculum in the sense that the syllabi for external examining bodies have been the imposed frameworks.

Joan also referred to feelings of threat and despondency. If the trigger were merely the introduction of new curriculum content, threat and despondency could be considered to be extreme reactions. Curriculum change is a continuing factor of teachers' working lives. Their time-tabled classes change from year to year or new elements enter their subject examination syllabus. What is more likely is the fear of change. If this fear undermines attempts to change education, it becomes necessary to identify its underlying causes. Some causes, such as teacher insecurity about their role in school (the supply teacher), work-load and anxiety about skills (working outside the security of a clearly defined subject area) have been expressed clearly in this study. Others, such as empowerment in the change process, trust in policy processes, understanding and support of policy objectives, management support for effective change, acknowledgement of efforts and outcomes, have been suggested in the literature. Writing in the wake of the beginning of major educational reforms in developed economies Fullan (1991) observed that including some teachers on curriculum committees did not engage all teachers. He continued:

> *"The fact that those who advocate and develop changes get more rewards than costs, and those who are expected to implement them experience more costs than rewards, goes a long way in explaining why the more things change, the more they remain the same. If the change works, the individual teacher gets little of the credit; if it doesn't, the teacher gets most of the blame"* (p.127).

He continues by observing that the evidence suggests that change attempts fail more often than not for the aforementioned reasons.

The reservations expressed by Jan about change are more explicit. She articulates the need to be confident about what is expected before change is embraced. This need to feel that they are doing the 'right thing' surfaced in a number of guises and implies a lack of teacher self-confidence in their potential to influence curriculum design, or even create curriculum. Given their politically-designed absence from the designing of the national curriculum, this is unsurprising. Graham with Tytler (1993) recorded their experience at the National Curriculum Council throughout the designing of the national curriculum and it is clear that teachers were intended to be an absent voice.

> Jan: *"I think teachers have carried on. I think partly, not* (pause) *not because they're immensely resistant, although there is resistance I think, but because it's not, it's still not clear to them how it can be done. I still don't think that management has made clear quite how departments can contribute towards the whole thing."*

Once again this is a perception of change as an event rather than a process. She believes that all the questions need to be satisfactorily answered before change is implemented. Professional development for a change event could be provided with clearly defined in-service sessions, where all the facets of proposed change are described, and teachers then implement what has been described. However, for a continuous change process, professional development becomes considerably more complex. Apsland & Brown (1993) suggest,

> *"If teachers are not expected to develop their own adaptive behaviour to meet situational realities there is a danger of a form of 'learned helplessness' in which they become dependent on external expertise, rather than their own capabilities to solve problems.... When the learning of practical skills focuses on acquiring behaviours, rather than on cognitive processes, deskilling becomes endemic in the context of change"* (p.14).

They continue by pointing out that the current model of professional learning, both at the teacher training stage and the continuing professional development stage, *"... arguably holds the seeds for an increase in demoralisation, deskilling and dependency amongst many teachers* (p. 21). Jan's response suggests that *'learned helplessness'* and deskilling and dependency are now elements of many teachers' professional identities. Indeed, it was reported by Rebecca Smithers in the Guardian (13-04-04) that the Chief Inspector of Schools, David Bell, urges that teachers *"... regain the initiative in the classroom..."* and that they should not *"...regard themselves as helpless victims of instructions from above."* He continued by observing that government targets serve more as a threat than a motivator in schools. Ministers were reported to be infuriated by that suggestion. As early as 1993 Graham & Tytler were expressing reservations about the continuing exclusion of teachers from curriculum processes. They had supported the imposition of a national curriculum on people who had not been professionally involved (teachers) in order to "... *galvanise them into action ...*" but an essential concomitant was considered to be an eventual return to partnership.

> *"Unless teachers take the national curriculum to be their own within a wider partnership and are given some kind of role in curriculum development, there will be no real progress in raising standards. The game plan, which nobody contested, was that once a short sharp shock had been delivered and the curriculum was beginning to enter schools, the council would reopen partnership with teachers That has not happened, even though it has been shown that where teachers have become involved, as they did in testing, for example, there have been improvements"* (p. 107).

Ten years later the indications from teachers involved in this study are that they still do not feel they have a role in curriculum development and that they are indeed becoming what Apsland & Brown described as *deskilled* and *dependent.*

This deskilling and dependency manifest themselves, at least in part, in the reluctance to embrace change that is not clearly defined for them.

What are the implications for environmental education? If deskilling and erosion of professional confidence, and the dependency on external expertise rather than their own capabilities *have* induced *learned helplessness,* and there is some evidence emerging from this study that that is the case, then there is less likelihood that teachers will confidently embrace curriculum that is loosely defined. By association with the introduction of the national curriculum, environmental education is likely to be perceived by many teachers as a change event and only those aspects of provision that have been well-defined can be confidently embraced. So, the positivist and interpretivist domains of environmental education will be less of a challenge to teachers' professional confidence than the critical domain where the teacher enters a process of collaborative enquiry with pupils attempting to construct knowledge. As a consequence environmental education is most likely to be confined to national curriculum attainment targets in traditional subject areas. Graham & Tytler (1993) alluded to some of the tensions that emerged during the design of the geography curriculum including the political pressure to privilege knowledge attainment targets and the conflict about whether geography should be the principle vehicle for environmental education provision. Sterling (1996, p. 18) observed that "... *if it is to fulfil its potential as an* agent of change *towards a more sustainable society, sufficient attention must be given to education as the* subject of change *itself*". In the absence of a strategy to re-engage teachers in curriculum development, any substantial emergence of environmental education from the confines of the positivist and interpretivist domains of the geography and science attainment targets is likely to depend on the presence in a school of a teacher with a strong personal commitment. By design or default, this is an acceptable outcome for the New Right supporters of a restorationist, instrumental curriculum.

4.2.6 Code label: Avoidance issues

The following extracts were coded as 'avoidance issues' rather than barriers because they refer to specific omissions relating to existing provision in schools. It became clear at an early stage in this work that teachers were describing many barriers to environmental education provision, some of which were evidently difficult for individual teachers to overcome. Most of the reservations expressed were of a generalised nature but the following few were more specific. They seem to be characterised by choice rather than perceived necessity. It is significant that specific reservations were made by teachers of geography and RE where there is some prescribed environmental education content that generates ethical issues. For science teachers, where content is confined mainly to defined knowledge, specific reservations did not emerge in this study. There is apparently security in defined knowledge.

Derek, who taught geography in a school located close to a nuclear facility, referred to the difficulty of addressing nuclear issues.

> *"But I think there are problems in fully debating the issues around here because of people's sensitivities. So I don't think that we paradoxically take a head on view of these in our studies, whereas if we were in a school a hundred miles away it might seem somehow easier for us to discuss the nuclear issues.*

Implicit in this is the reluctance to challenge pupils about their own attitudes; that somehow in doing so teachers would be invading pupils' personal spaces. He acknowledges the paradox of avoiding fully discussing his pupils' life world. There is also an underlying assumption that pupils and teachers inhabit different worlds although he also lives and works in a community that is dominated by the nuclear facility and is subject to its influence.

Each of these issues is exacerbated by the dominant positivist educational paradigm where the teacher is expected to be the expert-in-knowledge; where education is essentially vocational; where pupils are passive recipients of knowledge and where power relationships are reinforced. Teachers and pupils are 'different' and 'separate' beings rather than collaborators in a critical educational paradigm. In the dominant positivist paradigm the empirical and aesthetic components of environmental education can be developed but the ethical component is problematical. Palmer (1998, p.269) suggests that curriculum design should answer the question, "... *does the programme contain ethical dimensions; encouraging learners to ask if the criteria of proposed actions are based on morally justifiable values?"* If teachers believed they were empowered to explore ethical issues with their pupils, this reluctance to *take a head on view* would be less problematical.

Carolyn, who also taught geography but in a city school, described what is fundamentally the same issue albeit she was referring to pollution from the chemical industry.

> "*But I think implicitly I know there has been some reluctance to use the local examples and the local examples don't appear in many textbooks as it happens. So we appear to be quite happy to discuss the polluting effects of quarrying, we seem to be quite happy to look at Japanese pollution of industry and the pollution in Tokyo Bay, but not necessarily to discuss the local examples.*"

Derek and Carolyn both referred to uncertainties. Janet however expressed a confidence that was founded on her prescribed curriculum and her belief that she was doing what she was supposed to do.

"I'm quite happy that I'm doing what I should if I'm delivering my bit about animal rights, the world we live in, drug abuse, alcohol abuse, abuse of the body in general, and the sanctity of life, abortion, suicide, euthanasia. I'm quite happy that I'm doing what I'm supposed to do. And we haven't got a person in Senior Management, or a person paid an allowance to check on this. So, you would asking for a voluntary offering, and I don't think at this stage in education anybody's prepared to do anything voluntarily."

Her observation about voluntary action is almost certainly the outcome of the increasing control of teachers' time that has been discussed elsewhere in this work. Her observation about *no-one who checks* reinforces a further specific avoidance issue. She teaches in the same school as Sean.

Sean claimed that, when senior managers redefined job descriptions, he was informed he must co-ordinate environmental education. This was not a responsibility he wanted and he had no intention of doing anything about it unless he was under pressure to do so. A deputy head in the same school also claimed to be environmental education co-ordinator but would let me know when he had time to see me. On my final visit to the school he still was not available for me to speak to him. The initial questionnaire return for that school stated that there was no environmental education co-ordinator.

In one other school a similar situation was encountered where a recently appointed PSHE co-ordinator claimed that he applied for the post purely on financial grounds. Part of his remit was environmental education but he *'knew nothing about it.'* He took the opportunity to ask for my help with suitable resources he could use. He was particularly concerned with how he could assess environmental education curriculum. I undertook to draft a sheet for inclusion in pupils' Record of Achievement folders and sent it to him. He had agreed to meet me again to discuss their use but all subsequent attempts to arrange a meeting

were ignored. I could only assume that he considered environmental education to be a low-priority aspect of his role.

It seems that in these two schools, senior managers acknowledged in principle that environmental education should be addressed in the school but in practice it was accorded a low-priority. Heads are now faced with the problem of deploying a limited pool of staff. This is a manifestation of Ball's (1994, p. 93) claim that "... *the effective reconstruction of the head's role, as budget manager, entrepreneur and promoter of the school, diverts the values, purposes and concerns of the head from matters educational to matters financial and managerial.*" As promoters of their schools these heads have considered it necessary to appoint environmental education co-ordinators. As budget managers they have made appointments within financial limits rather than on educational grounds. This exemplifies a growing tension between teacher professionalism and market forces as the basis for educational decision making. The implications for environmental education are likely to be that it will remain low on the list of school managers' priorities.

Two issues are illustrated here. Firstly, teachers are reluctant to engage with ethical issues if they are not required to do so. Some choose to avoid discussing a nearby nuclear facility with its obvious implications for environmental education. Secondly, management flexibility to assign responsibilities to the most appropriate individual on the staff is sometimes reduced to the extent that a nominal appointment is made to a teacher who will avoid the responsibility. Both are likely to limit environmental education provision to the confines of prescribed curriculum.

4.2.7 Code label: Environmental Education Concepts

As the literature review demonstrated, there are theoretical complexities inherent in the term environmental education so the interview transcripts were

searched for statements about teachers' understanding of the term. It is clear from the literature that environmental education can embrace a diverse and shifting range of concepts and its shape and form are dependent on the paradigm within which it is located. Firth & Plant (1996) used Habermas's (1972 &1974) theory of knowledge constitutive interests as a basis for their summary classification of paradigms. Palmer (1998) described these as the tripartite positivist, interpretivist, critical models. The three paradigms would not be considered by environmental educators to be discrete but rather as "... *'shifting territories' – which are closer or further apart from each other, and to a greater or lesser extent contested ...*" (p. 196).

- The empirical/analytic approach where knowledge is considered to be externally generated. This type of knowledge is constructed from evidence collected via careful observation by a detached and objective observer. It can be used to predict or control future events.

- The interpretivist approach assumes that knowledge is mutually negotiated and is subjective. It is specific to a time and place and can be used to promote understanding.

- The socially critical approach acknowledges that knowledge is a complex concept with power structures and social inequalities at its core. It reflects the interests of groups in society and is not value-free. It is within this paradigm that knowledge can lead to social transformation and indeed it is deemed that it should be a tool for the improvement of society rather than a mere intellectual indulgence.

Defining environmental education within each of these paradigms is not entirely straightforward in the current climate where there is continuing theoretical debate about what environmental education might be and where there are no clear boundaries between these paradigms. However, some models of

environmental education described by the teachers in this study have characteristics that locate them more firmly in one paradigm than in the others.

An empirical/analytic approach is likely to generate an environmental education model that is limited to the knowledge and skills domains. This will have evolved from the nature study aspect of the curriculum where observation of the environment was related to scientific knowledge about what was being observed. This knowledge could then be used as the basis for learning skills that could be used in a 'natural' environment. This approach reflects a utilitarian curriculum where environmental problems are most likely to be addressed in a reactive way. So where are teachers' concepts located? The following responses reflect a concept of environmental education that is mostly located in the positivist or empirical/analytical approach. This focuses on the notion of developing responsible behaviour through knowledge of the issues. The example Cate chose suggests an issues-based approach.

> *"... when I talk about environmental education, I don't think of it being on a small scale as related to the school. We talk about that and then in different scales, so on to the larger cutting down of rainforests."*

Mel, who was co-ordinating the pilot environmental education project and had a community-based development education background had the following to say:

> *"I think that development educators have a view of what citizenship means. I don't think that the curriculum board have the same view."*

She continued by listing activities like recycling, tree-planting and litter-picking that she had observed to be the focus of school curriculum policy statements. Her perception was that for schools, environmental education was issues based.

Harriet expressed a rather different view about what environmental education should be.

> *"I believe it should be outside and it should be part of some sort of outdoor education experience. I've taught environmental education in America and I believe the way for pupils to really understand and learn about their environment is to be in it and to do hands-on activities and discussion based on that experience."*

Her experience was within what she described as a modified version of the Van Matre Earth Education programme. Pupils were given outdoor experiences to foster appreciation of a natural environment with the hope that attitudinal and behavioural changes would follow and she accepted that premise. However, it became clear that she based her beliefs on her short-term experience of working outdoors with pupils rather than any reflective perspective on the longer-term outcomes of the Earth Education programme. She seemed to have accepted without question the programme's assumption that exploration of the human/nature relationship would necessarily lead to knowledge and understanding of the environment and behavioural changes would follow. It seemed that she considered the programme to be an environmental education programme in totality rather than a contributory experience. Bognor (1998), reporting his study of about 700 secondary school pupils who participated in either a 1-day or a 5-day outdoor ecology programme, concluded that an outdoors experience *can* lead to behavioural change but only if it is of sufficient duration. However, he also reported that at the pre-testing stage the pupils were "...*more willing to act than 'average' populations were*" (p. 24) possibly because of self-selection or pre-sensitising. So it is not certain that the improvements shown in the study's post-testing could be replicated in a wider school population.

Jenny first asked if I meant felling trees, pollution, overcrowding and poverty and was persuaded to say what she meant.

> *"Looking after the environment, being responsible,* (pause) *educating children to be aware of it and their responsibility towards it for the future."*

There was a considerable degree of uncertainty about her responses. She began by listing issues and continued, after some hesitation, by suggesting a stewardship theme.

Joan was confident in her response. She had responsibility for preparing material for the following.

> *"We spend probably about six 15 minute registration periods ... looking at the environment...there are various little exercises on causes and effects, causes and consequences of pollution...we look at smoking as a pollution issue ... but it's not very well developed."*

Two things emerge from this. Firstly, provision is issues based and constructed around causes, effects and consequences. This positions the provision firmly within the knowledge domain. Secondly, six 15 minute registration periods is a paltry allocation of time to environmental education and it is unsurprising that it is *not very well developed.* This suggests that this school's management team is satisfied with the bare minimum of environmental education provision outside the prescribed curriculum. There is little space here for collaborative examination of values issues.

Tim's response was little more than a list of topics that he considered to be about the environment. His use of *about* implies a bias towards knowledge. It was surprising that it was limited in such a way given that he was a teacher of RE and PSE where the policy statements have more potential for interpretation within

a values agenda. Even though he knew in advance that our conversation would be about environmental education, this was an unexpectedly superficial concept.

> *"Erm* (pause) *education about the surroundings in which we live which usually includes the biological surroundings, plants and animals,* (pause) *but I would imagine it would also include the man-created environment such as buildings, man and society and things like that. So it covers quite a great deal really.*

When pressed to say something about his thoughts about education for sustainability, he replied, *"I'm not sure. Sustainable forest type sustainability – is that what you mean? Because I don't understand the term."* He then described what he perceived to be environmental education provision in RE and PSE with the following.

> *"Obviously people and the way people believe and feel, both the Christian Fellowship and RE, that is very much into the forefront actually, because there's RE studies that, what people feel, what people do, how people live, and that's an education in itself* (laughs), *that the youngsters learn how each other sometimes* (pause) *but certainly how other people live."*

The emphasis is clearly on interpersonal relationships and he made no reference to any relationship with the environment. His concept of environmental education seems to be firmly rooted in the knowledge about the environment domain and indeed, his use of the expression *learn how* seems to root the interpersonal relationships aspect of provision in the knowledge domain also.

George also referred to interpersonal relationships including feelings and attitudes. He stopped short of including the values underpinning those.

"(I)f I was talking about environmental education..., my first thought would be, is it making kids aware of their responsibilities of protecting their environment as opposed to looking at the ways they operate within that which is like social relationships ?... (I)f it is the latter... it becomes social, interpersonal relationships, then I would suggest that implicitly and tacitly there is within every lesson in English an aspect of environmental education because whatever issue you're dealing with in English, other than maybe if you're dealing with certain core or basic skills, necessarily it involves thinking about personal relationships and feelings and attitudes".

The activity of *thinking about* an issue is so generalised that it conveys little without some additional qualifying or explanatory text. However, the use of *implicitly and tacitly* implies that assumptions are being made that by some process of osmosis pupils would necessarily gain.

This group of responses seems to reflect the belief that environmental education should be about developing environmentally responsible behaviour by understanding the issues involved. It has to be acknowledged though that none of them was articulated in precisely those terms. Indeed a degree of uncertainty was evident in some of the language used (*I would imagine it would include...* and *...but it's not very well developed...*) in the pauses before some responses were made and in Jenny's apparent need to know what I meant by environmental education. The most confident response came from Harriet who was the only individual who had experience of working with a prescribed programme and it seemed that she had uncritically accepted the premises of the programme. Gayford (1996) carried out a survey that included 87 secondary school teachers. He focused on asking questions about sustainability and 'green attitudes' and found that all teachers thought the main purpose of environmental education was to develop responsible behaviour. The uncertainty that emerged from some of my interviews might reflect a lack of confidence in their understanding of what environmental education should be or might be a reflection of the fact that they

were being asked to express their own beliefs rather than choose a response from a selection of mine.

Angie was unusual in this study as she was an individual who expressed strong personal commitment to environmental issues and yet there was little evidence that it had a significant influence on her practice in school.

> *"... you've hit on my cause in life, the environment and animal rights. ... I think it's only the knowledge and skills really. The work I've come across, it doesn't try to push things either way. I think it's just a topic we've practised."*

At this point there was a degree of animation to her response that had not previously been evident. She admitted to being a member of the Green Party and articulated her personal commitment to animal rights activities but there was little following evidence that she had a wider concept of environmentalism and the implications for environmental education. She referred to knowledge and skills but volunteered no reference to values and attitudes. When questioned directly about values and attitudes, her response was, "*It's quite difficult in languages. I think it's got to be more the knowledge side of things. Perhaps in science, I'm not really sure how you can push it in other areas and justify it.*" This observation that the values and attitudes dimensions of the curriculum might *perhaps* be developed in science coupled with the observation that she is not sure how it can be *pushed* or indeed justified in other areas suggests a limited concept of what environmental education might be. Her use of *pushed* seems to imply imposition rather than the exploration that would characterise a critical educational mode. Her teaching experience seemed to be limited to having to deal with a defined topic within the curriculum and her responses suggested that she unquestioningly fulfilled a teaching role that had been defined by others.

Throughout the conversation Angie repeatedly made negative reference to her status as a supply teacher. Here was an individual who seemed to believe that her supply teacher status limited her role in practice. Some of the issues for supply teachers are really extreme examples of what Griffith (1998, p.138) refers to as *Curricular Disorientation.* This is particularly acute in secondary schools and he includes lack of connections between lessons, lack of connections within lessons on the same subject and teacher absence resulting in supply cover. So clearly Angie's supply teacher status will have particular difficulties to resolve but, if she confines her understanding of environmental education to the knowledge and skills domains, the absence of continuity in her teaching will limit her potential as an environmental educator. If however she were aware of the opportunities to address the values and attitudes domains, the lack of continuity would be less problematical for her although it would remain so for pupils.

For Angie there are certainly limiting factors (such as the *curricular disorientation* referred to by Griffith) beyond her control however there are also unrecognised opportunities for her use her personal commitment to environmental issues in a classroom situation.

Janet's response was unique in one way. She is a teacher of RE and, as she describes, has aspects of environmental education prescribed within her curriculum. She was confident that she addresses environmental issues but she has the security of having those defined for her albeit by the tenets of the world religions studied within the context of a politically prescribed curriculum.

"Well all the world's major religions believe in a creator... and all religions believe that human beings are elevated above the level of animals because they are made in the image of God ... and He gave them the command to look after it, in all religions they were to look after it, protect it and preserve it."

She continued with, *"I don't think that. That is what the major world religions would like me to teach and that is what I do teach."*

Her response is framed within the parameters of a defined RE curriculum and might be a territorial defence. Lofthouse (1993, p.83) drew attention to the anxieties amongst RE specialists that *"...their subject is now the subject of a take-over bid; the 'God slot' without God, religious studies without religion – in a word, citizenship."* Janet then pointed out that she teaches what world religions want her to teach with the assertion that it is not necessarily what she thinks herself. Lofthouse (1994, p. 89) acknowledges that RE teachers may have anxieties about the integrity of addressing issues where there is a degree of confusion but he believes that *"(p)ersonal belief, or lack of it, does not however preclude teachers from entering into a serious consideration of values and behaviours. It is precisely at this point that colleagues working across RE and environmental education need to make common cause."* On the grounds that she did not confuse curriculum content with her personal opinions, she would not be drawn on those and it is possible that that was a convenient defence mechanism to mask personal uncertainty. There does seem to be an element of territorial defence here that is not surprising if someone has constructed their professional confidence around the safety of a defined subject area.

Janet was not alone in referring to the dilemmas inherent in addressing curriculum issues where there is conflict, confusion or controversy. In the dominant positivist education paradigm these dilemmas can seem to be intractable. In a critical paradigm they become the foundations for constructing socially reforming knowledge that challenges hegemonies and this is incompatible with the restorationist agenda of the New Right.

Of all the teachers who participated in this study, Don made the clearest statement about the political nature of environmental education. Indeed one teacher expressed the opinion that politics had no place in education.

Don: *"At the end of the day it is a political matter, it cannot be separated, it is not a purely scientific or academic exercise. The way the environment is managed and the way our effect on the environment is managed is purely down to human choice ... So if it were to be taken seriously you can't have your cake and eat it – have environmental education as a subject part of the curriculum but we're going to steer clear of all the nasty arguments that crop up. The nasty arguments are the important bit in many ways."*

Although most teachers were aware of the political control that had constructed the National Curriculum; had introduced assessment procedures; had defined employment conditions and increasingly controlled classroom practice, there was little overt expression of understanding that curriculum content was also politically controlled and that knowledge could be manipulated for political ends; that there is a 'politics of official knowledge'. Apple (1996) points out that curriculum is never a neutral assemblage of knowledge and is always part of a selective tradition. He goes on to say that his work is rooted in insights about "... *the complex relationships between economic capital and cultural capital, the role of the school in reproducing the multitude of unequal relations of power (ones that go well beyond class, of course), and the ways the content and organisation of the curriculum, pedagogy, and evaluation function in all of this"* (p. 23). Arguably, at least part of the New Right agenda in excluding practitioners from the development of the National Curriculum was to ensure that teachers were deprived of opportunities to develop such insights.

Don then continued with the following:

"I think we have to give people an awareness of where they are in time and space and that awareness should lead them to understand the different (social, geographical or historical) factors which have created their local environment and in understanding that they have to be aware

of the global issues that pervade any local environment. But it isn't a matter of just knowledge and understanding. We obviously have to transmit, develop, nurture skills in what they are doing in order to study the environment. We also have to challenge their values."

What was unusual about Don's responses is that they came from the head of a science department where his subject policy statements are confined to knowledge about the environment. Not only did he have a deeper vision of what environmental education should be but he explicitly acknowledged the political aspects. However, his views were predicated on *if it* (environmental education) *were taken seriously* and he did not believe that was the case.

The following two responses typify the rhetoric about environmental education that emerged in several interviews.

Josh: *"That's difficult because environmental covers such a wide area ... I want kids to be responsible for people when they go out. ... They need to make sensible decisions about ... the environment thing, like ethical issues, Third World things, poverty in our own country and stuff like that."*

Brian: *"Very simply, two words, respect. ... and community. I think every subject is placed where they can contribute something but some are better placed than others."*

In themselves they are anthropocentric approaches and some would challenge that focus. More important is whether there was any evidence that the rhetoric is realised. Josh is clear about what he believes the outcomes of environmental education should be but the difficulty he refers to implies he is uncertain about the processes for achieving those. Brian identifies affective dimensions of learning and then immediately confines them to subject areas. He did not make the connection between *respect* and *community* and the school ethos. Griffith (1998,

p.219) explored the rhetoric of citizenship education and concluded that there "... *seems to be no shared agenda that members of the existing adult citizenship have for the education of those who will be citizens of the future."* That seems to be the case also with environmental education. Beyond the confines of prescribed curriculum there seemed to be no recognisable shared agenda or indeed any agenda at all. There was some evidence of rhetoric about objectives relating to improved attitudes to the environment but little beyond that.

In stark contrast to the vision expressed by the head of a science department, a head of an English department had the following to say about how environmental education was addressed:

> George: *"So, it's very much guided by individual interests I would say. You know, not straight. Certainly the National Curriculum as far as I can remember, there's no special ... in the programme of studies, awareness of the environment. I can't think of somewhere as a discrete element."*

In this school at least there was a missed opportunity to locate environmental education provision beyond the science, geography and RE/PSE slots on the timetable. It is likely that teachers who are English specialists are more inclined to deconstruct all texts where others may only do so if the text appears to them to be controversial. An English curriculum which emphasised textual and discourse analysis could make a significant contribution to promoting skills that would enable individuals to develop greater insight into the prevailing discourse. The implications for environmental education would be a greater understanding of the political, economic and social issues that need to be addressed. Environmental education might then be perceived to be more than knowledge and skills based and the values/attitudes strand might become embedded in the curriculum.

For any aspect of the curriculum where the content is not clearly defined, what individual teachers believe is likely to have a critical influence on provision. Environmental education policy documents might be seen to be open to flexible interpretation in order to best respond to shifting needs or they might be interpreted as being planned to create a degree of confusion within which implementation is trapped by the inertia of policy fatigue. Flexibility is theoretically desirable if teachers have the confidence to accept the responsibility and power to interpret policy. If that confidence does not exist, then they need a range of support mechanisms to develop environmental education.

What became clear from these interviews is that once prescribed curriculum content has been delivered, there is little understanding of a holistic model of environmental education. With few exceptions the most confident responses came from those who can refer to detailed curriculum statements.

4.2.8 Code label: Reasons

One of the original objectives of this study was to uncover teacher beliefs that related to environmental education provision. Earlier discussion has shown that beliefs are not easy to define or to categorise. As the interview texts were being interpreted it began to seem that where teachers articulated reasons for any part of their practice, the reasons given might be the keys to some of their beliefs. For example, the co-ordinator of a local education authority pilot project observed that it had been more difficult to recruit secondary than primary schools and, whilst recognising that secondary schools were different from primary schools in many ways, had found some of the reasons given to be unconvincing.

Mel: *"Somebody said two years into secondary school the pupils are just not motivated environmentally. Maybe it's not trendy or something but*

pupil motivation is another problem that they have. So it seemed that a different approach was needed."

This comment was made to Mel when she made informal enquiries about the reasons why one of only three secondary schools that joined the pilot environmental education project had dropped out. When the nominated teacher representative became ill at an early stage, the school offered no replacement. This was a project with funding for the school to finance supply cover for staff involved and yet still the school did not prioritise environmental education development. Clearly in this case, staffing levels alone cannot explain the lack of commitment. Her observations about *pupil motivation* and a *different approach* suggested were indeed reflected in many interviews. So it seemed that reasons given for action might indeed be a route into beliefs.

What then can be inferred from the following response from Tim?

"I'm not qualified. I've got to that stage where I'm getting too old to take mountaineering certificates now. You know you've actually got to be a mountaineer as well now."

Here was an individual who had talked at some length about his outdoors experiences. He claimed to derive considerable emotional and spiritual benefit and yet, when the issue was probed with *'If it were possible, would you like to give all your pupils those experiences?,* he reiterated that he was not qualified to do so. When asked about the part teachers might play in developing pupils' behaviours he replied,

"I think we should be involved with this, in the sense that behaviour within the school is certainly our remit, and we should be able to impinge on that and conduct youngsters through that, talk them through it, disciplining them through it, enabling them to, and basically, I mean, yes, lay the law

down and say look this society that we have here, in this school, we do not accept this, we accept that, and why we accept this, why we don't accept that. Youngsters need to learn that as they grow up, it's one of the points about growing up."

From a personal perspective and as leader of the Christian Union group in school, he spoke of moral and spiritual issues and their importance but consistently outlined barriers to their inclusion in a school curriculum. He believed he should be involved with behavioural issues but confined that within the school context as though pupil behaviour elsewhere was a different issue. He also saw that involvement as being to impose the expectations of others on pupils because that is what they will experience throughout their lives. This was a clear statement of the belief that the purpose of education is to maintain the status quo. Pupils were to be prepared to occupy a predetermined space in society. There was a feeling that his personal life was lived quite separately from his professional life. Tim was not unique in revealing a separation between personal and professional lives. Several teachers seem to believe they must present an image of neutrality to their pupils. This is unsurprising for teachers who believe they are expected to be experts in a body of neutral knowledge and who are working in an environment which effectively closes the opportunities to reflect on that assumption.

Peter gave as his reason for doing little outdoors work that he is constrained by time and it is likely that it is indeed one factor outside his control. Peter claimed to be an environmental scientist and was teaching science where there is a statutory entitlement to provision that includes prescribed environmental components.

Peter: *"We don't do an awful lot of outside practical because it is time-consuming. By the time you've got the children across the field and over*

the other side, they've only got 25 minutes or so before they come back so, in my view, it's actually more efficient to teach them."

What is most revealing however is "... *in my view, it's actually more efficient to teach them*". Does efficient mean more effective learning takes place? Is he thinking of cognitive or affective learning? His use of the word *teach* is likely to reflect the pressure he experiences to cover the prescribed curriculum within a predetermined time limit. It seems that efficient use of teaching resources has displaced the concept of effective learning. Peter also revealed that he believes that pupil experiences outdoors are somehow fundamentally different from and indeed inferior to a didactic classroom experience. He was not the only individual who perceived out-of-classroom experiences to be somehow inefficient or even unnecessary distractions but he was the only one to articulate it so unequivocally. Underpinning the practice of didactic teaching is the concept of dependent learning where pupils are reliant on others for their development. Griffith points out that the implications for global citizenship are that they become "... *morally and intellectually dependent on others and therefore unable to exercise their educational and ethical rights of critical and self-critical reflexivity, moral concern and participation.*" (p. 51, my emphasis). For environmental education this would mean that any environmental knowledge and skills they have learned cannot then become the foundations on which they can construct socially transformative actions.

In the early stages of this project a survey was carried out with 104 university students who were embarking on their professional training year. There would be no opportunity to follow up with interviews but the outcomes might have indicated some significant differences between their expressed opinions or beliefs and those of practising teachers. When asked about whether they expected to be involved in environmental education provision, a worrying proportion claimed that they did not.

"I do not have the personal commitment" was the response from 16 students and *"I do not intend to include environmental education unless required to do so"* from a further 15 students. These responses suggest that at least a quarter of them are unlikely to engage in environmental education provision unless either they are required to or their experience in that year changes their beliefs about their teaching role. Subsequent discussion with the tutor in charge of the PGCE course revealed that there is little opportunity to formally include environmental education for all students since statutory requirements for the course ensure that time is a scarce resource (Pers. Comm., 2001). So from the beginning of their career a significant number appear to have no reason to engage with environmental education and their career will develop within structures that provide little opportunity for reappraisal of that position.

Huckle (1996) observes that teacher education for sustainability is taking place in a climate where the New Right's distaste "... *for theory means that fewer younger teachers get the opportunity to understand children's learning and to reflect on the social context of education. Teacher education risks becoming an apprenticeship rather than an induction into a professional culture that values diversity, autonomy and critical debate"* (p. 116).

Oulton and Scott (1998) pointed out that the question of who would be working towards the desired ends of environmental education remains to be addressed. There is an assumption that the necessary skills, resources and motivations are in place and in most schools and colleges they are not. They say:

> *"Tutor's competence needs to be developed, and their awareness raised. In other words, programmes are needed whereby experts work with teacher educators in this area. Where is the staff development for this to occur?"* (p. 260).

The recommendation of the Toyne Report (1993) that by the year 2000 all FHE institutions should have developed the capacity to provide all students with the opportunity to develop defined levels of competence relating to responsible global citizenship is clearly problematical to realise. Ali Khan (1999, p.4)) when setting out criteria for effective sustainability teaching, points out that "... *education for sustainable development can motivate teachers and pupils resulting in effective teaching and learning which meets many established educational goals.*" Given that assertion and the worrying proportion of trainee- teachers who express no reason to engage with environmental education, there is a worrying absence of opportunity for them to develop their personal environmental education knowledge, skills and attitudes and they are likely to enter teaching with an incomplete 'tool-kit'.

Two things appear to underpin the reasons given for not fully engaging with environmental education curriculum. The first emerges from resource constraints and assumptions about how best to use available resources to address the demands made by the curriculum. Scarce resources are directed towards the priorities defined by the National Curriculum. The second is under-development of teacher's personal environmental education with the consequent deferral or displacement of responsibility for that aspect of the curriculum. Both are really symptoms of the low priority accorded to environmental education.

4.2.9 Code label: Personal opinions

The following apparently disparate extracts were drawn together because they contained some indication that what was being said was a personal viewpoint. Much of what emerged from these interviews otherwise seemed to be expressions of the 'party line' and whether individuals had given consideration to how or if policy was congruent with their own beliefs was not explicit. These were coded separately as a way of discovering if they revealed attitudes and beliefs that were

fundamentally different from those being expressed by individuals when they were using their 'teacher' voice.

> Clive: *"I can be passionate about my own argument but I'd obviously make it quite clear that it is my personal point of view and my point of view is by no means the correct point of view and I'd give them an opportunity to think about what their own opinion and their own point of view is, look at the facts and make up their own minds."*

Here Clive apparently reveals a reluctance to defend his own point of view. He seems to be confident about stating what that might be but then avoids engaging with pupils in a debate about its merits. He deems it sufficient to present the facts and then to leave pupils to interpret those and develop their own opinions and attitudes. This is very similar to the need expressed by many teachers that they be seen to present what was frequently referred to as 'balanced' information. This simplifies the process to that of transmission of information either about his views or about environmental issues. Learning becomes the 'banking' process described by Friere (1993) rather than a process where pupils and teachers are engaged in a collaborative process of constructing an environmental discourse.

> George: "*I think we have a duty, and all teachers have a duty anyway to act as role models, and, you know, you know, according to debate, either informally within the lessons, or just, you know, informally, you know, in the sort of way that they would relate to pupils anyway."*
>
> And *"I think... some of the worst role models you can see are teachers, aren't they?"*

Although these two comments were not made as parts of one response, their apparent contradiction was obvious even at the time of the interview. George

seemed to be oblivious to the ambiguity of teachers with a *duty* to be role models who are also some of the *worst role models*. When probed about this point he used as his example the issue of schools where smoking is allowed for staff. Embedded in this seems to be some reluctance or even anxiety about personal responsibility for what is acknowledged to be an aspect of the curriculum albeit one that would be difficult to define. Perhaps there is a fear that teachers accustomed to the role of authority in knowledge might be seen to be less than perfect. This appears to be similar to the phenomenon found with the overt, prescribed curriculum and the safe territory of constructing the teacher role as transmission of subject-specific knowledge.

If such anxiety were as widespread as this study suggests, environmental education is likely to be confined to the positivist and interpretivist dimensions described by Palmer (1998) where curriculum content can be defined. Indeed this study suggests that that is the case. For environmental education to enter the critical dimension, the role of teachers will need to be redefined from authority in knowledge to collaborative inquirer. Such a transition is unlikely within the New Right/neo-liberal agenda where teachers are expected to be disseminators of pre-existing, pre-determined knowledge.

Mel was the co-ordinator of the pilot environmental education project in Cumbria. She was not the only individual to question whether the school curriculum was the most appropriate location for environmental education to take place.

Mel: *"My view is that it's not really enough for it to be in schools, that my own priority would not be developing it in schools. I'm more interested in the wider community."*

Her experience co-ordinating the pilot project had included one of the four secondary schools opting out at an early stage because of staff illness and only

one occasion when all participants attended review sessions. She accepted the explanations described in Barriers/constraints that were given to her and found she had neither the opportunity nor power to influence these. Palmer (1998) echoed Mel's reservations by writing that, without intending to convey the message that formal environmental education is a waste of time, it was being suggested that "... *until such times as a major paradigm shift in education (in the direction of ecological thinking) takes place – and even the most optimistic amongst us would surely say this was not imminent – then formal environmental education programmes can and will form only a small part of an individual's education relating to the environment*" (p.274).

These reflections on the value of school-based environmental education reflect a worrying finding of a study by Palmer and Suggate (1996) where, of 232 respondents who were categorised as being *active and informed citizens who know about and care for the environment in their adult life* (p.132), not one cited education below A level standard as being an important influence on their environmental attitudes. Indeed school level courses were found to be ranked 9th out of 14 categories of influence affecting environmental attitudes and responsibility. The implication is that school courses then were failing to have any significant impact. Given that the position of environmental education in the curriculum has not been significantly enhanced since then, it is likely that a similar situation would still exist.

Harriet: "*I feel that if pupils are really going to be interested in finding out about the environment, they need to have some experience of it that was enjoyable and interesting to provoke that enthusiasm and then they might want to learn about it.*"

Jo: "... *one frustrating thing about geographers I feel is that they lift, they leave the politics out of it... there's a naiveté about geography teachers*

where they think there is land and there are pure decisions, when of course politics is a lot to do with world resources and so on."

This response from Jo was one of only a few that acknowledged the essential political identity of a subject area. Indeed, although there were several responses acknowledging Government's influence on curriculum, there was rare acknowledgement that curriculum is a strand of the political process. Volk (2003) reported a conversation with four environmental educators where they were asked what was the least enjoyable part of their role. One respondent was quite specific that the least favourite aspect had been the politics. Personal experience in a staff-room was of the assumption that I would be supporting the Green party in elections. This is closer to a view of politics as merely a party political signal about how society *is* organised rather than the much wider concept of how society *should be* organised and governed. The Citizenship (1999) programme of study is heavily biased towards *knowledge and skills about becoming informed citizens.* Government can now claim that politics is part of the school curriculum without risking that curriculum will generate challenge to dominant political paradigms. The emphasis is on how society *is* organised. For teachers who have to work from this document, they are most likely to use it to inform the rational, transmission mode of teaching or to reflect on the inherent textual signals and then avoid the potential difficulties of the critical, transformative mode. Indeed *politics* is seen to be such a sensitive issue in many schools that teachers can be required by head teachers to avoid any personal political statement to the extent that one teacher was *advised* against wearing an Amnesty badge. Another displayed the message *We cannot eat money* in her classroom and allowed it to generate questions from pupils. These were two experienced teachers who had found ways outside the prescribed curriculum to engage some pupils in political thinking.

A rather different opinion about politics was expressed by Rob. He seemed to assume that Government was unaware of the possibility of bias rather than that

Government could itself be biased. Like most of the participants in this study, he gave no indication that he considered education to be a political process.

> *"In my opinion I don't think it* (Government) *has even thought about the broader political issues like there might be bias in issues to do with environmental education."*

Some staff-room conversations acknowledged that the *clock had been turned back* but there were no explicit references about why or to where. Ball (1994, p. 146) is quite clear that the clock is being turned back from comprehensive values that address individual need to market values that address individual performance.

On being asked if there is an issue about being asked to deliver curriculum in which there is no personal belief Rob continued,

> *"There is. That is probably most strong within the RE field. Over the last couple of years we seem to have moved away from asking a large number of people to deliver the RE curriculum towards a smaller number of more 'specialist teachers'. It has to be inverted commas because most of them aren't trained."*

There seems to be an implication here that the involvement of fewer teachers will somehow avoid the issue of asking teachers to deal with aspects of the curriculum that may conflict with personal beliefs. This would be less of a problem if teaching were a collaborative rather than a didactic endeavour. It also implies that teachers are reluctant to expose their own beliefs to critical challenge. Each of these personal opinions in some way relates to deeply embedded professional beliefs about the positivist and predominantly didactic educational paradigm. This is safe territory for teachers.

4.2.10 Code label: School location

The following responses relate to the influence of the physical location of the schools. The teachers who participated in this study worked in schools with strongly contrasting surrounding physical environments. Some schools were located in densely developed urban environments. Others were in or close to a National Park and were located in small market towns drawing pupils from large rural areas. Within the group of urban schools there was further cultural contrast since two were located in areas that were considered by teachers to be economically deprived and had pupil intakes described as being multi-racial and disadvantaged. The other was located in an area of predominantly professional people with an intake of pupils described as being white and middle-class. Given those differences there were remarkably few references made to the surrounding physical environments.

Fran was teaching in a school located within a short walking distance of a stretch of coast that is recognised as being aesthetically particularly important. It is also within easy reach of major urban centres and is important for coastal protection. There are extensive management structures in place including educational provision. Her response recognised some of this potential.

> *"Because of where we live ... we actually have a variety of environments fairly close to hand, so when you're discussing these in the classroom situation, a lot of people would certainly know about the different types of environments."*

What is significant is that she assumes pupils will be informed for classroom discussion *about* the environment. There was nowhere in her interview where she discussed working *in* the environment or even hinted at the possibility of using the school location to generate discussion about, for example, competing demands

on the environment and what values and attitudes might be underpinning its use. As an art teacher, there were missed opportunities. Elsewhere in her interview she had discussed the difficulties of finding time to do anything not prescribed and in any case secondary school timetables are usually rigidly constructed around time slots that cannot accommodate even occasional immersion in just one aspect of the curriculum. So, although she was teaching in an area with vast potential for environmental education, inflexible time-tabling and also degree of limited conceptualising about environmental education were confining her to education *about* the environment.

Peter's response highlighted the same fundamental issues. Scarce time was also a concern for him. He was clearly talking about knowledge *about* the environment and he too seemed to be unaware of the opportunity presented by the changing pH of the brook to generate discussion about the use of the environment and the values underpinning that.

> *"Okay, we can count houses and we can count cars and stuff, but that, arguably, is more Geography. But doing pH, the pH of the brook down there, well, it depends what day it is, because, up until recently,what day it is dictated what colour it was, and, therefore, what was leeching out of the banks, and so on. So, we don't do an awful lot of outside practical, because it is time consuming. And by the time you've got the children across the field and over the other side, they've only got twenty five minutes or so before they come back, so, in my view, it's actually more efficient to teach them. Not, never from books, but more from like projects, or from sampling on maps, or whatever ..."*

Little evidence emerged from these interviews that teachers believed that the rural/urban location of their school had a significant implication for environmental education provision. Given the contrast between the immediate physical environments of the inner-city schools and those located in a National

Park, it would not have been surprising to find expressions of difference when environmental education provision was being considered. In practice, it seems that the issues surrounding provision of any kind within the existing curriculum are such that teachers appear not to have reached the stage where the details of such provision are given much consideration. So, very few responses made specific reference to perceived practical advantages or disadvantages relating to the location of the school.

The following two extracts are from the co-ordinator of the Cumbria pilot project who had a development education perspective on this aspect of the curriculum and had previously been involved with an exchange visit programme between rural and urban schools. She paraphrased a Lake District school head teacher addressing a visiting group from an inner-city school:

> *"I'm very glad you've come to visit us and we're really looking forward to our visit to your school so that we can all learn what it is like to live in an inner-city deprived environment."*

> Mel: *So, if it was an urban environment ... I would then use different examples and I think the issues that would come up would probably be rather different as well."*

Both of these comments suggest that there are fundamental differences between environmental education in urban and in rural schools. For environmental education *about* and *in* the environment this is likely to be so. However if it is developed into the education *for* the environment domain, there will be many more similarities than differences. There were surprisingly few references throughout the interviews to working outside the classroom which may explain why few opinions were voiced about the potential of the school location to contribute to environmental education. It seems that the structural impediments are such that teachers do not look upon school location as a resource.

This is contrary to the recognition in the National Curriculum of the value of fieldwork. Curriculum Guidance 7 stated:

> *"The emphasis of environmental education should be on enquiry and investigation by the pupils themselves, including direct experience. Fieldwork has an important part to play in both junior and secondary schools. It provides opportunity for drawing on the environment as a stimulus to learning, at the same time developing awareness and curiosity about the environment"* (1990, p.14).

There is an inconsistency in a policy that recognises the value of fieldwork when structural constraints limit the incidence of fieldwork. This is one example of the rhetoric/reality gaps that are associated with non-statutory curriculum.

4.2.11 Code label: Curriculum ranking

One of the consequences of the ERA (1988) was the classifying of aspects of the school curriculum into a range of categories that have been discussed in detail at an earlier stage in this work. What effect has this classification had on teacher beliefs about their practice? Has it shaped or re-orientated their beliefs about what is most important and deserves their professional commitment? What are the implications for environmental education?

There was an explicit acceptance by many of the teachers in this study that some areas of the curriculum are more important than others and their judgement is coincidental with the ERA classification. Core subjects are deemed to be the most important. Examinations are identified as additional signals about the relative importance of areas of the curriculum. Sometimes these views were expressed as being the perspectives of pupils and sometimes as those of teachers.

What was common to most of the responses was that few teachers questioned the assumptions implicit in the hierarchy.

The following two respondents expressed the view that it is *obvious* that English and Maths are more important but did not question that assumption.

Angie: *"Well obviously the most valued parts are Maths and English really."*

Angie had extensive experience as a supply teacher of modern languages and is likely to have had the opportunity to observe or participate in a wide range of school structures. That experience seemed to have had little influence on her perceptions about curriculum content or delivery. She consistently expressed views compatible with the status quo.

> Clive: *"I think it's important that everyone is educated in English and maths and science because I think obviously English and maths are very important, not just in school but in later life. You need basic English skills, you need to communicate and you need to write so they're very important skills.*

Clive is clearly viewing the curriculum through the conventional subject-specialist lens and has not considered that English and Maths could be taught through a cross-curricular process. He thus reinforces the conventional perspective of secondary school teachers and the abrupt transition from much of the practice in junior school where English and Maths would evolve within the whole curriculum.

> Angie: *"I think as they get older they realise the importance of it* (Maths and English) *but as they are younger I don't think they mind really. They like anything new and interesting, for example they love languages when*

they first do it but that soon loses the novelty and by Year 9 they think they don't have to do it. 'We don't need it.'"

Des: *"We do have a rank on the National Curriculum subjects and which are the most important ... the Government does send out signals to kids about what is important and what is not. And that is going to have a big impact on the way the curriculum is taught and delivered, on time-tabling within the school."*

Although many of the teachers in this study observed that there were clear messages about the relative value of aspects of the curriculum, only a few made any value judgements about those messages. The following two responses expressed two concerns.

George: *"You know, a lot of our Set 5 and Set 6 kids are totally disenfranchised because they're not going to get the exams that we're trying to push them towards and then some pupils are not going to get jobs afterwards."*

Here George expresses his belief that curriculum provision is inappropriate for many pupils. His claim that Sets 5 and 6 pupils are disenfranchised implies that differentiation of curriculum across the ability range alone is inadequate and fails to recognise the need for differentiation of content. This observation returns to the debate about when, how or even if it is appropriate to limit access of individual pupils to some of the curriculum. He also implies the principle objective of education should be to enable pupils to gain employment. There is a paradox here in that the National Curriculum, at least in part, was meant to ensure parity of provision for all pupils and yet there is the persistent feeling that such parity is not necessarily appropriate for all pupils. These views are predicated on a predetermined curriculum of official knowledge and would be redundant if

pupils and teachers were engaged in a co-operative endeavour and pupils were stake-holders in constructing education.

Not only are there messages for teachers and pupils about the relative merits of parts of the curriculum but also for parents, educators and the general public. Jenny was quite clear that government used information to this end.

> *"Yes I think there are clear messages to children. There are clear messages to parents, educators and the general public because of the way government chooses to use information about educational establishments and the way the press interpret it. You've got your numeracy, english, maths, science and technology, A to Cs and SATs scores dominating education now and that's a tragedy."*

Jenny's use of the term *chooses* when she refers to the government's use of information implies its *intention* to transmit clear messages about relative values of areas of the curriculum. There is also the implication that the government is reinforcing those messages by exerting pressure on schools using examination results. She believes that the domination of examination results as key indicators of success is tragic. A likely outcome of this emphasis on examination success is reflected in the following comments.

> Harriet: *"I think if it is examined and certificated they're* (pupils) *likely to take it more seriously than if it isn't."*

> Duncan: *"I think pupils tend to take a sort of pragmatic view of demands made on them and, if they are following a heavy programme of eight or nine GCSEs, it becomes very difficult for them to look at other issues and to give them full weight and attention."*

Harriet suggests that pupils are less willing to take seriously non-examination aspects of the curriculum while Duncan suggests that they are unable to do so because of the pressures enforced by examination demands. Despite the fact that the review of the National Curriculum released some curriculum time to be used more flexibly, there is still a perception that there is no time or space to develop more than the statutory requirements and examination subjects.

A further signal about the perceived value of environmental education is seen to be the non-statutory status it has been accorded. Once again the word *obviously* is used when Jo makes the following observation. She concurs with a number of the teachers in this study and makes a clear link between a statutory requirement and the status of aspects of the curriculum.

> *"Well it's obviously saying that environmental education as such is not as important as other things. The powers that be obviously don't consider it as important, not enough to make it statutory that's definite."*

So, paradoxically, the statutory/non-statutory dichotomy created by the ERA almost certainly undermines the claim for a broad and balanced curriculum for all pupils. Teachers are modifying details of their beliefs about their professional role and, in an environment where they have been subjected to unmanageable pressures during a period of rapid change, they have harnessed ambiguities in policy and interpreted them in ways to reduce the pressure. The result is that non-statutory requirements like environmental education suffer from the inertia generated by overwhelming change or from its inevitable and perhaps its intentional marginalising by the New Right control of the change. Earlier discussion has already illustrated the dilemma of the New Right hegemony when considering all aspects of the curriculum that had the potential for social transformation. Graham & Tytler (1993) wrote of the frustration as the National Curriculum Council struggled to influence successive Ministers of Education over the structure of Key Stage 4 in order to retain parity of esteem for all aspects of

the curriculum. That outcome has clearly not been realised. Superimposing testing that will be used to rank schools in a simplistic manner and overloading the content and management of some aspects of the curriculum rather than others, inevitably imposes value judgements about the relative merits of components of the curriculum. For environmental education, the message seems to be that it is a desirable extra if it can be accommodated around the more important subject areas.

4.2.12 Code label: Curriculum location

If environmental education is to be effectively addressed in schools, teachers need to have a clear understanding of whether they as individuals have a part to play in its delivery. What they believe about its location in the curriculum is likely to be a key factor in their decision making. If they believe it is located clearly within defined subject areas, then the decision will be based on their subject specialism. If its location is more fragmented, there will be a need for a clear understanding of what aspect of provision is their individual responsibility. If it is seen to be a theme permeating the whole curriculum, then all individuals will need to feel adequately informed and empowered to participate in delivery. Many of the teachers in this study indicated that they would need guidance of some kind.

Although the interviews for the study took place at a time when the introduction of a statutory requirement to deliver a Citizenship curriculum was imminent, most of the participants made no reference to it until I introduced the subject to the conversation. Only Joan seemed to be aware of its position on the curriculum horizon. She has responsibility for PSHE co-ordination and had mentioned issues of lack of resources to support that but she also pointed out that "*... the emphasis so far has been on sex education and drugs education. These have been the Government initiatives so far.*" Her feeling was that resources are

made available selectively by Government and without specific funding there will be aspects of the curriculum including environmental education that will remain marginalized. She had previously mentioned her problem of co-ordinating PSHE work with a changing team of staff and anticipated that as a problem with environmental education.

> Joan: *"... I am concerned about this because they've* (policy- makers) *absorbed things like the environment and sustainability into this curriculum* (Citizenship) *and they would be faced with the problem of co-ordinating all this."*

Further uncertainty was expressed by Cate although her position as a teacher of geography enabled her to feel more secure about aspects of environmental education. Teachers of geography at least have the security of being able to refer to curriculum statements for their subject area.

> *"I think media coverage over the last ten years in terms of greenhouse effect, various global warming things, brings it to the forefront but I think it kind of gets tucked behind a lot of things, behind political arguments etc. I wouldn't like to say where it sits."*

She then said:

> *"I'd probably say during the week I would be teaching environmental issues at least once and making a point of it ... it's part and parcel of geography for me and I wouldn't skate round environmental issues."*

An unexpected viewpoint was expressed by Jo. She implied that environmental education perhaps need not be a part of the school curriculum.

"I think TV today has a huge influence on children. Well, maybe, if we (schools) *don't do much in the way of environmental education, perhaps that's a good thing because perhaps they get more of it from TV than they get from us. I suppose it depends what they watch on TV doesn't it?"*

Her final comment, however, reveals the intrinsic problem with this suggestion. It presupposes that pupils would watch such programmes. Furthermore, as Stanistreet & Boyes (1996) have pointed out, even if the media message is accurate, pupils would have no opportunity to *"... interact with colleagues or peers to test that they have not misunderstood or misinterpreted the information"* (p. 47). More importantly, there would be no opportunity to share critical reflections on the information presented and therefore media-based environmental education alone would for most pupils remain firmly rooted in the positivist image of environmental education described by Robottom & Hart (1993).

For a range of reasons there appears to be a lack of clarity amongst teachers about the location of environmental education and policy documents ranging from the introduction to the review of the National Curriculum have contributed little to addressing this confusion. Indeed, one geography teacher suggested it only existed in science and geography but articulated the following:

Des: *"I think if environment was made more broad, if it was looked at in other areas as well, it would have a better impact on the kids."*

He believed it *"... has got to be within other subject areas as well as geography, and if that starts now and it's a national thing, if every school is looking at it, then you're going to make a difference."* He continued by suggesting that progress would be slow but cumulative. He was however one of the few teachers who suggested any semblance of a model for long-term progress.

The immediacy of the concerns discussed by many teachers points to a reactive rather than proactive mode of professional action which is unsurprising amongst a group that has become acclimatised to being excluded from policy design.

If the feeling of disempowerment evident in many of the interviews for this study is widespread throughout the teaching profession, as would seem likely, then externally generated policy statements need to be clear, realisable and supported. In DES (1989a) National Curriculum: From Policy to Practice: environmental education, it was suggested that environmental education could be taught in a cross-curricular way.

Section 3.8

*The **whole** curriculum for **all** pupils will certainly need to include...*

- *careers education and guidance;*
- *health education*
- *other aspects of personal and social education; and*
- *coverage across the curriculum of gender and multi-cultural issues.*

Section 3.9

The same is true for a range of themes which might be taught in a cross-curricular way such as ... environmental education.

This was followed by publication of the NCC's Curriculum Guidance 7 for Environmental Education where environmental education was considered to be a cross-curricular theme. The cross-curricular themes were seen to be inter-related with common features. By 1999, in the review of the National Curriculum in England: The consultation materials, environmental education as a cross-curricular theme received no specific consideration. Examination of the document shows that reference to values and attitudes in environmental education was confined to geography where provision was no longer a requirement beyond Key Stage 3. The science programmes of study include a Key Stage 4 reference

to considering the "... *power and limitations of science, including awareness of the kinds of questions science can and cannot answer and of uncertainties in science knowledge, in addressing ... environmental questions and to explore some of the ethical issues involved"* (p. 104).

In QCA PSHE 2000 Personal, social and health education at key stages 3 and 4 sustainable development appears as a suggested link with the geography statement.

It states that "*...there are opportunities for pupils to develop their understanding of sustainable development within the school curriculum, in particular in their work in citizenship and PSHE, as well as in geography and science"* (p. 31).

So, understanding of where environmental education might or should be located in the curriculum is confused in policy and in practice. In a teaching environment where policy has become the driving force for practice, there is a need for clear and consistent policy statements if there is to be effective implementation. A combination of fragments of environmental education in geography (which is no longer a statutory entitlement at Key Stage 4) and science, the emergence of cross-curricular environmental education guidance, followed by its rapid demise and its subsequent inclusion in citizenship guidance, have done little to clarify the situation in recent years. The most clearly defined statutory entitlement for pupils is the environmental education content of the science curriculum. The problem with the linking of science and environmental education is that an uneasy relationship exists between science and environmentalism. Ashley (2000, p. 270) points out that the agenda for scientists and environmentalists may differ. Environmentalists may advocate *"the precautionary principle"* where actions that favour the natural world should be taken whenever there is scientific uncertainty. Many scientists resent the constraints imposed by such a principle. Those with an anti-environmentalist agenda can exploit the ensuing conflict.

To overcome reservations about the location of aspects of environmental education in the science curriculum, Ashley (2000, p. 275) suggests a starting point might be the *"acknowledgement of the partiality of the way in which science is presented by this curriculum"* but cautions against a technophobic or anti-science response. Science would be presented less as a 'value-free' subject and would become a science of reflexive modernity where there is understanding of the limits and uncertainties of science. In practice the descriptors for the attainment targets in the Science in the National Curriculum document are dominated by the concepts of knowledge and understanding with neither implicit nor explicit acknowledgement that merely to transmit knowledge about the environment is insufficient to affect environmental behaviour. As a consequence, locating environmental education in the current science curriculum effectively constrains it within the utilitarian paradigm where environmental problems are conceived in a pragmatic context with *"...protecting the environment in the face of its destruction by certain social actors"* as the dominant theme (Layrargues, 2000, p.170). This is an approach that concerns itself with consequences rather than causes of environmental degradation and, as such, limits action to what Layrargues calls the *end-in-itself perspective* that results in a limited and out-of-context learning experience. This could be deemed to be a conservative attempt to sustain hegemony rather than the "... *transformation-seeking/subversive movement which seeks to implement an alternative option, inserting ecological rationality into the ideological nucleus of our society* (p. 171).

Janet unwittingly reinforced this perspective when discussing the possibility of addressing environmental education in the RE curriculum.

> *"If we're looking at nuclear disarmament you're going to touch on what technology has done to the environment. ... Is having a nuclear weapon completely wrong? Is there some argument for keeping one? Is it*

important that we all have a deterrent? Does that leave us wide open to an attack from other countries?"

She began by identifying the problem within a positivist, technocratic paradigm. Technology is assumed to be the problem rather than the problem being that of the values underpinning its use. She continued by phrasing questions that assumed that the issue is pragmatic, using expressions like *important* that we all have a *deterrent* and *wide open to attack*. The focus for this approach tends towards the consequences. A more challenging approach would be to ask pupils to justify any use of nuclear weapons and then to debate with them how they can ensure that political developments emerge from the will of the people rather than as processes designed to protect the hegemony. This type of curriculum development will not be easy as is evident from the work of Lijmbach et al (2002). In describing a multidisciplinary project to develop a theoretical framework and accompanying exemplary teaching modules to promote a pluralistic view of nature, they identify what they call '*discourse paralysis*'. They suggest this emerges from the prevailing emancipatory pedagogical emphasis on pupils' own values and opinions and that the political context in which those values are constructed is not considered. They are in accord with Ashley (2000), who similarly drew attention to the need for a revised curriculum approach to scientific certainty, when they suggest that "... *monodisciplinary biology and geography curricula and multidisciplinary environmental education may be complementary when the relationship between science and society is considered an integral part of scientific literacy.*"

The theoretical debate about the nature of environmental education and its location in a school curriculum will undoubtedly continue but schools need a structure within which they can construct the beginnings of a curriculum entitlement. In the present climate, where curriculum control has become ever more centralised, the existing policy confusion serves merely to ensure that environmental education is an aspect of the curriculum that receives scant

attention. Guidance for developing environmental education within the existing school curriculum with its conventional subject boundaries can be found in, for example, Goodall (1994). Contributors describe ways to integrate environmental education into all major subject areas. Supporting resource packs are also available through organisations such as World Wide Fund and OXFAM. However, these are an additional drain on scarce financial resources and are unlikely to be freely accessible to many teachers until a firm commitment has been made to environmental education implementation. Such a commitment becomes less likely as the curriculum becomes increasingly controlled by central government. Indeed Lofthouse (1994, p.87) points out that the Dearing (1993) *"... mission of 'slimming down' a bloated curriculum, begins to appear as a cover for a return to curriculum orthodoxy based on subjects."*

Throughout the interviews no discussion emerged about the school ethos or the hidden curriculum. My own experience was of the decade of the 1980s working to embed environmental education as the whole school ethos. With the exception of one day in the decade designated by the headteacher as Conservation Day, all activities took place in evenings and weekends and were always described in the school handbook as an extra-curricular activity. When the senior management team were devising a set of new school rules, we took the initiative and drafted and presented for their consideration as an alternative, what we called an Environmental Code that all pupils, parents and staff would subscribe to. Our intention was to begin a process of changing the school ethos from one of *'thou shalt not'* to one of *'we are going to respect all aspects of our environment.'* Subsequent enquiries about the document suggested that it had received little if any consideration and a new set of school rules was introduced. None of our group was in a sufficiently powerful position in the school hierarchy or felt sufficiently empowered to ask or expect the opportunity to present the document to the whole school. Most of the teaching staff as well as the pupils were disempowered. So, even if there are individual teachers in a school who have the vision and commitment to work towards an empowering school ethos, without the

support of the management team the impact they can make is likely to be minimal. That is not necessarily a claim that school managers themselves are empowered to make fundamental changes. Each of three headteachers who spoke to me alluded in some way to the pressures exerted on their management decisions by the exigencies of improving examination results.

This study is concerned in part with locating environmental education in a school curriculum. The knowledge and skills domains are to some extent to be found in geography and science, although it has to be remembered that geography is no longer a statutory requirement at Key Stage 4. The socially critical domain where environmental attitudes and values could be constructed *might* find a place in PSE, RE or Citizenship and *could* be reflected in the hidden curriculum or the school ethos. Little that emerged from these interviews suggested that this is happening.

Indeed, in considering Citizenship, Griffith (1998, pp. 220-221) refers to the *"illogical dichotomy"* of the knowledge-based curriculum with a didactic pupil management system, and the independent learning, leading to educational citizenship that parents claim to want for their children, and the rhetoric suggests they are receiving. He acknowledges the conflicts inherent in the concept of citizenship with the question, " *Should the child be given an education that prepares her to enter comfortably and acceptingly the existing society (an autarchic model of citizenship) or should she be educated to question the tenets of the status quo so she may contribute to the change and development of existing society (a critically reflective model of citizenship)?"* The question is relevant for environmental education. Griffith concluded from his research that there are undoubtedly rhetorical claims made for educational empowerment but that the didactic teaching promoted by the National Curriculum (and accompanying reforms), leave that rhetoric far from realisation. He sees independent learning as the way forward for developing citizenship in pupils, and this has clear relevance for the socially critical domain of environmental education.

4.2.13 Code label: Political statements

Although political dimensions of the debates about education and environmental education in particular were indirectly referred to in many interviews, the following two extracts are unequivocal in making the statement that government does not necessarily want to promote the changes that are implicit in environmental education. There were numerous references to political influences in education but they largely focused on the structures of a teacher's working environment rather than on political control of curriculum content.

> Don: *"Well, I think if you're being cynical and saying educating people about environmental education makes them enlightened voters, that's not necessarily what some people want. ... It might be a paranoid X-files view but I can't see the benefit to government of having people who are fully aware of environmental issues. There's no great motivation from government. It's not something that they need, an enlightened populace on environmental issues."*

He continued with:

> *"I think that it* (environmental education) *has what will now be seen to be a marginal existence. I think that we have governments paying lip service to environmentalism by putting up taxes on road transport and that is seen to be proof of the green heart of government as opposed to treasury greed. I think what we have to understand is that the main pressures for environmentalism have somewhat waned throughout the last ten years because teachers have been so distracted by the frontline concerns and this is not seen as a frontline concern. Survival of schools, survival of teachers has been dictated by the exam requirements and accountability via league*

tables. So I think that has transformed or distracted teachers from being able to meet environmental concerns."

Des: *"It's the old cliché isn't it? If you educate the masses then they are going to turn against you.... If everyone knew about the harmful side-effects of transporting nuclear energy or nuclear waste from one place to another, how many major roads are used for this that go through urban areas, if everyone knew about that, there would be a massive protest and it's not in the government's interest for that to happen."*

Both Don and Des suggested that government has nothing to gain from an enlightened electorate and both then qualified their statements, Don with *'It might be a paranoid X-files view'* and Des with *'It's the old cliché isn't it?'*. It was almost as though they were reluctant to commit themselves to such radical views.

Friere (1993, p. 128) would see these as acknowledgements of the 'manipulation' strand of antidialogical action where *"... the dominant elites try to conform the masses to their objectives."* Apple (2004, p. 114) might more likely describe them as examples of the *"...dominant interest in keeping most if not all aspects of human behaviour in educational institutions under supposedly neutral technical control."* Both would see them as indicators of education for social control rather than for social critique.

Jenny expressed some awareness of political dimensions to environmental issues, but it did not seem to extend to the political nature of curriculum.

"Well there would be a political bias obviously with a large and small p because I am aware that some issues are politically either motivated or naturally generate the political question."

Janet made the observation that policy-makers are removed from the realities of the lives of the people whose lives are being moulded by those policies. She perceives this dislocation to be the outcome of the different and *protected* way of life of policy-making sections of society. She does not suggest that perhaps the marginalising of the lives and needs of some groups in society might be a strategy designed to support powerful interests.

> Janet: *"The people who are bringing in the priorities have got very little idea about what the priorities are because they live in a very protected world don't they?"*

Rob seems to believe that the Labour Party inherited an unwanted education policy but that for political expediency they must continue to develop the policies put in place by the New Right.

> *"Blair and Blunkett are in a corner with education. They've taken on a lot of the Conservative mantle about assessment, about driving up standards and I've heard far less about producing well-rounded kids with an understanding of all areas of the curriculum, about concern over moral issues, environmental issues and so on."*

Is he implying that a more secure position of power would result in a transformation of policy by a left-of-centre government? It is arguable that the single most transforming change made to education since it became freely available to all was the introduction of Comprehensive schools. These in reality did little to influence curriculum content and merely attempted to ensure that all had access to what had previously been available on a limited basis. Fundamental change to the curriculum to create a socially reconstructive system of education has not been attempted. Attempts to transform education have focused on widening access and improving standards within the existing

empirical/analytic/positivist paradigm. Herein lies the greatest dilemma for environmental education.

Chapman (1999) pointed out that environmental education is a "... *socially reconstructive activity aimed at social and environmental justice*" (p. 267) and that " *(p)oliticians have paraded a public stance of support for the environment yet, by their control of resources, they have ensured little of substantive value has occurred*" (p. 268). None of the participating teachers in this study said anything that would undermine this claim.

Cate's reference to a political dimension went no further than the assumption that government would ultimately force behavioural change. She did not venture further into questioning government's perspective on environmental or educational issues. This seems to exemplify the teacher who accepts without question that curriculum is a neutral assemblage of knowledge.

> Cate: "*It does, I suppose, it's got to be subliminal messages and things. I mean I agree with that, but saying that, if we won't change our behaviour then there's always somebody above us governing us who will, by increasing taxes or various things to try and make and make us more environmentally friendly. So we're forced in a way, perhaps too late, from above, whether it's TV or politicians.*"

Janet acknowledges that political priorities change and curriculum priorities reflect those changes but there is no explicit reference to political influence on curriculum content. Again curriculum seems to be seen as neutral knowledge.

> Janet: " *Blunkett has been known to say that education for sustainability is one of the Government's highest priorities* (Laughs) *but ten years ago when I was applying for jobs, all the recommended literature was to read up on Citizenship ... you need to know about it for your interview. We're*

ten years on and I've never heard anything about it. I think so many other things overtook it, restructuring the National Curriculum, new exams, the election, different priorities. It just fell to the bottom of the list."

Janet's laughter betrays a degree of cynicism about government intervention in curriculum priorities.

Joan, an experienced teacher of sociology and PSHRE made an extraordinary statement when she said, "*Schools are not agents for social engineering.*" When pressed she claimed that she did not think that they should be. She then went on to say that in year 11 her pupils play a revolution game that is "*... fairly wild and can be quite dangerous... it's worth doing but I wish the quality of the discussion was better afterwards. I haven't found a way round that but I will one day.*" It's difficult to reconcile the statement about social engineering with the playing of a revolution game unless she was referring to teaching as an agent of government. The implication however is that she did not recognise the political nature of the control of curriculum content.

Throughout the interviews for this study there were a number of indications that teachers were aware of political influence on the priorities in education but little to suggest awareness of the more subtle selection of official knowledge aimed at perpetuating dominant hegemonies. Ball (1994) points out that the National Curriculum is the first attempt made by government to assert direct control of the curriculum since the nineteenth century. He continues:

"On a number of occasions the process of curriculum specification was reduced to the assertion of a set of personal prejudices held by the incumbent Secretary of State (urged on by cultural restorationist supporters) over and against the best judgement of Working Group members and subject practitioners" (p.34)

He added that for the geography curriculum, the outcome effectively isolated pupils from global economic dependencies and inequalities and also from the ecological crisis. For environmental education the outcome is likely to be that environmental education will remain confined to the knowledge and skills domains. The critical domain is where for example the free market economics of the New Right and neo-liberal agendas would be challenged.

4.2.14 Code label: Compliance

One of the outcomes of the 1988 Education Reform Act was that control of major aspects of a teacher's working life became increasingly distanced from the locus of control of teachers. Curriculum content and assessment were defined by government agencies and regulatory systems were designed to ensure enforcement. The New Right agenda for reform redefined education within a market paradigm. The market was seen to act as a control mechanism and *"...within it education is reconstructed as a consumption good."* (Ball, 1994, p.51). Bureaucratic managerial systems controlled from the 'top' decided how teachers were expected to perform in a classroom. Such systems are concerned with the desired outcomes that have been identified by those at the 'top'.

The concomitant shifting of power away from teachers leads Ball (1994, p. 62) to conclude that, *"The teacher is caught and crushed in the nexus between management and the market."* He points out that the teacher is "*increasingly an absent presence in the discourses of education policy"* (p. 50) and also that in general terms *"...there is an increase in the technical element of teachers' work and a reduction in the professional. Significant parts of teachers' practice are now codified in terms of Attainment targets and Programmes of Study, and measured in terms of Standard Attainment Tasks. The spaces for professional autonomy and judgement are (further) reduced"* (p. 49).

The following extracts from interviews are explored in some detail because they say much about the culture of a school and the sense of autonomy and individual responsibility held by teachers. It has already been suggested that environmental education provision is highly dependent for many reasons on the commitment of individuals, on professional confidence, on creativity and on professional autonomy and judgement. If teachers do not believe they are empowered to decision-make, they are more likely to await instructions. The implications for environmental education include that teachers will expect a clearly defined curriculum with the statutory underpinning to validate its inclusion in the whole school curriculum. Many of the comments made by the teachers in this study echoed the reservations expressed by Ball.

> Paul: *"If a decision was made somewhere along the line by somebody that we're actually going to do this...it needs to be a solidly worked out course before we start.* (Referring to curricular audits he continued) *We tend not to. It's usually the hierarchy who review across departments, we tend, the little minions like me, don't tend to read more than reviews within departments."*

Here Paul is distancing himself from many aspects of policy making. He concedes that he tends to read only departmental reviews. These are likely to have the most immediate implications for his classroom practice. He makes the distinction between the hierarchy and the minions, a 'them and us' situation, and he expressed no reservations about this dichotomy. His *"solidly worked out course"* conforms to the significant codified parts of teachers' practice described by Ball (1994). He expects that somewhere along the line, somebody needs to make decisions about what to teach and he does not include himself. He thus becomes the "*absent presence in the discourses of education policy.*" However, his reference to reading departmental reviews hints at a level of policy involvement where he does feel involved.

Angie also accepts that she is excluded from decision-making processes.

> *"No I don't think I've ever really had any chance to influence policy making, I just do as I'm told with the other minions in school."*

Using the same negative term (minions), she demonstrates that she expects decisions to be made without her involvement. She expects to be managed as a resource within the school. Although research evidence (Hoyle, 1986; Hargreaves, 1987; Earley & Fletcher-Campbell, 1992) points to participative decision-making as being more likely to have positive outcomes, it has been found that there is a point at which it becomes counter-productive. Buckley & Styan (1988) pointed out that there is a limit to the energy of staff and Earley & Fletcher-Campbell (1992) suggested that job satisfaction can be enhanced if teachers are able to participate in decision-making at a level that does not have an adverse effect on the performance of their main role in the classroom.

John articulates a more complex attitude.

> *"If somebody said we are moving to a course ... and I think it will be to the benefit, that's fine. I'm happy to go with the flow because I understand what's going on and I have confidence in the person who's doing the change.... I have confidence in the leadership of the curriculum team where I work."*

He is happy to accept a degree of change where he has not been consulted if he has confidence in the leadership of the team. He also identifies understanding of what is going on as being a key factor. Although he had previously said that he did not involve himself in policy-making processes, there is clearly some unspoken involvement as he satisfies himself that he understands the reasons for change and makes judgements about those introducing change. The danger with

this position is that, having made those judgements, teachers will then accept without further critical appraisal any future change. John did however say "*...and I think it will be to the benefit*" which suggests that he habitually appraises change. Earley & Fletcher-Campbell (1992) concluded that effective middle managers in schools needed to deploy a variety of management modes. They needed to 'sell' policy changes by spending a lot of time discussing them and by taking steps to overcome feelings of threat. Where ideological opposition was manifest, conflict resolution was more dependent on highly developed powers of persuasion.

Peter chose colourful language to say that he believed that he should be doing what he is told to do and that, with appropriate incentives, teachers will work harder.

> "*I personally believe that we* (teachers) *are the carthorses and he* (head teacher) *is the guide you know who tells us which way to pull and, given the right sort of carrots, we could pull more.*"

If this belief genuinely reflects his practice, he occupies a professional niche where his decision-making is likely to be almost entirely confined to his classroom practice as he implements policy designed elsewhere. He may be an individual who takes the view that head teachers and middle managers are paid to make decisions. He may have experienced that participation does not give him any control over curriculum decisions. Earley & Fletcher-Campbell (1992) reporting NFER research carried out in 1986-1988 into how decisions are made in schools revealed that teachers felt that "*...they did object to being treated 'unprofessionally' and their time being wasted in pseudo-discussion and consultation when decisions had already been made and were unlikely to be modified*" (p.186). Peter's interview revealed another possibility. As it unfolded, it began to seem that he was almost completely absent as an individual from his responses. There was a sense of contrived neutrality to most of what he said. It

was almost as though he had prepared responses in advance and these were what he would give regardless of anything he might be asked. The outcome was that the interview was heavily weighted with a wide range of statistics. It felt as though he were using them as a protective shield. National averages, school averages, school intakes were being used to demonstrate school improvement but individual classroom teachers, in this case Peter, were absent figures. The overwhelming impression was that here was an individual who did not want to be exposed to the risk of participating in decision-making.

Why would teachers avoid this type of risk? For longer serving teachers the memories of the discourse of derision that preceded the ERA will still be acute and they may just have decided to avoid any possible repeat. For younger staff, their cumulative experiences may never have included opportunities to participate in decision-making or policy formation.

Cate for example claims that there is flexibility within the constraints of the national curriculum in her school.

> *Cate: "The national curriculum sets out the things for us to teach and we have to teach them. I think here we're quite flexible and if that was what we wanted to emphasise, we would pull it through either floods or what do you think about this or how this is affecting the environment, we could do that. I personally don't think I have done that, I haven't been guided down that track, but if someone said to me I think you should make a point out of the environmental issue and make the children aware of it, I'd do that but I haven't thought about it. I think I do it without realising it."*

She claims that there is flexibility in her school and within the parameters of the national curriculum but that she has not been *guided down that track* and that she'd address environmental issues if *someone* said she should. Nothing she said suggested that it had occurred to her that she could make a decision herself about

how to use some of the flexibility. She also *thinks* that she does *it without realising it* which in many ways is a dangerous assumption for any individual to make about any aspect of the curriculum. For Cate to engage effectively with an environmental education curriculum, it seems that she needs clear guidance and a clear understanding that she has responsibility for some provision. She also needs to know that her professional role includes opportunities and the expectation that she will participate in curriculum design. If she is unaware of, or excluded from that aspect of a teacher's role, she is being effectively deskilled and becomes merely an individual doing what they are told to do who is 'disabled' when there is a need to be more than that. For environmental education, where the curriculum needs to be responsive to changing needs and circumstances, such an individual will face what seem to be insurmountable problems and they are more likely to avoid the issues.

The following comment from Josh might illustrate another aspect of compliance. INSET is now an integral part of a teacher's working life and, amongst other things, can provide an opportunity for all teachers to be involved with curriculum design and therefore have some ownership of what they are doing.

> Josh: *"INSET's a tricky problem. Immediately INSET is mentioned you think 'Oh no. What am I doing this for?' I've got enough things to get on with."*

In-service time is a space that has been created so that teachers can work in a collaborative way but here Josh is articulating concerns that have been voiced by Hargreaves (1993) when he distinguished between contrived collegiality and collaborative cultures. Contrived collegiality can lead to the proliferation of unwanted contacts among teachers, which consume already scarce time. Huberman (1991) had similar reservations and added that collegiality may, if pushed too hard, actually eat into teaching time in the classroom. So the

restructuring of some of a teachers working time with the intention of allowing professional development to take place may paradoxically have little positive effect if it is not accompanied by a change in the culture of teaching.

The challenge for school managers is to create the collaborative cultural climate in which teachers can feel that their time is being used to good effect. If some of that time were used to allow teachers to design curriculum, they would then become stakeholders in the outcome. My own experience of INSET was that some was vital, some was interesting and possibly would be useful at some time, but too much seemed to be directed to management needs rather than teaching/learning issues. It seemed then that some INSET time should be used to address issues that emerge directly from the classroom and Josh's statement suggests that this is still the case in some schools. Unless he can be convinced that INSET addresses his needs, he is going to consider it to be unnecessary.

4.2.15 Code label: External initiatives

The pilot environmental education project in Cumbria was based on the Eco-schools Green flag award scheme. After it had ended, the co-ordinator reflected on its achievements and its failures with the following:

> Mel: *"This whole concept of sustainability, that was a little bit too much for a teacher to take on board, but to see how they can begin – let's have a school club, an eco-club and see what we can do in our environment and let's have a review. Yes, all that was good. I think the thing that we fell down on was the idea that maybe at the beginning people thought that they would all end up with this flag and we could celebrate that we'd all been marked out as eco-schools took a little bit away from what it was that we were actually trying to achieve."*

She continued by pointing out that only one primary school in the project had achieved the award and that was the outcome of a committed individual who had already been working on an environmental education project for two years in her school. It was not realistic in this pilot for participants to expect to achieve the award. Mel saw it as being disheartening for other participant schools once they had realised that an award was not going to be achieved during the duration of the project. She also expressed concern about the possible negative impact on teachers and pupils if the award were to be withdrawn at the two-yearly reviews. This might easily happen for a number of reasons. A committed teacher might leave the school; the project might be considered to be a discrete activity and might not be followed by the embedding of environmental education in the curriculum, or there might be no subsequent support for resources in the school (i.e. the project had been funded by the Local Education Authority).

It was clear that engaging secondary schools in this pilot project had been problematical despite the available funding for supply teacher cover. Only three began the project and there was one early withdrawal when the representative teacher became ill. In practice this meant that the opportunities for the remaining two to find what they felt was common ground for collaborative working became less rich and varied. The two secondary school teachers who completed the pilot indicated to Mel that they felt positive about the moral support, but there was little new that they could adopt in existing secondary school contexts. The assumption here is that there is little common ground between primary and secondary environmental education provision.

My observation of the project showed that much of it was built around activities in the school grounds. These are clearly easier to realise in primary schools where curriculum traditionally has been less Balkanised than in secondary schools. It was noticeable that when teachers in the two participating schools were interviewed, other than the representative teachers, none referred to the pilot project. One school had to deal with the death of a key member of staff and the

other with the serious illness and absence of the head teacher. Those were strains on the schools' staffing that temporarily overwhelmed school structures so that only high priority issues were dealt with, and these did not include environmental education and external initiatives.

Fran was the only other teacher to refer to external initiatives.

"For example, we get a lot of information about people wanting us to design posters about preventing litter and things like that, which are quite worthwhile, but they very often don't give us very much time to design this poster, and they are treated in a rather petty way, and sometimes people don't give us the due consideration that maybe we would like to incorporate this in a whole set of work, and that we could have something that is very worthwhile. So we are split between the two things. Do we design a poster, and do it in a comparatively short space of time, and really not deal with the issue properly? Or do we try and incorporate it? But then somebody's got to give us enough time to really get involved in issues, and you've got to look at it, you know. Frequently we're given about sort of two weeks or something, three weeks to do this and this often comes through from Local Government, and things like this, these sorts of competitions, and these are the only sort of enterprising things they seem to devise. ... Please can we have a poster about not making 'phone calls? or Please can we have a poster about not dropping any more litter? So, I think the way that is conceived, and Central Government ideas too, need to change.

Here she identifies what she sees as two negative issues about external initiatives. External agencies are seen as too often generating add-on activities where insufficient consideration has been given to the implications for the school, the teachers or the curriculum. She also expressed concern about the superficial

nature of many of these either in their design or as a consequence of time constraints for activities to be completed. Nothing she said indicated that she saw an opportunity arising from external agencies. Her plea for s*omebody* to create enough time for such activities reflected other aspects of her conversation where she appears to expect others to make decisions for her to implement.

> *"I would like a lot more guidance ... and particularly if somebody is doing it for me, in terms of examinations. I would want a lot more detailed information to know that I was working in the same direction and manner as other people."*

She wants to be told what to do and how it relates to examinations. There seems to be a conflict here between claiming to want *time to really get involved in issues* and wanting more detailed information about working in the same direction and manner as other people. Her professional confidence and autonomy seem to be have been weakened and there is a degree of *learned helplessness* and *deskilling* (Apsland & Brown, 1993, p.21) evident.

These two examples of external initiatives were both clearly limited in their impact. The first foundered on the difficulties of trying to successfully manage the input of the initiative when unanticipated circumstances arose. The coping strategies for schools inevitably include focussing on high priorities. External initiatives are more likely to be successful if they are at least underpinned by having external expertise go into schools. The second was foundering partly on a teacher's lack of professional confidence and partly on her priorities, in this case examinations. Ultimately, both were limited by the priorities that have become embedded in teacher practice.

It seems that the New Right endeavour to control from a distance what takes place in schools is having considerable success. Ball (1994) points out that "... *significant changes in teachers' classroom practice can now be achieved by*

decisions taken 'at a distance' about assessment regimes or curriculum organization" (p. 50). Fran certainly found external initiatives to be perturbing in a number of ways and the two schools in the pilot project also experienced difficulties. All needed to focus on *decisions taken 'at a distance''*.

4.2.16 Code label: Commitment

There was one clear expression of commitment to environmental education that was claimed to arise from personal values. This was from the supply teacher Angie who was a member of the Green Party but then declared unhesitatingly that she was just a *minion* who did as she was told. Nothing she said indicated that her strongly expressed personal commitment influenced her teaching. As a supply teacher she had experienced teaching in a wide range of subject areas in many schools. She still referred to herself as a teacher of modern languages but her experience was dislocated from that in a number of ways. It seemed that she no longer had a clear concept of her teaching identity and that her professionalism and commitment were being undermined.

In my own early teaching years in the 1970s the need for supply cover seemed to be less than it is now. By the 1980s, although the need was increasing, schools tended to have a list of supply of teachers who were known to them and who developed loyalty and commitment to the school. As the financial management structures of schools changed during the 1990s, schools became increasingly dependent on commercial agencies and had to rely on a changing population of supply teachers. The consequences for both individuals' commitment, and for their confidence in their professional role, is poorly understood. The example of Angie suggests that these changes may have had a damaging effect. The impact on aspects of the curriculum like environmental education, that require a high degree of commitment from teachers cannot be good. Supply teachers can often occupy unmapped territory where they have

little or no opportunity to even begin to define their professional role let alone reflect on the curriculum.

Fran (referring to an externally generated 'design an environmental poster' initiative) highlighted the difficulty of committing to a task that she perceived to be unmanageable. She was expressing frustration at being unable to control factors that resulted in unsatisfactory outcomes.

> *"... but they very often don't give us much time to design this poster... so we are split between two things. Do we design a poster ... in a relatively short space of time and really not deal with the issue properly or do we ... really get involved in issues?"*

She was confused about the value of carrying out a piece of work in a superficial way. That confusion combined with an earlier comment where she articulated a need to know where her work 'fitted into' the larger curriculum frame, is likely to undermine her commitment to, in this case, an environmental poster. On a number of occasions teachers hinted at similar attitudes. Janet referred to the frustration of co-ordinating a PSHE curriculum that *"...is becoming the final refuge for all the new initiatives that no-one else wants."* She also expressed her satisfaction elsewhere that, as a teacher of RE, she was covering environmental education issues required by the syllabus. Added to that she had a changing team of teachers year on year with no allocated in-service time for staff-training. It is difficult to see how loyalty and commitment to any aspect of the curriculum can be generated in such circumstances. As PSHE seems to have become the *final refuge* in many schools for the values and attitudes strands of environmental education, there is a real danger that those strands will be addressed in a token and superficial way by people who have little commitment beyond that of 'ticking the required boxes'.

Two head teachers initially undertook to take part in this study. Of those, the one who on first impressions seemed to be the most charismatic and visionary leader became ill, and a recorded conversation could not take place. Conversations with his staff did not reflect his articulated enthusiasm. The first visit to the school took place on the annual Environment Day which was designated a low-energy day. A number of teachers expressed reservations about the danger of having no lights on stairs and the lights were eventually switched on by early afternoon. Lack of commitment from staff seemed to be linked to decisions about the day that were made without their involvement. It was significant that no teacher expressed to me that the pupils should have also been consulted.

The second of the head teachers expressed lack of commitment to environmental education with the following:

> Ian: *"I think if you look at the Dearing Review* (of the National Curriculum) *which ignored the cross-curricular themes ... I think it's inevitable that they've been put on the back burner and have played less of a prominent role in schools."*

The apparent slavish adherence to externally generated policy demonstrated here illustrates one outcome of what Ball (1994, p.138) has described as the shift from ethical professionalism to technocratic managerialism that has been imposed on education by New Right values. Ian was not alone in interpreting the lack of reference in the National Curriculum review as a signal that it was an aspect of the curriculum that could be marginalised or even ignored. The Citizenship statements that followed for introduction in 2002 did little to modify that attitude. In 2005 telephone contact was re-established with a teacher participant in this study who is now a head of department and has responsibility for managing external examinations. The introduction of the Citizenship curriculum had been preceded by a departmental audit carried out during a staff development session.

It had not, to her knowledge, been followed by any staff-wide guidance and she believed it was mainly covered in PSHE sessions and possibly by any individuals who had the commitment to find a way to address it in their subject area. She did not herself teach PSHE so was not familiar with the study programmes. A few days later she returned my call to tell me that she had found a copy of the DfEE/QCA (1999) Citizenship Key Stages 3&4 booklet in a filing cabinet. As she is a head of department, it seems reasonable to assume that her unfamiliarity with the school's policy and practice would be common to most of the staff in this school. This suggests that, despite its statutory status in the curriculum, Citizenship may be faring little better than environmental education in the New Right's restorationist curriculum.

Apple (2004) considers that a transformation of the concept of citizenship has taken place.

> *"What was once a political concept and practice, one based on collective dialogue and negotiation, is now a wholly* economic *concept. Under the influence of neo-liberalism now, the very meaning of citizenship is being radically transformed. The citizen is now simply the consumer in all too many countries. The world is seen as a vast supermarket* (p. 186).

There is little evidence in curriculum statements that explicitly challenges such a pessimistic view, and little emerged from the participants in this study, to suggest that the policy statements receive any reflective consideration. Indeed there is much to suggest that teachers do not engage with potentially transformative curriculum unless they must, and a restorationist curriculum is not designed to encourage a critical, transformative educational model. The examples above showing lack of commitment to environmental education are underpinned by the overwhelming emphasis on a rational, utilitarian curriculum where teachers find the space for negotiating with the curriculum, has been obliterated. Teacher commitment is directed towards that which is imposed by external forces.

4.2.17 Code label: Self/others

The following extracts all differentiate in some way between issues focused on *self* and wider issues embracing *others*. It might be that they will indicate if and how teachers are making connections between these. If environmental education is understood to be knowledge-based, there will be many differences between for example African (others) and British (self) issues. If it is seen to be values-based, then there are likely to be fewer fundamental differences.

Fran's response suggested that she was probably referring to the physical environment. She implied differences that might be problematical to relate to one another. If environmental education were confined to received knowledge, then obvious connections might be difficult to make. The concept of them and us would remain unchallenged. If it became a co-operative endeavour to construct knowledge, the search for common ground and mutual interest could take place. Connections would be easier to make, and attitudes could be reexamined in the light of new knowledge.

> Fran: *"Somebody might end up doing something about some aspect of African art because they think it reflects the environment in which those people live... the problem is you wouldn't necessarily be relating it to ... issues that are in this country."*

Constraining environmental education within the mode of transmission of received knowledge effectively ensures that it cannot be clear a route towards what Ball (1994, p.145) called *'thick morality'* where *'shared values and common sentiments'* arise from an ethic of civic virtue. This contrasts with the characteristic of the *'culture of self-interest'* that is promoted by the ethics of the New Right educational market. So Fran's response implies an environmental

education model that has failed to embrace *'thick morality'*. It stops short of searching for shared values. The ethical dimension of environmental education is likely to be poorly developed if self/others connections are not explored. This self/others dichotomy emerges from the rational educational paradigm where predetermined knowledge is transmitted. It would not be easy to sustain such a dichotomy within a reforming, collaborative endeavour.

Harriet described understanding of self/others differences by relating them to pupils rather than to curriculum content. She implies that somehow younger, less mature or lower ability pupils are unable to develop a holistic understanding of environmental issues.

> *"I think higher ability kids are more likely to see it* (environmental education) *holistically and the lower ability students often don't see a fuller picture. But I think it is also to do with age that students have a very narrow view of things and a very narrow experience and often they can't see the importance outside of their little world. ... probably as they mature they do have more ability to see things from more of a perspective. But there are some pupils that aren't able to do that because they are so involved in their own little life."*

She makes a value judgement about the *life* and *world* of these pupils being *little* rather than acknowledging the possibility of shared values and common interests rooted in different, but nevertheless rich, experiences. Pupils' experiences and views are described as *narrow*. Reference is made to what pupils *can't* see and even the acknowledgement of a maturing perspective is qualified with *probably*. These are judgements that are most likely to emerge from the rational educational paradigm with its assumption that quantifiable knowledge is the best measure of educational achievement and potential. In some ways this attitude could be seen to be an abandonment of professional responsibility in that it implies an acceptance that intellectual development must necessarily be

determined largely by immediate family circumstances. There are a number of assumptions about both society and education inherent in this statement including the apparent inevitability that education can do little more than replicate the status quo. This is not a promising basis for realising the transformative potential of environmental education and indeed is not even a sound basis for the knowledge transmission process of the rational educational paradigm.

Janet sees environmental education as beginning with self understanding and then radiating out to understanding of increasingly wide perspectives although she does not articulate a global dimension. A larger *self* is emerging but there are still *others* elsewhere on the planet.

> *"... you'd start from your own personal attitudes to people in your family and your home. Then to your neighbourhood. ... Then out to look at how the country sees it. What's happened to our countryside."*

The omission of a global dimension of environmental education would have implications for a citizenship curriculum. Gilbert (1997, pp. 73-76) considered that environmental concerns could give substance to the concept of global citizenship and could offer important forms of political expression. Shared experiences and values in a material world could be the basis for new concepts of rights.

Josh made a link between Third World issues and also poverty in our own country by recognising that both affect the environment. However, there was a sense that somehow *their* poverty is different from *our* poverty.

> *"Other issues include ethical issues like Third World things and ...also poverty in our own country. I mean they all affect the environment around us."*

So once again the self/others dichotomy is articulated.

For the students embarking on a PGCE course, the majority responded that they considered addressing global issues such as poverty in developing economies, and also developing community problem-solving skills to enable community action, as being important aspects of environmental education. These were individuals who were not yet immersed in the daily issues of managing a teaching and learning environment. For practitioners, most responses centred on those daily issues. Embedded in the responses from these practitioners are beliefs and assumptions about differences between self and others that can override the search for the shared values that form the essence of both socially transformative environmental education and global citizenship. Without a global dimension and development of globally shared values, environmental education could too easily stagnate at the point where ecological risk is recognised and then merely displaced to others.

However, there is an inherent dilemma in the search for shared values. It can be interpreted as the abandonment of egoism in favour of some kind of empathetic merger with others, and this can lead to failure to retain a sense of the separate identity of others. One way to overcome this dilemma would be to explore the notion of enlightened self-interest. Josh may be implying this by saying, *"I mean they all affect the environment around us."* A number of models of *self* with their usefulness for environmental understanding have been described by Plumwood (1995) but until teachers are liberated from the constraints of a rational, prescribed, utilitarian curriculum, they are destined to be of no more than academic interest.

Each of the responses in this section illustrates assumptions that are being made about complex issues that have profound implications for how teachers might engage with the environmental education curriculum and indeed with the whole curriculum. They also reinforce the view that the environmental education

debate reflects the education debate. What is clear is that the space where teachers might reflect on their assumptions has been closed by education reforms that have overwhelmed teachers' time. Apple (2000, p. 117) claims that the danger of this deskilling of teachers is that *"...when individuals cease to plan and control a large portion of their own work, the skills essential to doing these tasks self-reflectively and well atrophy and are forgotten."*

Gayford (1998, p.111) considered that there was a need for teachers to begin to understand the theoretical debates about environmental education. The responses above point to a need for teachers to reflect on assumptions they make. Apple (2000) fears that the deskilling of teachers will result in the atrophy of the skills needed to be reflective. It is difficult to see how these can be reconciled within the dominant, rational education paradigm. For environmental education, within the context of a school curriculum, its manifestation within the knowledge and skills domains is likely to remain unchallenged.

4.2.18 Code label: Personal action, knowledge, commitment

It was noticeable that when given the opportunity to do so, few of the participants offered any personal experience or commitment to environmental education provision. This raises the question of the extent to which teachers consciously transfer important personal beliefs into their teaching.

Paul, a head of an RE department, when asked if he had any personal experiences that were relevant to environmental education responded, *"Not really, except perhaps I do a lot of walking in the hills"*. He continued by talking about the spiritual experience of hill-walking. Studies suggest that the single most influential factor leading to environmental awareness and concern is experience in the natural world (Palmer, 1993, Palmer and Suggate, 1996). When

asked if he would like to give his pupils the same experience, Paul replied, *"I'm not qualified"*. When probed with, *"If you could?"* he responded,

> *"I've got to that stage and I'm getting too old to take mountaineering certificates now. You know you've actually got to be a mountaineer as well now..."*

It was surprising that he persisted with reasons for why he couldn't and did not express that he wished that he could. As head of the RE department, his area of the curriculum retains the possibility of addressing a values agenda, but when asked about the extent of a school's responsibility for addressing values and attitudes issues, he replied,

> *"I think we should be involved in this in the sense that behaviour within the school is certainly our remit, and we should be able to impinge on that and conduct youngsters through that, talk them through it, disciplining them through it, enabling them to, and basically I mean, yes, lay the law down and say, 'Look this society that we have here in this school, we do not accept this, we do accept that ....' Youngsters need to learn that as they grow up, it's one of the points about growing up.*

Nothing he said suggested that he considered education could be transformative. He also conceded without question to governmental control when he said, *"If government says we must produce 100% scientists and no artists, we have to produce 100% scientists and no artists."* Here was an individual who worked in and indeed nominally managed the interpretation and delivery of an area of the curriculum where the values issues of environmental education might be addressed, and yet he seemed to be unaware of the potential learning opportunities. He also seemed to consider education to be a discrete endeavour in that his personal values were not necessarily connected to his professional role.

Angie claimed a personal commitment to environmental issues with *"I am a member of the Green Party..."*. She carried on to use her supply teacher status as a reason for being unable to engage with environmental education. Although supply teachers have particular professional challenges, she seemed to be unaware of the opportunities. Once again personal values and beliefs seemed to be unconnected with professional responsibilities.

Joan was the only individual who specified personal actions.

> *"I don't use bleach very often; I use white toilet paper rather than blue; I use non-biological washing powder. I would be* (more environmentally friendly) *if it was less complicated."*

The examples she gave illustrate consumer choice rather than a reflective consideration of her personal values. Important as consumer choice might be, as a strand of environmentally informed behaviour, it contributes little to a more profound understanding. Indeed it might have an adverse effect if it is used as a proxy for fundamental change.

These three responses were the only examples with a clear reference to life experiences from the personal lives of the teachers in this study. Palmer (1998, p.240) acknowledged that, even where successful formal environmental educational programmes are in place, their influence may not be as great as other significant formative events in an individual's life. However, it is clear from what these three individuals say, that significant life experiences may not necessarily influence teacher practice. Implicit in these responses is a gap between what teachers hold as personal beliefs and the beliefs they hold about their professional responsibilities. It seems that the demands of a restorationist curriculum have effectively overwhelmed the potential for personal beliefs to inform curriculum interpretation. In such a professional environment it is difficult to see how

teachers can develop the skills and confidence to do more than address that which is clearly defined in policy statements.

4.2.19 Code label: Skills

Beyond the content of the science and geography curricular statements, environmental education is referred to in the PSHE and Citizenship policy documents, so teacher beliefs about these will have implications for environmental education. As a consequence of the conventional subject-specialist role of secondary school teachers, issues arise about teachers' attitudes and their skills base for delivery of any aspect of the curriculum that cannot easily be assigned a clear place in a traditional subject area. References to these issues were voiced by several teachers in this study, often relating to personal and social education (PSE), personal, social and health education (PSHE) or even personal, social, health and religious education (PSHRE). The evolution of PSE to PSHRE in some schools could be seen to be a pragmatic response to the issue of locating some aspects of the curriculum. If a school feels obliged to find a timetable space for curriculum which is difficult to locate elsewhere, a simple solution might seem to be to include it in PSE provision. The reservations expressed are relevant for environmental education for two reasons. Firstly, some aspects of environmental education cannot be clearly embraced by any single traditional subject area and secondly, some aspects are being addressed in PSE in some schools. So, factors reflecting teacher commitment to PSE are likely to similarly impact on environmental education or indeed any other cross-curricular theme such as Citizenship.

Joan has responsibility for PSE co-ordination in her school and she described a number of problems that she has to overcome.

"It's different every year. They're not people that are particularly interested in PSE. They're just the form tutors. ... I don't do any INSET with these people. What I do is develop all the work and I put it conveniently, weekly in their pigeonholes and most of the staff are happy with the materials. Some of them develop the material further than what I've given them; some people do just what I've given them. So really the quality depends on the member of staff. It's not a problem and yet there are things that could be better."

She acknowledges a number of factors that impact on the quality of PSE provision. Clearly provision is in the hands of form tutors and this means the majority of staff in the school are involved. She claims that they are people who are not particularly interested in PSE but also that there is no INSET time allocated. It seems that it is a low priority for both classroom practitioners and school managers. Joan's claims that *it's not a problem* and *the quality depends on the member of staff* imply that she is satisfied that she has fulfilled her responsibility by providing materials for use and that responsibility for the quality of provision lies elsewhere.

Rob referred to the skills base of training teachers.

"I see people coming into school as trainee teachers and doing some observation and some classroom work and yet the input from the locations that are meant to be training them seems to have gone down. I get the feeling that the young folk who are coming into education, and some not so young folk, the extent of their training means preparing them to be in a classroom with x kids. You can provide them with some background of what the national curriculum might be, but the job of a teacher has mushroomed beyond all comparison to that. ... It's all the other aspects of a teachers life that to me just doesn't seem to be catered for in terms of particularly PGCE training."

He continues at length about how the financial resourcing flowing into schools for trainee teacher support is inadequate and often used for other purposes. There is an anomaly here. At a time when teacher training was almost exclusively the responsibility of Higher Education, a common observation in staff-rooms about students was that they were overburdened with theory and they would learn more actually *doing* the job. Now a partnership between schools and HE for teacher training has been created and funding has been redistributed from HE into schools. He seems to be unaware that responsibility for training is now partially that of schools, and HE input justifiably has reduced as a consequence. He implies that trainee teachers are given nothing more than a tool-kit of knowledge and that alone is inadequate for their needs as teachers. He seems to want an intake of fully formed new teachers. If continuous change and adaptation are not part of teacher's conceptualising about their role, this is not good news for environmental education – either for policy formation or for implementation.

The debate about teacher training is outside the scope of this study but Oulton & Scott (1998) point out that the assumption that conditions are right in schools for environmental education to take place, and that all that is needed is for novice teachers to have a prescribed set of competencies is unrealistic. They continue by asserting that "... *there might be considerable constraints and that management of innovation issues and processes are involved, which means that there is a need to introduce teachers and novice teachers to theory and practice of the management of innovation in order to prepare them to take an active role within schools. We prefer the phrase 'environmentally educating teacher' as this signifies the dynamic nature of the process we are considering*" (p. 260).

What both of these teacher responses highlight is the need for a process of professional development, if environmental education is to develop beyond the subject-specific requirements of science and geography. Oulton & Brown ask, "*Where is the staff development for this to occur?*"(p.260). None of the teachers

in this study referred to any specific environmental education staff development that they had experienced, so the question remains to be answered.

4.2.20 Code label: Bias by neglect

The following extracts shed light on two aspects of teacher perceptions of the balance/bias conflict. One relates to the perceived balance between components of the whole-school curriculum. The other relates to balance created within lessons.

None of the teachers interviewed for this project expressed the view that environmental education could be a framework within which the rest of the curriculum could be constructed. Many saw it as an element of the curriculum where decisions needed to be made about its location. Some defined it within a cross-curricular concept and outlined their reservations about the problems of co-ordinating that type of provision. Some perceived it to be an aggregate of discrete elements of a conventionally structured curriculum with, for example, some aspects belonging to geography and others belonging to science.

Janet referred to *a separate heading* which implies that she considers curriculum to be an aggregate of topics. She also does not include people, which suggests that the environmental education for her, is about the environment surrounding people rather than an environment where people are integral elements.

> *"I don't tend to include personal things like the sanctity of life. I suppose I should do but I tend to separate that, probably because on my syllabus it comes under a separate heading. ... I don't include the environment."*

This evident bias towards the prescribed curriculum has effectively marginalised environmental education.

Jo's response was typical of the reaction to the cross-curricular themes.

> *"The trouble with the cross-curricular themes is nobody seems to bother about them any more and they've sort of died a death. Nobody checks them, nobody has responsibility for them. So we just presume that people are delivering what they should. But there's no actual documentation that's up-to-date that I'm aware of, about the cross-curricular themes and issues."*

There was no evidence anywhere in these interviews that the cross-curricular themes were carefully co-ordinated features of the schools' curriculum. There was one response that described links between science and PSE but that was based on the commitment of two individuals rather than a management outcome. There was also no evidence that the school curriculum was considered in a holistic way. If environmental education is to be effectively developed in such circumstances, there is a clear need for a committed co-ordinator, and there was little evidence of co-ordination taking place even where there was a co-ordinator in post. The current position is that there is defined provision within science and geography and some loosely described provision in PSE and Citizenship. The responses in this study reinforced the dominance of environmental education provision within the knowledge and skills dimensions of the science and geography statements.

Fullan (1991) refers to the bias of neglect and points out that "... *the majority of curriculum innovations are directed at cognitive/academic goals rather than personal/social development goals. The former are more concrete, easier to implement and measure, and probably more elitist (academic) in their consequences*" (p. 26). It seems that environmental education in its richest and

transformative mode is a victim of such bias. Whether by design or default, it has been introduced into schools in a way that allows all but the knowledge and skills domains to be neglected. Teachers who otherwise feel overwhelmed by the continuing demands of innovation and change can be forgiven for such neglect.

This issue of bias emerged in many of the interviews with teachers. There seemed to be an overriding concern to achieve what was often described as balance, although no-one acknowledged the issue of whose balance. There was often an assumption that there are only two aspects (*both sides of an argument*) rather than a more complex web of knowledge requiring more than facts and figures to develop a clear understanding of controversial issues.

This is the kind of concern that is more likely to emerge within a rational education paradigm where 'official' knowledge is transmitted from teachers to pupils. It is much less likely to be a concern where pupils and teachers are engaged in co-operative learning, and are constructing the knowledge societies need. For environmental education, the rational paradigm places teachers in a position where they are expected to be able to define environmental problems, and then to be able to present solutions. The inventive paradigm however, allows teachers and pupils (who are in fact jointly citizens of society) together to firstly discuss and make decisions together about what are the most important environmental issues, and then to begin to formulate appropriate responses. That is not to say that teachers do not have a particular kind of responsibility in the inventive paradigm. There will clearly be situations where teachers' expertise can facilitate this process. Their research skills, their language skills, their reflective skills for example, can all be used as exemplars to illustrate how the process of constructing knowledge can be developed.

In QCA Citizenship at Key Stages 3 & 4: Initial Guidance for Schools, published in 2000, environmental issues are acknowledged as being likely to be sensitive or controversial and there is an Appendix devoted to guidance on the

teaching of controversial issues. It advises that "... *(t)eachers should adopt strategies that will teach pupils how to recognise bias, how to evaluate evidence put before them, how to look for different interpretations, views and sources of evidence, and how to give reasons for what they say and do"* (p. 35). Such advice is likely to be no more than rhetoric unless the assumption can be made that teachers themselves have the knowledge, skills and attitudes to be able to support these strategies. Some of what follows suggests that many of them do not.

> Clive: *"Yes and no. I think a teacher should always give both sides of an argument. ... But in terms of politics, you could always give them your point of view but you've always got to be objective as well. It's a very fine line because some people are very passionate and I don't believe that you should try and push people into believing what you believe. ... I'd give them the facts and the figures. I'd give them both sides of an argument and let them make their own minds up."*

Although Clive clearly expressed that he would supply *facts and figures* and would give pupils *both sides of an argument* to enable them to make up their own minds, nothing he said implied any recognition that pupils arguably have a greater stake in addressing environmental issues than he has. They are likely to live with any problems longer than he will. He has his *point of view* and knows what he believes. He also believes that there is an objective position to be found. This approach to the curriculum is almost inevitable for individuals whose own education was within the rational paradigm, especially if there has been little subsequent opportunity to critically reflect upon their beliefs about education. Indeed, if the ERA has been designed with the intention of imposing a restorationist curriculum, a rational, empirical paradigm is further reinforced. So Clive's approach falls short of the advice from QCA about how to address controversial issues.

Harriet: *" I try to give a balanced view but I think the kids often come with a view that isn't balanced and if you're talking about* BNFL *the pupils often come with their perception about what they feel about it and what they feel based upon what their family is telling them. ... You try not to put your own judgements into them and you try to present both cases."*

Harriet, like several of the teachers in this study, also uses the term *balanced* and then continues by saying *both cases.* It is almost as though she believes environmental issues are either/or situations rather than a complex of competing values, expectations and needs for us all. Again the implication is that she feels she is responsible for developing the process of identifying issues and, where possible, supplying information to facilitate individual pupils towards their own decision. There is no hint that she recognises that co-operative learning is more likely to lead to active pupil involvement in '*how to look for different interpretations, views and sources of evidence, and how to give reasons for what they say and do'*.

Jo: *" It's nice to think you could* (change behaviour). *What I always try to do is in the values and attitudes is to put both sides and to try to give a balanced view. But I'm maybe sometimes naughty in as much as if the class is very obviously biased in one particular way, I will go the other way and make them realise."*

When she uses the expression *both sides* Jo reinforces the dichotomous perspective on the values and attitudes domains of the curriculum and again there is the assumption that a *balanced view* is the desirable objective. The implication is that she believes there is an identifiable, externally supportable viewpoint that is free from bias. She does at least claim to challenge her pupils' views, and therefore is encouraging the development of their critical skills, but it is interesting to see that she considers this to be *naughty.* Is she implying that, in doing so, she feels she is somehow stepping outside her perception of the role of a

teacher as a transmitter of knowledge? She also refers without qualification to the bias of the class as though bias per se is to be avoided rather than it possibly being a consensus view about an issue.

Fran's response suggests that she too is preoccupied with the issue of balance.

> *"Yes to try and make them aware that there are other opinions that people can hold equally strongly to those that they hold."*

She believes that pupils need to understand that *there are other opinions that people can hold equally strongly.* This implies that she limits her role to raising pupils' awareness of the strength of other opinions, but she appears to avoid any critical examination of either their own or others' opinions. She seems to be defining her role within the positivist paradigm described by Robottom & Hart (1993, p. 26) where she is the *authority-in-knowledge.* She is going to *make them aware* that there are other opinions but she stops short of the interpretivist model where she would challenge pupils' opinions or the critical model where they would develop the skills to critically examine all opinions.

Tim also is concerned with balance.

> *"Party lines very often deliver things that are inappropriate at certain times and a balance is much better."*

Somehow there is an assumption being made that there is a balance point where information and knowledge can have neutral values rather than that balance may be a shifting, consensual and negotiated position.

> Jenny: *"When I'm discussing PSHE with other teachers, I say you have to try get them to listen. They have to receive the information, be prepared to listen, to look at it and see it as a choice, an alternative way of thinking.*

Or even if for them there isn't an alternative way of thinking, at least they know where other people are coming from."

This came from a teacher who is immersed in a values/attitudes aspect of the curriculum (PSHE). Pupils *have to receive the information, be prepared to listen, to look at it and see it as a choice, an alternative way of thinking.* The implication seems to be that predetermined choices will be presented rather than possible options will be designed and discussed for their relative values. She makes no reference to pupils constructing values or even knowledge. Understanding that there are alternative ways of thinking is just the first step. There seems to be an assumption that awareness of different views is adequate. Curriculum needs space for pupils to critically reflect on their own values/attitudes in the light of heightened awareness. Knowledge of alternatives has little value if it is not used to reflect on personal values/attitudes/behaviour.

What emerged strongly from many of the interviews in this study is that there seems to be a considerable degree of anxiety amongst teachers about exposing themselves to accusations of bias in their teaching. The knowledge and skills domains of the curriculum seem to be safe territory where it is believed that their teaching can be supported by rational, scientific or empirical knowledge. For the values and attitudes domain of the curriculum, where there is no externally generated prescription, teachers are uncertain about what their role could be. This uncertainty coupled with the erosion of professional confidence that took place throughout the period surrounding the ERA, seems to have generated a degree of anxiety that has resulted in their reluctance to engage with any curriculum that is not well-defined. This reflects the findings of Gayford (1996) who found that educators are often genuinely concerned that environmental education may become indoctrination, especially as it is so often taught by individuals with strong personal views, who may use the opportunity to promote particular ideologies.

So the preoccupation with balance that emerged from these interviews may be an inevitable outcome of a combination of the professional insecurity generated by the New Right discourse of derision that took place, and the long tradition of political neutrality in education. It might also be the case that expecting teachers to oscillate between the positivist and the interpretivist/constructivist paradigms is unrealistic if all their training took place within a positivist paradigm in a reductionist tradition and their professional skills have been harnessed to deliver a restorationist curriculum. The preoccupation with avoiding bias is not unexpected in the circumstances.

The rhetoric about how to deal with controversial issues that is to be found in the QCA Citizenship at Key Stages 3 & 4: Initial Guidance for Schools(2000) statement: *"Teachers should adopt strategies that will teach pupils how to recognise bias, how to evaluate evidence put before them, how to look for different interpretations, views and sources of evidence, and how to give reasons for what they say and do"* (p. 35) is unlikely to be realised in practice unless teachers believe that they are genuinely 'permitted' to stray into biased territory. There was little in these interviews to indicate that they were prepared to take that risk.

4.2.21 Code label: Assessment

The issue of how best to assess pupils has been described by Ball (1994) as being the confrontation between the *"...'old' educational establishment – in favour of diagnostic, problem-solving, open-ended, process-oriented, teacher assessments – and the cultural restorationists – in favour of publishable, measurement-based, competitive, pencil and paper, externally set tests and examinations ..."* (p.40). He continues by pointing out that the New Right considered *simple* tests to be revealing, unequivocal and commonsensical, but *complex* tests to be misleading and producer-based, the producer being the teacher

in a market-oriented model of education. There is no doubt that the emphasis is currently heavily in favour of the *simple* tests preferred by the restorationists. Indeed, there is a gathering momentum to the debate about whether there is educational merit in the degree of testing now being experienced by pupils in English schools. Furthermore, Ball points out that significant changes in teachers' classroom practice can now be engineered by decisions about assessment and curriculum that are imposed from a distance. This raises the issue of the extent to which teachers' practice has been influenced by the New Right agenda.

Of course, the debate about assessment is much more complex, and includes issues about formative/summative modes, records of achievement, continuous assessment, teacher assessment, self-assessment and criterion referencing. Gayford (1998) points out that an important aspect of environmental education is its concern with affective learning, as much as cognitive learning, and that assessment of affective learning has always been a problematical issue. He continues, " ... *but unless there is a willingness to resolve this type of difficulty, a good deal of what constitutes broad and balance* (sic) *education will become marginalised"* (p. 103). What is relevant to this study are the views being expressed by teachers about the impact of assessment procedures, whatever those might be, on their practice and how those might influence environmental education provision.

Many of the responses in this study suggest that assessment is indeed exerting considerable control on much of what teachers now do, and they also support the view, outlined by Gayford (1996), that there is now a danger in education of believing "... *that if the qualities to be developed cannot be measured, then they cannot be suitable priorities of education"* (p. 12). If this is the case, the outlook for environmental education is worrying for two reasons. Firstly, the aims and objectives of environmental education remain resistant to clear definition and *simple,* measurement-based tests are inappropriate. Secondly,

without clear assessment criteria, there is a real danger that environmental education will be considered to be of minor importance in a school curriculum.

It seems significant that none of the teachers interviewed acknowledged different modes of assessment. There seemed to be assumptions made that assessment is now principally concerned with measurable learning outcomes. The following response from Rob implies just that, and he is unequivocal in believing that curriculum is driven by assessment and, as a consequence, so is his practice. He clearly feels unable to develop curriculum issues that he feels are worth developing. He has little control of the curriculum, and aspects of his practice are also being controlled from a distance in the way that Ball (1996) suggested.

> *"From a geographer's point of view there are a lot of issues that come up on an ad hoc basis that we'd like to have some space to address and not be too frightened that if you used up that lesson, that would really affect down the line the assessment bit. I would dearly love for us to have a curriculum that was less driven by assessment, I do believe it is driven by assessment."*

So, for Rob, assessment is a tool to control curriculum content and also aspects of teachers' practice. George's response similarly suggests that it is used to control what teachers do.

> *"... we were required to show evidence, you know, to measure it, how often does it happen? How many, where does it take place in the lessons? I mean, I think whatever you say about OFSTED and people like* (the Chief Inspector of Schools), *I think we should be made more careful as to what goes on in schools."*

When George stated that teachers should be *made more careful about what goes on in schools,* he reinforces the control-from-a-distance aspect of assessment

procedures. He seems to be clear that accountability should be via *hard* evidence supplied to OFSTED. The implication is that assessment procedures should be designed to monitor curriculum outcomes rather than to be used as a diagnostic tool for developing learning, or to record cumulative information as the learner develops. So, he sees assessment as a way of monitoring what teachers do and also as a measurement of learning outcomes. He either assumes that all learning outcomes can be measured, or that there is no place in the curriculum for those that can't, which is a concern expressed by Gayford (1996).

Joan also suggested that assessment was control-from-a-distance.

> *"I mean there is the theory you could apply here, isn't there? They want it measurable just to make sure that it's being done. I think if it's measurable in terms of lessons, and lesson plans and schemes of work are available, I think that's one thing. But I think measuring outcomes in terms of children's attitudes and behaviour, that's a different thing."*

She then pointed out that measurable outcomes are not appropriate for aspects of learning such as attitudes and behaviour. These are key areas of concern for environmental education. She has highlighted the dilemma for a system where measurable outcomes are considered to be key indicators of achievement, but there are unresolved issues about measuring what are core learning outcomes for environmental education. Schools are faced with the problem of how to respond to expectations of demonstrable success in environmental education provision.

Janet was the only individual in this study who suggested that the emphasis on assessment might have also created the opportunity for data to be manipulated to create the impression of apparently improving standards.

"For what purpose? So that children in secondary school, they'll do better in their SATs and when they do their GCSEs, they will get a higher grade, so we will in effect raise awareness and raise standards apparently."

The now perennial political and media claims and counterclaims about the rigour and standard of examinations do not appear to be a constant preoccupation of teachers. This is likely to be because examinations and their standards and rigour are externally controlled, and teachers cannot be held responsible for any perceived decline.

Josh is a recently qualified teacher and much of his own school experience will have been within the structures created by the ERA.

"I think the only way forward for this is for the government to make it a big issue ... and say 'Right, this is going to be done ... but it has to be enforced for it to take place and you are going to ... educate our kids with this." And then enforce it. And that's how it happens you know. I mean one way of enforcing things is to throw in an exam at the end of the day and say it's going to be certificated. ... And then it becomes more important. But unless the government force it through, well I can't see any way in."

When giving specific consideration to environmental education, he made two forthright observations. He was unequivocal about seeing enforcement from a distance (i.e. by government) as the only way to ensure a place for it in the curriculum. He also felt that enforcement could be assured by examining and certificating it. His use of *enforcement* implies that he believes that curriculum provision now needs to be supported by statutory instruments.

In practice, assessment now appears to be widely assumed by teachers to mean measuring outcomes and also to be a way of monitoring and controlling what teachers do in a classroom. A review of research on assessment in geographical education that was carried out by Daugherty (1996) pointed out the interaction between assessment, curriculum and pedagogy and he concluded that research "... *must be about how assessment arrangements interact with curriculum and pedagogy as about the assessment process itself* (p.249). It seems that many teachers feel that the existing balance is biased towards narrowly defined assessment procedures, and this is dominating their own classroom practice.

There are several implications for environmental education provision. Huckle (1994) suggests that most environmental education will be delivered within geography and science because most schools and teachers "...*will understandably concentrate on the subjects on which pupils are to be tested and in which they are examined and appraised*" (p. 103). Many of the responses in this study confirmed this suggestion. This may even explain why environmental education as a cross-curricular theme was omitted from the review of the National Curriculum. It could be said that, by default or by design, the New Right, restorationist agenda ultimately achieved a goal. What also emerged is that some teachers believe that, if aspects of curriculum are not tested in some way, then pupils consider them to be less important. This is a claim that can be used to justify curriculum priorities in schools and is also a claim that would merit further research. Is this really the case? Or are pupils merely reflecting the attitudes of the system? What happened to the concept of the teacher as a motivator?

If assessment issues *have* been responsible for a wide-ranging and long-term subsuming of environmental education into science and geography then, using the tripartite model, education *about* and *in* the environment can be addressed but the socially critical theme of education *for the* environment is likely to be unmanageable. Huckle (1994) considers a further consequence by being critical

of the technocentric rather than ecocentric philosophical emphasis embedded in curriculum emanating from government hierarchies, which would include science and geography. So, it seems that many teachers feel that assessment in the form of measurement of outcomes, is exerting irresistible pressure on them to focus their work on examination requirements. This may be an inevitable outcome of the introduction of market forces into the world of education. Ball (1994) suggests that, in this new context, impression and impression management are becoming as important as the education process itself. He continues by claiming that, *"Teachers' work is thus increasingly viewed and evaluated solely in terms of output measures (test scores and examination performance)..."* (p. 51). As a consequence there is a strong possibility that environmental education provision will be confined within the parameters of examinable curriculum which effectively confines provision to the knowledge and skills domains. Assessment issues are therefore likely to be directly or indirectly influencing environmental education curriculum content.

4.2.22 Code label: Serendipity

Of all the teachers who participated in this study, Jenny was the only one to explicitly acknowledge the possibility of a serendipitous aspect of some curriculum development. In her case it was the mutual respect between her and the science department that promoted her input into exploring with them opportunities to create links between work in PSHE with work in the science curriculum.

Jenny: *"By serendipity. An example of that, and this is no criticism of anybody, is the mutual respect that I have, the work that I do alongside the science department."*

She had been able to work with them to co-ordinate PSHE work on roles and responsibilities in relationships with the science work on reproduction.

> Jenny: *"... this bit is covered by PSHE where I still have a little bit more say about what goes in. I know the government will eventually get round to that as well."*

The flexibility in the PSHE curriculum gave her the opportunity to do this but she expected that government would eventually closely prescribe that also. It is possible or even likely that similar co-operation takes place in other schools, but it is a concern that what is often referred to as the Balkanisation of subject areas in schools seems still to be so deeply embedded, that she felt it worth articulating it as she did. Of even greater concern for some aspects of environmental education is that she expected that government would eventually intervene to remove such opportunities. This is yet another example of how little opportunity there now is for teachers to collaborate on curriculum delivery.

For environmental education to be extended beyond the confines of the knowledge and skills dimensions, such co-operation between teachers of geography, science, PSE and citizenship needs to be fostered, and yet Jenny anticipated that government would eventually intervene to prescribe more closely the PSE curriculum. The kind of serendipidous co-operation she describes is in any case dependent on the commitment of individuals rather than being the norm, and that can too easily evaporate if circumstances change for them.

Chapter 5: The Emergence of Theory.

For the next stage of the process, intimate knowledge of the data should allow the researcher to begin to group concepts under '... *a more abstract higher order concept, based on its ability to explain what is going on'* (Strauss and Corbin, 1998, p.113). The labels attached to concepts and categories evolved as understanding of the data increased. Grouping of concepts began to take place as the accumulating data supported or undermined the initial open coding. As it became clear that there was sufficient supporting data, the process of grouping the concepts into categories could be carried out, although these categories still might have needed revision. If incoming data undermine the initial concepts, the researcher needed to seek further data to clarify the meaning of the texts. For this type of study therefore, data-collection is likely to be ongoing for much of the duration of the project. In this study, some follow-up contacts were made where possible to add to data. For example, two telephone contacts were made some time after the introduction of the Citizenship curriculum. It was possible that its introduction might have generated some change in attitudes to curriculum. In this case they did not reveal data that challenged existing categories.

In chapter 4, during the processes of interpretation and discussion of coded text units from the interviews, a transition from open coding to axial coding has been taking place. Strauss & Corbin (1998) point out that *"the purpose of axial coding is to begin the process of reassembling data that were fractured during open coding"* (p. 124). So, discussion of the coded text units that initially might have appeared to be episodic, and possibly disconnected concepts, began to reveal how they interconnect. Strauss & Corbin continue by making the following *major point:*

> *"Although the text provides clues about how categories relate, the actual linking takes place not descriptively but rather at a conceptual level"* (p. 125).

An example from this work would be 4.2.5 Self/others and 4.2.12 Change. In each of these teachers were expressing views that illustrated a lack of opportunity to reflect on aspects of the curriculum and how it could be enhanced. This raises the question, *"What is going on here?"* Possible answers to that question may arise at any time during the analytical process. The ultimate aim is to identify a central category. Strauss & Corbin (1998) acknowledge that describing one central category that links other categories can be difficult, but point out that the power of a central category is *"... its ability to pull the other categories together to form an explanatory whole"* (p. 146). As this work evolved through the interconnecting and overlapping data-collection, interpretative and written discussion phases, three important categories initially emerged from what teachers were saying in conversations about environmental education. There were times when the initial concepts seemed to be unrelated to environmental education and their significance only became evident as these categories were identified. Identification of a central category did not emerge clearly until the writing phase was underway.

5.1 Outcomes of the data analysis

At the beginning of this study, the following were the core questions:

- What do teachers articulate about their beliefs about environmental education?
- What, if any, structural impediments did teachers describe that hindered their ability to deliver an environmental education curriculum?
- What changes were needed to enhance the delivery of environmental education?

As the work evolved, three major categories emerged from what teachers were saying in conversations about environmental education. The beliefs and attitudes embedded in these categories begin to answer the questions at the core of the study. Those categories are:

1. Role: It was within this category that teachers revealed much about how they define their teacher identity and how that translates into fulfilling their tasks and responsibilities. This begins to answer the question about some of their beliefs about environmental education.

2. Confidence: Here teachers articulated thoughts that revealed whether they feel that they have the skills and aptitudes to confidently engage with delivery of an environmental education curriculum. From this emerged their perceptions of the impediments to effective delivery.

3. Control: Here teachers were revealing their perceptions of the degree to which they have control over aspects of their role and the implications for enhancing environmental education curriculum delivery and development.

These three categories will now be discussed in more detail.

5.1.1 Role

At each stage of the analysis of these data the role of a teacher emerged as being that of transmission of predetermined, subject-based knowledge with pupils being recipients of that knowledge. This concept was so dominating that not only did it emerge in the responses when teachers were asked to describe their role but it constantly asserted itself when they were apparently discussing other issues. There was one exception when an individual said that they thought their main role was as a form tutor. This was the lone response that hinted at the adage from my own professional training in the 1960s: *You will be a teacher of children rather than a teacher of mathematics.* At that time I had a superficial understanding of what that might mean, but it certainly was the key to developing an understanding that teaching should be a more profound endeavour than the mere transmission of

subject knowledge that I thought I had witnessed during my own experience as a pupil.

How teachers construct their professional identities must inevitably begin with what they see and experience during their time as pupils. The majority will then enter teacher training very soon after leaving this experience and initial teacher training will exert some influence. This professional identity will then continue to be influenced by their working experiences. Such a progression is likely to reproduce the status quo unless a transformative intervention takes place at some stage. Atkinson (2004), when considering how student teachers form their identities, concluded that:

> *"Today it would be almost heretical in the domain of initial teacher education to argue against the idea of producing clear and coherent lesson plans, but it has to be recognised that this approach to teaching is informed by a particular ideological framework which constructs teaching and, by implication learning, as a formulaic teacher-led process"* (p. 392).

It seems that there is little, if any, transformative intervention in the initial teacher education process that might challenge students to rethink the benign authoritarianism and didacticism of the traditional teacher role. Once they are qualified and become practitioners, they are then caught in what Griffith (1998) calls an illogical dichotomy between what society wants for the education of children and how it wants it to happen. He points out that these are incompatible or even irreconcilable and describes them as follows:

> *"It seems that what people are either actively seeking, or passively accepting, is a brace of educational opposites: first, a knowledge-based curriculum which is at odds with the type of education that parents want their children to have and that the rhetoric claims pupils are getting – educational citizenship – and, second, a didactic pupil-management system*

at odds with the way parents want their children to learn that curriculum – independent learning" (p. 221).

Goodson (1994, p. 103) points out the parallels between the Secondary School Regulations of 1904 and the Education Reform Act of 1988 including the reinforcement of the subject base of the curriculum and the privileging of 'traditional' subjects. Indeed, Graham and Tytler (1993, p. 20) reported that the National Curriculum Council was instructed to *"... abandon investigations into the whole curriculum"* and to concentrate on *"... the real work of introducing the curriculum."* The effect was intended to be the reinforcement of traditional subject boundaries and hierarchies. Penney (1998, p. 14) observed similar *"... divisions and insulation"* in teacher training and reflected that education appears, in some cases, to be a *"...marginalised and subordinate, rather than a defining voice."*

So, what we are hearing in this study are the voices of individuals who, at each stage of both their learning and teaching experiences have had the role of a teacher tacitly and explicitly defined as the authority-in-knowledge. Curriculum design has been dominated by established and traditional voices and the insulated, hierarchical nature of its components has been reinforced by apparent reforms. (I shall return to the issue of reforms and whether they generate real change at a later stage in this work.) An emphasis on didactic teaching has been increasingly imposed by those traditional and established voices. The 'clock has been turned back' to an illusory golden age of education.

Embedded in this restorationist paradigm is the issue of curriculum resourcing. A number of teachers in this study made specific reference to scarce and unpredictable resources for aspects of the curriculum where the critical mode of environmental education is most likely to be located such as PSHE or Citizenship. Goodson (1994) pointed out that there are both symbolic and material factors forming barriers to curriculum development. The material factors

include that teachers' pay, promotion and conditions are *"... intimately interlinked with the fate of their specialist subject"* (p.188). During my own experience as a teacher and also as a school governor over a number of years, I witnessed erosion of the curriculum as financial considerations prompted decisions to not reappoint or even, on one occasion, to offer the euphemism for redundancy, early retirement, for 'minor' subject areas like geology, Latin and sociology. Subject hierarchy was deeply embedded and reinforced by financial restraints. The symbolic factors include *"... the authority or respect accorded to the subject"* (p. 180). A number of teachers in this study referred to the status of subjects as being interlinked with testing and assessment. Indeed, one was quite explicit that, if environmental education were to be valued, it would have to be tested and certificated.

Against this backdrop of subject insulation and hierarchy, the critical, socially reforming strand of environmental education struggles for a place in the curriculum and competes from a position of weakness for scarce resources. Whether this is by design or by default has little relevance for teachers who have diminishing control over their working conditions. For those aspects of environmental education that do not slot neatly into the defined curriculum content of high status subjects, there is neither the space nor the motivation for teachers to develop curriculum outside the boundaries of their subject areas. Hargreaves (1994) made the case for working at the margins of, and in the spaces between, these subject areas by writing:

> *"In marginality are to be found the most powerful sources of insight and creativity in social and intellectual life. In academic life marginal men and women stand at the borders of intellectual fields and traditions; not to protect and patrol, but to extend and explore ... marginal men and women peer critically but not dismissively into the assumptions and traditions of different fields and make creative connections that often*

elude their colleagues who are too firmly rooted in particular traditions themselves" (p. 8).

Until conditions exist where *marginal men and women* can safely work, the environmental education curriculum is likely to remain confined to the education *about* and education *in* the environment domains. Despite the reforms beginning with the Education Reform Act (1988), there has been no fundamental change in education and indeed, it seems that there has been little superficial change.

5.1.2 Confidence

Two conditions are essential if individuals are to carry out a task effectively. Firstly there is a need to have access to the appropriate tool-kit and the skills to use it. For teaching in its current form, this manifests itself as a bank of knowledge that is adequate for the requirements of the task accompanied by the opportunity to prepare thoroughly. Secondly, and ultimately more importantly, is the need to have confirmation in some way that the task is being or was carried out successfully. Without the second of these, confidence is likely to be undermined. *"We all need praise"* is just as valid at a professional level as it is at a personal level. Maslow's model of a hierarchy of human needs stresses the importance of self-actualization and self-esteem. Self-esteem is essentially evaluative and refers to the extent that we value our identity. This is unlikely to be a product solely of internal factors. The greatest determinant is likely to be the judgement of others. Gross (2001, p. 481) points out that self-esteem can be an overall judgement or can relate to specific areas of our lives and *"... certain characteristics or abilities have a greater value in society generally, and so are likely to influence our self-esteem accordingly."*

It is significant that writers from diverse perspectives acknowledge some factors that are likely to be damaging to teachers' self-esteem. When stating the case for transferring the Total Quality Management model from a business environment to schools, Greenwood and Gaunt (1994) wrote:

> *"Teachers, like any other worker, will feel good about themselves and what they are doing if someone they see as being important openly and publicly values what they are doing"* (p. 71).

They suggest that the following propositions, whether or not they are true, hold for most teachers:

- *"Teachers feel they have been unfairly blamed for many of society's ills – increased crime, illiteracy, innumeracy, vandalism, etc.*
- *Teachers feel that they have been unfairly accused of being left-wing agitators*
- *Teachers have been said to be overpaid, underqualified and underworked. They feel that the opposite is the case.*
- *Teachers feel that they have been unjustly accused of irresponsibility and incompetence"* (p. 69)

Writing from the quite different, critical and post-structural perspective, Apple (2000) pointed out:

> *" Intensification is one of the most tangible ways in which the working conditions of teachers have eroded. ... More and more has to be done; less and less time is available to do it. This has led to a multitude of results. Intensification leads people to "cut corners" so that only what is "essential" to the task immediately at hand is accomplished. It forces people increasingly to rely on "experts" to tell them what to do and to begin to mistrust the expertise they may have developed over the years. In the process quality is sacrificed for quantity"* (p. 119).

Combine these observations with those of Apsland & Brown (1993) who described a *learned helplessness* and deskilling of teachers and it is unsurprising that so many of the teachers in this study expressed a need for guidance if they are to engage with an environmental education curriculum.

Signs of insecurity in individuals in this study emerged in a number of guises. Sometimes the language used was indicative of uncertainty as in the following examples:

"...people could feel very threatened and despondent"

"... a curious reluctance..."

"...there'd be lots of resistance"

Sometimes it was clear that, as Apple (2000) suggested, there was an expectation or reliance on others to tell them what to do.

"...it's still not clear to them how it can be done."

"I still don't think that management has made clear quite how departments can contribute towards the whole thing."

"If a decision was made somewhere along the line by somebody that we're actually going to do this..."

"... and he (head teacher) *is the guide you know who tells us which way to pull."*

In a number of conversations participants felt a need to ask for clarification from me before they ventured a response. One ended with an anxious enquiry about whether what she had said was what I wanted. The following were the only

explicit indications of uncertainty but there were many hesitations that suggested the participants were unsure about how to answer or they needed time to frame an answer that would have no immediate personal consequences. It was almost as though they were trying to avoid the possibility that I would make negative judgements. This is a likely outcome of the propositions described by Greenwood & Gaunt (1994).

> *"I'm not sure. Sustainable forest type sustainability – is that what you mean?"*

> *"I would like a lot more guidance ... and particularly if somebody is doing it for me, in terms of examinations. I would want a lot more detailed information to know that I was working in the same direction and manner as other people."*

The following observation came from the co-ordinator of the Cumbrian environmental education pilot project.

> *"I think the thing that we fell down on was the idea that maybe at the beginning people thought that they would all end up with this flag and we could celebrate that we'd all been marked out as eco-schools took a little bit away from what it was that we were actually trying to achieve."*

The most recent check of the Eco-schools web-site in 2006 showed that none of the three participating secondary schools had followed up the pilot project to achieve a Green flag award.

Her perception was that, once participating teachers realised there was no automatic reward at the end of the project, the broader aim of the project was not realised. It seemed that there was a need for reward or approval in a form that was recognisable. There was no 'certificate' in the form of the eco-school label to

indicate success or achievement. Without praise or reward, confidence in what they were attempting had faded by the end of the project. It was briefly rekindled a few months later when a series of seminars and workshops was delivered by the participants to a wider group of teachers from the LEA . However, subsequent enquiries indicated that none of the participants had made any follow-up contact with the co-ordinator or had availed themselves of a centralised resource bank. The co-ordinator moved on to another task and the project seemed to have been a stand-alone endeavour that was not monitored for its longer-term impact in schools. So, it seems that the intervention of an external 'expert' was not sufficient in itself to generate teachers' confidence in their ability to engage fully with environmental education. The project clearly extended the 'tool-kit' and many of the skills to use it but, crucially, its design could not accommodate confirmation that participants were in some way successfully approaching the task. Subsequent visits to the two most actively involved schools revealed that they returned to the *intensification* described by Ball where only what is essential to the task in hand is accomplished.

5.1.3 Control

Since the 1988 Education Reform Act the process of remodelling education has continued to reinforce the rational paradigm described by Sauvé (1996) and to continue the distancing from the radical tradition. Gillard (2005) summarised the outcomes as follows:

> *"Teachers deliver an imposed curriculum, subject to an imposed assessment system, in an imposed school market. Politicians have been ruthless in their determination to control teachers, to alter their skills, to regulate their performance and to deny them any say in the content of their work"* (p. 179).

Shacklock (1998) situated these developments in what he called *Fast Capitalist Educational Change* where the production of texts and images takes place at such speed that they are impacting on our lives before any critique has been articulated. He pointed out that a range of curriculum and pedagogical matters has now been returned to central control in the apparent interests of notions of 'quality' and 'performance' and continued:

> *"The introduction of centrally managed and universally imposed testing of students has left teachers sensing that their work is being placed under close external scrutiny and that they are no longer trusted to make assessments of educational merit in the work of their students"* (p. 77).

He sees this as one element of the neo-conservative endeavour to 'silence the voice of the enemy within' by restricting the voice of practitioners to a place in the discourse focused, and contained, within classrooms and staffrooms. As Graham & Tytler (1993) pointed out, teachers were quite deliberately excluded from the design of the National Curriculum. They also observed that, when teachers were eventually allowed a limited input into issues surrounding testing, improvements followed. So teachers were and continue to be excluded from decision-making processes about most aspects of education. They are restricted to control of aspects of their work in the classroom and there are increasing attempts to control that also.

Friere (1993, pp. 134 - 135) would describe highly centralised control of education as *cultural invasion* that is both an instrument of domination and a result of domination. *"For cultural invasion to succeed, it is essential that those invaded become convinced of their intrinsic inferiority ... . The more invasion is accentuated and those invaded are alienated from the spirit of their own culture and from themselves, the more the latter want to be like the invaders, to walk like them, dress like them, talk like them."* So, the changes that have taken place in education where curriculum content has been increasingly controlled by

government; where didactic teacher roles have been reinforced by political manipulation of the education discourse, and there is increasing political influence on modes of curriculum delivery, are not conducive to "... *problem-posing education that makes them critical thinkers"* (p. 64).

The following comments confirm that there is an acceptance amongst many teachers that government does control many aspects of education. The first two recognise that a curriculum hierarchy has been reinforced and imposed testing is controlling both content and delivery. It is significant that neither of these comments was made by a teacher of Maths or English. None of the teachers involved in this study indicated that they felt in any way empowered to challenge the hierarchy.

> *"The Government does send out signals to kids about what is important and what is not. And that is going to have a big impact on the way the curriculum is taught and delivered, on time-tabling within the school."*

> *"You've got your numeracy, english, maths, science and technology, A to Cs and SATs scores dominating education now and that's a tragedy."*

The inevitable outcome is summed up in the comment below.

> *"The national curriculum sets out the things for us to teach and we have to teach them."*

Then there are examples of how control is exercised by default. Once Government had established statutory components of the curriculum and reinforced their status with testing, the non-statutory components are assigned a subordinate status that seems to be accepted by teachers. As a consequence of the *intensification* described by Ball (2000), environmental education falls outside the

control of teachers and is more likely to be limited to its position in RE, science and geography policy statements and a tenuous foothold in PSHE and Citizenship.

> *"Well it's obviously saying that environmental education as such is not as important as other things. The powers that be obviously don't consider it as important, not enough to make it statutory that's definite."*

> *"... I am concerned about this because they've* (policy- makers) *absorbed things like the environment and sustainability into this curriculum* (Citizenship) *and they would be faced with the problem of co-ordinating all this."*

Only one person articulated government control as brutally as in the following statement but there must be many who are experiencing the threats that are the direct result of falling rolls and the attendant reduced funding that leads to job losses. Once systems are in place where such situations arise, it would take courage to challenge the status quo so control can be ruthlessly exerted.

> *"Survival of schools, survival of teachers has been dictated by the exam requirements and accountability via league tables."*

Control can also be exerted through the statutory testing and league tables that have been promoted as indicators of successful schools rather than being acknowledged as indicators of one aspect of education. To challenge the value of such a simplistic judgement of a school rekindles the discourse of derision that dominated the 1980s and often draws scorn from the most powerful vested interests that now happen to be the controlling influences.

> *"From a geographer's point of view there are a lot of issues that come up on an ad hoc basis that we'd like to have some space to address and not be too frightened that if you used up that lesson, that would really affect down*

the line the assessment bit. I would dearly love for us to have a curriculum that was less driven by assessment, I do believe it is driven by assessment."

The following response suggests that assumptions are being made about accountability. It seems to be accepted that accountability can only be demonstrated via testing. Once again it seems that *intensification* has closed the space where professional reflection can take place and government control is accepted without question.

"... we were required to show evidence, you know, to measure it, how often does it happen? How many, where does it take place in the lessons? I mean, I think whatever you say about OFSTED and people like (the Chief Inspector of Schools), *I think we should be made more careful as to what goes on in schools."*

If the assumptions illustrated here are typical, then there seems to be widespread acceptance by teachers that control over most aspects of education is located beyond their reach. Add to that the *intensification* that has overwhelmed them and it would not be surprising if they assume that they exercise no control at all. The consequences are twofold. Firstly, powerful voices dictate curriculum content (privileged knowledge) and, increasingly, pedagogic practice (didactic teaching). Secondly, and more importantly for environmental education, those aspects of the curriculum that are not prescribed in detail and valued by testing become marginalised. This could be seen as control by default and would suit the restorationist agenda of the New Right. Indeed, control by default is an effective means of ensuring that a socially critical curriculum cannot be developed. The outcome for environmental education is that the 'education *for* the environment' strand will be neglected but government commitments to environmental education can be claimed to be fulfilled in the 'education *about* and *in* the environment' strands that can be found in the science and geography statements.

5.2 Change as a central category.

All of what has been said about teachers' roles, about confidence in their ability and about the degree to which they feel they have control of aspects of their working life, must be set in the context of both an intrinsic and constant change process and also the perceived change event signalled by the 1980s debate that culminated in the Education Reform Act 1988. The exclusion of teachers from the design of the National Curriculum followed by what had been promoted as fundamental changes in both curriculum content and modes of delivery and assessment inevitably created amongst teachers a perception of impending radical change. The introduction of the ERA is a vivid memory for many teachers. Its consequences continue to dominate teachers' professional lives and are likely to do so in future. Indeed, Fullan (1991) claims:

> *"We can take it as given that there will always be pressures for educational change in pluralistic societies. These pressures increase as society becomes more complex"* (p. 17).

This increasing complexity is nowhere more evident than when considering how environmental education can contribute to constructing sustainable societies. If education is to make a significant contribution to the evolution of sustainable societies, Sterling (1996) claims:

> *"... sufficient attention must be given to education as the* subject of change *itself. A society faced with a radical imperative to achieve a socially, economically and ecologically sustainable basis within a historically short time needs to reappraise most aspects of its organisation; education – as the main means of social reproduction – has to be at the centre of this task, both as subject and agent"* (p. 18).

Responses to change seem to dominate the categories that emerged from the teachers in this study so I suggest that the subjective realities of educational change form the *central category* that *has the ability to pull the other categories together to form an explanatory whole* (Strauss & Corbin, 1988, p. 146). These responses to change will either reinforce the dominant didactic, technocratic teacher role or will generate critical reflection about that role. They will enhance or diminish teachers' confidence in their ability to fulfil the expectations embedded in that role. They will also empower or disempower teachers.

5.2.1 The subjective realities of educational change.

There are many questions that can be asked about educational change but this section will consider those that have most immediate relevance for teachers. The most obvious is "What is change?" There is no easy answer to this question. Innovation and change can take place at every level in education and changes at one level will have varying degrees of effect on other levels. Innovation could be limited to a change in classroom practice that is entirely compatible with the dominant education paradigm or it could possibly seek to transform the dominant paradigm. What is indisputable is that innovation is not change unless something different begins to take place in practice. Fullan (1991) suggests that, even at the simplest level of considering change in classroom practice, innovation is multidimensional and consists of at least three components.

> *"(1) the possible use of new or revised* materials *(direct instructional resources such as curriculum materials or technologies, (2) the possible use of new* teaching approaches *(i.e., new teaching strategies or activities), and (3) the possible* alteration *of beliefs (e.g., pedagogical assumptions and theories underlying particular new policies or programs)"* (p. 37).

He contends that all three components must change if innovations are to successfully achieve educational goals. However, change at this level alone is unlikely to make a significant contribution to the development of environmental

education that will address the imperatives of social, economic and ecological transformation that have been acknowledged to be critical to sustainable living. The strand of 'education *for* the environment' will remain untouched and our children will continue to be educated for a world that no longer exists and indeed, could not be sustained. Sterling (1996) points out that education for sustainability:

> *"... is not an agreed set of ideas educators can tack onto existing thinking and practice to allow them to say 'we are doing sustainability'. At simple levels of implementation, there may be elements of such overlay, but it requires fundamental reorienting of much present thinking, and we are still in the early stages of elaborating what that means* (p. 19).

He believes that for environmental education, the challenge is to work towards:

> *"... physical and social systems and arrangements where costs and benefits are more equitably shared; where it is evident that individual and group interest converges with the wider collective and ecological interest through internalization of these costs and benefits; where positive synergies, or 'win-win' situations are created where more is done with less; where resource flows are cyclical rather than linear; and where citizens can gain more control over their lives and living environments"* (p. 31).

He acknowledges the differing and contesting interpretations that underpin environmental education but concludes that, if it is to develop in its richest form,

> *"... we have to face other difficult issues relating to the nature of change in education and the relation between social and educational change* (p.19).

The paradox is that there is an urgent need to move towards sustainable living in a postmodern world that is becoming increasingly complex and uncertain. So,

a key question is, "Is education changing in any way that supports a deeper response to sustainability?" Clearly there have been many changes in education since the 1980s but the evidence from this study is that they have not taken place at the level of concepts and role behaviour. Indeed, one teacher dismissed the need to *reinvent everything* and assumed that 130 years worth of Maths teaching must have resolved any problems. The overwhelming evidence is that teachers are firmly locked into the role of *experts in knowledge* and the ERA has reinforced this role.

When Fullan (1991) considered what makes change work for teachers, he began by pointing out that they are routinely overloaded. He reviews the current goals of education and concludes that *"...we want it all"*. He continues by suggesting that education asks a lot of teachers but gives *"... back little in the time needed for planning, constructive discussion, thinking, and just plain rewards and time for composure* (p. 119). Many of the comments in this study confirm these reservations. For example, the lack of time for planning, discussion and thinking lead to the often-expressed need for clear statements of curriculum content and the absence of the reward of eco-school status contributed to the limited impact of the environmental education pilot project. Real change in any endeavour makes enormous demands on individuals and, where choice exists, there would be an understandable reluctance for individuals in any circumstances to commit to making that effort unless they can be convinced that its objectives are desirable or that there will be a reward for their effort. For real change to work for individual teachers requires that they at least understand the direction and goals of the change and also that ultimately there is a positive experience embedded in the outcome. What many of the teachers here said indicates that they have accepted the goals of improving standards in the guise of improving test results because they had no choice. However, there were expressions of doubts about the validity of such educational goals and also expressions of regret about having to abandon what were considered to have been desirable innovations developed in-house. Where outcomes are concerned, there can be little positive

about an experience where improved test scores are routinely derided as being the result of a degradation of the standards of the tests. It seems that this is one change that is driven by imposition and not supported by motivation. It is also a change that contributes to the constraining of environmental education provision and one teacher commented that, if environmental education is to be treated seriously, it needs to be tested in some way.

For change to work at school level, Fullan (1991, p. 73) reports that research on organisational change shows that it is a matter of both *"motivating from without and orchestrating from within"*. He considers that the support offered from without can determine whether an initiative succeeds or fails and observes that this is *"...especially true of multi-level, complex system-oriented innovations where what is being changed is the organisational culture itself."* If the most profound and transformative aspects of environmental education that are referred to in some policy statements were intended to generate real change, then appropriate external support needed to be readily accessible. Such support cannot be found in policy statements and it is clear from what teachers are saying that very few are even looking for support elsewhere. The intensification of their task has effectively excluded the space where they might do so and, within the dominant paradigm, there are no clear rewards for doing so. There seems to be little *motivating from without or orchestrating from within* taking place.

One of the dilemmas of the restructuring of education that has been taking place is that the endeavour to standardise aspects of provision can result in conflicting possibilities for environmental education. It might bring into focus the objectives (or constrain them according to your perspective) or it might have created the possibility of change. At Key Stage 4 of the 1999 Citizenship curriculum statement, one of the attainment targets states that pupils should be taught about refers to:

> *" the wider issues and challenges of global interdependence and responsibility, including sustainable development and Local Agenda 21."*

This is just one of the 10 attainment targets described in the document. For teachers with the time and motivation to explore the document further, they can find the statement that during Key Stages 3 & 4 Citizenship can promote *other aspects of the curriculum* including:

> *"education for sustainable development, through developing pupils' skills in, and commitment to, effective participation in the democratic and other decision-making processes that affect the quality, structure and health of environments and society and exploring values that determine people's actions within society, the economy and the environment"* (p. 8).

The introduction of a statutory Citizenship curriculum statement is undoubtedly an innovation although its emphasis on knowledge and skills contributes little to systemic change. For now, we will leave aside the debate about whether the attainment targets are framed appropriately and will consider them as they exist from the perspective of teachers who are required to implement them. Key Stages 3 & 4 account for around four years of a pupil's school life. If the attainment targets become embedded throughout the whole curriculum and become the core ethos of the school, a degree of systemic change will have occurred. If they are implemented as discrete elements in the curriculum, then simple calculation shows how little time will be spent on each one, so there will need to be rigorous planning and coordination to ensure that the time is used well. In the schools in this study, even where coordination of environmental education had been nominally assigned, in practice there was no evidence of effective coordination taking place. The imminent (at the time of data collection for this study) introduction of the Citizenship curriculum was receiving no explicit attention. A follow-up contact made with a middle manager in one of the schools revealed that, although she was aware of the introduction of Citizenship, she was

unclear about how it was being addressed. The only clear evidence was of some environmental education provision within statements for Geography, Science and RE. In short, there was no evidence of any provision beyond the education *about* and *in* the environment strands and there was little evidence of education *in* the environment. The potential to begin a process of systemic change that was embedded in the attempt to introduce environmental education as a cross-curricular theme was neither recognised nor realised and, arguably, was probably not intended to be so. The transformative potential is not compatible with the restorationist educational agenda of the New Right so this was a change that did not have appropriate support and therefore was destined to be avoided by teachers if possible. It should not be forgotten either that this is likely to have been perceived to be a single change to the curriculum that accompanied multiple innovations that challenged both the objective realities of the school and the subjective realities of teachers. For those teachers who experienced the impact of the 1988 ERA, experience and commitment alone were not sufficient to compensate for either the conflict with their subjective realities or for the deficiencies of the support systems for the innovations being introduced.

Fullan (1991) described the subjective reality of individual teachers as one of limited development of technical culture and Ball (2000) summarised it as *intensification*.

> *"Teachers are uncertain about how to influence students, especially about non-cognitive goals, and even about whether they are having an influence;... teaching decisions are often made on pragmatic trial-and-error grounds with little chance for reflection and thinking through the rationale; ... they must get through the daily grind; the rewards are having a few good days, covering the curriculum, getting a lesson across, having an impact on one or two individual students (success stories); they constantly feel the critical shortage of time"* (Fullan, 1991, p. 33).

Fullan continues by acknowledging that the concept of objective reality is problematical since it might be no more than an aggregate of subjective realities. However, he points out that some change, although it may be the outcome of the way the subjective realities of individuals and groups interact, will produce social phenomena that exist independently of those individuals and groups. The concepts of subjective and objective realities and their relationship with change and innovation are relevant for this study for two principle reasons. Firstly, the study sought to reveal teacher beliefs and how they might influence environmental education provision. The ways that teachers cope with the subjective realities of their working life are likely to be intimately linked with the beliefs they hold about their own teacher identity, about the pupils, about the curriculum and about the non-negotiable structures of education. Secondly, objective realities, whatever their origin, influence or even create many of teachers' subjective realities and must be accommodated somehow. Since the 1988 Education Reform Act, objective realities have been challenged in pursuit of reform of education and there is little sign that the change process is diminishing in any way. Ball (1994) identifies this as a change towards a restorationist curriculum that is taking place without there having been a wide-ranging debate about what schools should be doing. He claims that:

> *"This is an attempt to remove education from its contemporary context; to create instead a regressive fantasy education, the school as historical theme park, where past styles are 'referents' for the methods of the new teacher"* (p. 45).

He continues by suggesting that this results in:

> *"...a curriculum that eschews relevance and the present, concentrating on 'the heritage' and 'the canon', based on 'temporal disengagement'; a curriculum suspicious of the popular and the immediate, made up of*

> *echoes of past voices, the voices of a cultural and political elite...- a curriculum of the dead"* (p. 46).

So, environmental education is being constructed within this *curriculum of the dead* and the dominant technocentric, reductionist paradigm rather than in an ecocentric, socially reconstructive paradigm. The contrast between the concepts of curriculum implicit in each of these paradigms is drawn by Apple (2000) when he says:

> *"... do not think of curriculum as a 'thing', as a syllabus or a course of study. Instead think of it as a symbolic, material and human environment that is ongoingly reconstructed. This process of design involves not only the technical, but the aesthetic, ethical and political if it is to be fully responsive at both the social and personal levels"* (p. 138).

The *curriculum of the dead* has much in common with *curriculum as a 'thing'* and neither is fertile ground for the development of socially reconstructive aspects of environmental education. Apple continues by pointing to the common solution of *'curriculum on a cart'* (p. 134) to compensate for the lack of time in schools for curriculum planning. *'Curriculum on a cart'* provides teachers with pre-prepared materials for use in lessons. In the short term, this has its advantages but in the long term it merely reinforces the problems for which it was seen to be a solution. It does not alleviate the problems of time and expertise. This will alienate teachers from curriculum development; they will be less likely to understand any changes taking place and they are less likely to feel rewarded for their part in the process.

At this point it would be easy to assume that innovations fail largely because teachers resist change of any kind. That assumption would be to dismiss the many hours of time that teachers spend attempting to effectively implement changes. If the outcome is that little change takes place, then either the planned

change was intended to be superficial or other factors have intervened. Fullan (1991, p. 35) described two important forms of non-change as *false clarity* and *painful unclarity.* False clarity is a feature of innovations that are often imperfectly conceived and then subsequently only partially implemented. They are often characterised by abstract goals that leave teachers to operationalise them. The resulting confusion, frustration and anxiety often lead to the abandonment of the effort. Painful unclarity arises when poorly described innovations are introduced into a system that does not or cannot support the meaning of the change. Change must also take into account that, for classroom teachers, the most important of their subjective realities will include events in their classroom and innovations that ignore those are less likely to result in real change. Fullan (1991) suggests that, although subjective realities should not define change, they are *"...powerful constraints to change or protections against undesirable or thoughtless change (depending on your viewpoint and the particular change). Ultimately the transformation of subjective realities is the essence of change"* (p. 36).

When the introduction of environmental education and Citizenship to the curriculum are considered in the context of innovation and change, the picture is one of limited possibility. Those aspects that can be defined with some clarity and located within traditional subject areas such as geography, science and RE can be easily assimilated into the subjective realities that are deeply embedded for most teachers. They are compatible with the concepts of a Balkanised curriculum and the teacher as an expert-in-knowledge. The socially transformative aspects are victims of either *false clarity* or *painful unclarity.* For those who designed the innovations, they are likely to claim that it is *false clarity* and that the abstract goals were necessary to allow schools and teachers a degree of flexibility in implementation. For many who critically reflect on both the education and environmental education discourses, they will claim that it is *painful unclarity* and some would believe that the New Right intention was to create painful unclarity so that there would be no possibility of a change towards social transformation.

What emerged from this study is that the subjective realities of teachers largely determined the outcomes for environmental education. The apparent restructuring of education by the ERA reinforced subject boundaries, knowledge attainment and didacticism and did nothing to challenge the assumptions of individual teachers. Much of what was said in these conversations demonstrated that. Where *clarity* exists in curriculum statements there has been implementation although this study has not explored how effective that has been. *False clarity* and *painful unclarity* are more evident by the absence of any clear statements. It became increasingly clear that, for many of the teachers in this study, environmental education was not a subjective reality. Although they were aware of its existence, it played no part in their practice and they had therefore felt no need to engage with its meaning. Neither the objective realities of the school nor the policy makers had impacted on their subjective reality. If, as Fullan (1991) suggested, transformation of subjective realities is the essence of change, then it seems likely that the introduction of an environmental education curriculum has generated little fundamental change. What seems to have happened is that the location of some aspects of environmental education that have previously been *ad hoc* knowledge and skills strands have now been formalised and located in traditional subject areas. There was little in these conversations to suggest that more profound aspects have any foothold.

Chapter 6: Findings and implications

An important outcome of this study is that it gives an unconstrained voice to teachers insofar as it is possible to do so. Throughout my 25 years as a practising teacher I cannot remember any occasion when I was asked to articulate my thoughts about any aspect of education in this way unless I chose to talk to my peers in the staff-room. So the core of this study is not theory that can be accused of being unconnected to practice. It is not a managerial perspective on what ought to be. It is not an evaluation of policy interpretation and implementation. It is, above all, a reflection of the realities of teachers' working lives from their own perspective, of their subjective realities. My task was to present and interpret that as accurately as possible; to explore the implications of what they were saying for environmental education provision; to illuminate theoretical perspectives with the light of what teachers say as opposed to explaining what teachers mean in the light of theory. Finally it was to search for a way forward in the task of enhancing environmental education.

The second important outcome is that of revealing the paradoxes embedded in our expectations of teachers when we ask them to implement environmental education in its deepest, transformative form within a restorationist curriculum. Are we asking teachers to do the impossible? It is clear that environmental education is an evolving curriculum with much that is contested. So what is being attempted is the co-ordination of curriculum which is evolving and unclear with a model of education that, in theory at least, has been structured in ways that cannot readily accommodate the socially reconstructive aspects of environmental education. Teachers are the individuals who are being expected to reconcile the differences, to close the gap between rhetoric and reality. Perhaps the best way forward at present is to aim to achieve the possible in the prevailing climate.

With that in mind, what can be learned from what teachers are saying and how can it be used to promote further development of environmental education that can be realistically realised?

6.1 Where are we now?

As the coding of the interview texts evolved, it became clear that the categories that have the greatest influence on teachers' engagement with environmental education provision are those that reflect their assumptions about the orientation of education and their role in realising the outcomes embedded within that. It has to be recognised that education cannot be uncoupled from dominant cultural, economic and political contexts where so much of the educational debate of the last 20 years or more has taken place within the market philosophy and managerial culture that is strongly embraced by the New Right. Sterling (1996) sees this as being the response to postmodernity and disorganised capitalism and adds that it reaffirms and emphasises subjects, knowledge attainment and didactic methodology. He goes on to say:

> *"the restructuring of education to conform to market ideas that echo the economic restructuring of the global economy has made this instrumentalist value more overt in recent years, and has suppressed the intrinsic educational values many progressive and liberal educators have upheld for years"* (p. 27).

This raises the question of whether education can realistically be expected to generate the radical social change that is implicit in deep environmental education theorising. Sterling admits that it *"...may be optimistic to expect education to engage with and contribute towards resolving the modern crisis when mainstream culture and values, of which education is both parent and child, largely make an inadequate response"* (p. 21). Indeed, Palmer (1998) points out:

> *"Research shows that the influence of formal 'quality' environmental education is not as successful as it could be or ought to be for two reasons: firstly, the logistical problems of its widespread implementation ensure that there is not sufficient amount of it, and secondly, even when well-designed and seemingly appropriate programmes of environmental education do exist, it would appear that other influences on people's lives are far more significant in the development of their environmental understanding, awareness, concern and action – and formal programmes take no account of these"* (p. 268).

There is no reason to suppose that the greater significance of *other influences* is any less for teachers than it is for their pupils. It is these *other influences* that are most likely to be the architects of the assumptions held by teachers. What is clear from this study is that environmental education conceptualising is in its infancy for most teachers. Some located it within an issues-based agenda (*"...there are various little exercises on causes and effects, causes and consequences of pollution...we look at smoking as a pollution issue...*); some articulated a conservation ethic (*"Looking after the environment..."*) and a few referred briefly to a values agenda (*We obviously have to transmit, develop, nurture skills in what they are doing in order to study the environment. We also have to challenge their values"*). For some it was seen to be defined as activities in the environment (*"I believe it should be outside and it should be part of some sort of outdoor education experience."*) However, for most there was either explicit or implicit evidence of uncertainty.

So, it appears that significant *other influences* have contributed little to clarifying teachers' thinking about environmental education and we now have to consider the influence of the subjective realities of their professional life. As has already been discussed, these are situated in a turbulent world of rapid educational change where other priorities have been imposed and externally generated supporting structures for environmental education have been poorly developed.

Hence, for most teachers, there is neither personal clarity nor external expectation to motivate them to invest time and effort in developing environmental education provision beyond that which is clearly prescribed in policy statements. In addition, the reinforcement of subjects, knowledge attainment and didactic methodology that is associated with the ERA accompanied by the *intensification* described by Ball (2000, p. 119) effectively made inaccessible the space where *"...marginal men and women peer critically but not dismissively into the assumptions and traditions of different fields and make creative connections that often elude their colleagues who are too firmly rooted in particular traditions themselves"* (Hargreaves, 1994b, p. 8).

It seems that teachers' environmental education conceptualising is in its infancy and also that there is nothing significant in ongoing education reform to create opportunities for further development. Teachers' subjective realities are locked into the objective realities created by the New Right education agenda. In addition, as Sparkes (1991) pointed out:

"Our culture structures the world we perceive and the way we think; for teachers it structures how they think about children, the nature of learning, the appropriate forms of teaching, and school life in general. Translating this view into the context of teaching and learning in schools, it may well be that teachers come to value ends for which their cultural equipment is well suited. Therefore, culture's causal significance would not be in defining the ends of action, but rather has its effect in providing the cultural components that are used to construct strategies in the classroom and school" (p.6).

In writing this Sparkes highlights the likelihood that teachers' cultural inheritance is more likely to influence the construction of their role in relation to managing teaching issues than to influence fundamental aspects of policy design. It becomes inevitable that teachers perceive their role to be that of expert-in-

knowledge since that was likely to be their experience as pupils in school and it is now being reinforced by the New Right educational agenda. It is also inevitable that they define their role within the classroom and school environment and not beyond those confines. Teachers, and other education professionals, who believed it was necessary to construct a broader vision in the 1960s, have subsequently seen their efforts derided and reversed.

Many were 'beaten into submission' by a discourse of derision that paved the way for the ERA. This New Right discourse was embraced by the media to cast doubt on the motives behind any contribution to the debate made by practitioners, or what was referred to in the discourse as the education establishment, about education reform. The implication was that the underlying causes for what was claimed to be failure in the education system lay firmly and even exclusively in schools. The debate about this perceived failure carefully avoided questions about whether there actually was failure or how success might be defined. Teachers and their failings were perceived to be the root cause of the problems in schools, especially for what were claimed to be falling standards. If they were believed to be the architects of failure, then their contribution to the debate about solving the problems could carry little weight and therefore could be ignored. For the New Right that was seeking to rapidly introduce a restorationist curriculum in schools, this was a desirable outcome.

The effect was to rapidly disempower teachers throughout the process and they had diminishing influence on curriculum content, on aspects of curriculum delivery and on associated assessment procedures. The ERA was followed by several years of rapid, and indeed continuing, change imposed on schools from external sources and often it was of such intensity that teachers were sometimes struggling to implement policy at the same rate as it was being changed. Some policy initiatives were introduced in haste and even confusion, with teachers lacking resources to adequately introduce them.

If we then turn to consider the subjective reality of reward or gain for teachers, further constraints on the development of environmental education are revealed. Teaching is an endeavour where success is difficult to define. Even at its most superficial level of test scores, there would be debate about whether a GCSE A* grade for an able pupil is more significant than a G grade for a pupil with serious learning difficulties. The ongoing controversy surrounding the publication of raw test scores in school league tables is evidence that there are those who believe the A* is necessarily a statement of quality. So teachers are in a position where their success is not easy to measure, to define, to describe or even to recognise in some cases. Success can sometimes become evident many years after pupils have left school. In such an environment it is not surprising that teachers look inward to construct their role. But of course this looking inward does not imply no external influences on that inner self. What teachers have experienced has had a formative influence on the inner self.

It was inevitable that the scale of such change drained teacher efforts. What is regrettable is that teacher confidence was also drained to some degree. Many of the teachers in this study indicated in some way that they are now either resigned or conditioned to expect that external forces will dictate the shape of their working life to a great degree and that they have little if any control or influence. "*I haven't been guided down that track, but if someone said to me I think you should make a point out of the environmental issue and make the children aware of it, I'd do that but I haven't thought about it*" and " *If someone makes up their mind what they want me to do, I'll do it.*" This acceptance of external control can be a defence mechanism. Alternatively it can be the simplest route to take through a career where expectations and demands are changing at such a rate. The change may be contrary to what the individual teacher believed education should be, but acceptance of the change may be a tacit admission that they no longer have the opportunity or stamina to fight for what they believe. Whatever the case, with no ownership of developments in their craft, teachers are deprived of the opportunities to develop and sustain confidence in their ability to

intellectually engage in designing and constructing education in a complex world. One response is to opt out of the policy-making process and retreat to policy-implementation with expectations that increasing areas of the teaching role will be beyond the locus of control of practitioners. There is evidence in this study that a considerable number of teachers have redefined their role in such a way.

For recently qualified teachers, many will themselves have experienced the new model of education with a curriculum that by implication enhances selected curriculum areas and values them more highly than others. They will also have experienced the emphasis on standards and the assumptions and expectation that standards are measured by examinations. Their training will have taken place within what Aspland & Brown (1993) call the ascendant 'training' model which, amongst other disadvantages, does not "... *respond to the need for adaptable and flexible professional learning*" (p. 21). They continue, *"But of equal concern is that this model of professional learning arguably holds the seeds for an increase in demoralisation, deskilling and dependency amongst many teachers"* (p. 21). It is likely that recently qualified teachers will need to have been practitioners for a number of years before they reach the stage where they question the tenets underpinning the craft they have been struggling to master. My own experience was that the early years of my career were overwhelmingly concerned with mastering skills and it was many years before I began to question the political and philosophical foundations of what I was expected to do.

The overall effect is to minimise the potential for teachers to develop the creative, imaginative and serendipitous aspects of teaching and they have been forced into a position where circumstances dictate that they are closer to being technicians who have little opportunity to do more than deliver a closely prescribed curriculum. The impact on environmental education of this narrowing of the teacher role is considerable. Environmental education is an aspect of the curriculum where neither content nor curriculum location have been carefully prescribed or even theoretically defined. As such its success depends to a large

degree on teacher confidence, creativity and commitment. The space in teachers' working lives for being creative has diminished and their commitment to more than what is prescribed has been eroded.

When the issue of environmental education is explored it becomes clear that it is considered to be an underlying theme that belongs in the school curriculum, although there was one individual who expressed reservations about that and suggested that perhaps television is a better resource. Beyond that there is considerable variation in beliefs about what the content of environmental education entitlement might be and where it should be located in the broader school curriculum. Some teachers saw it as part of geography and science, which is where current policy largely locates it. Others acknowledged its place in PSHE and very few acknowledged the Citizenship curriculum.

6.2 Where do we want to go?

Perhaps the only answer to this question is to acknowledge what is failing to resolve the issues that are now dominating societies and to recognise that a new paradigm is needed. Education for sustainability may well be an emerging paradigm for educational thinking but it is proving difficult to define. In contrast with the education of modernity, it is broad, inclusive, participative, collaborative, critical, integrative, ethical and essentially concerned with the quality of interrelationships.

Sterling (1996) claims that a critique of modern education might point to the following:

- Education is not merely about what happens in schools and colleges.
- Fragmentation of knowledge into subjects with their associated defences fails to make interconnections.

- Decontextualised and abstract knowledge – *valuing the map (abstract knowledge) far more than the territory (particularly local, global and future contexts) to which it often bears little relation* is inappropriate for modern needs.
- The dominance of instrumental rationality as the only valid way of knowing, and the devaluation of personal and community knowledge impoverishes knowledge.
- There is a continuing promotion of the myth of economic and technical instrumental values nurtured in the guise of 'value-free' learning.
- Curriculum content and pedagogy are based on utilitarian and anthropocentric values.
- Didacticism and the 'empty vessel' view of the learner are fundamental to the dominant educational paradigm.
- The distinction between academic and vocational modes dominate selection.
- Environment, development and related issues remain marginalised.
- The hidden curriculum and community links are given scant regard.
- Education has no human scale.
- There is no acknowledgement of the institution as an entire system reflecting prevailing educational values (for example physical environment, purchasing policy and management styles). (paraphrased from p. 26)

He goes on to say that education for sustainability has to address several challenges including:

- *exploring and clarifying the meaning or meanings of sustainability*
- *providing a critique of education for unsustainability*
- *clarifying the philosophical roots and issues underpinning desirable change in educational theory and practice, and*
- *suggesting alternative pedagogic, curriculum and sustainable modes* (p 28).

He then compares education for modernity with education for postmodernity.

	Modernity	***Postmodernity***
Cultural		
<u>Epistomology</u>	*Knowledge as information*	*Knowledge as wisdom*

Thinking	*Reductionist, analytic, Instrumental rationalist Abstract, dualistic*	*Holistic, systemic including non-rational, contextual, personal*
Development	*Dependency*	*Autonomy*
Educational		
Educational Orientation	*Vocational, classical, positivist*	*Socially critical, transformative*
Education and Environment	*environmental management, add on to existing structures*	*EFS; change in change in education paradigm* (p 33)

Most of this is a tall order in the prevailing climate of a restorationist endeavour. This may be where we want to go with education but teachers are confined by subjective realities and the achieveable rather than the ideal. At present the question 'How can we move forward?' has more relevance for them than 'Where do we want to go?' The answer to the former question is a basis for something they can actually do whereas the answer to the latter question is more likely to generate confusion and frustration.

6.3 How can we move forward?

The answer to this question can be either at a radical level or at a practical level. At the radical level, there needs to be the paradigm shift in education that will liberate environmental education from the confines of technocratic and instrumental education into the domain of social reconstruction implicit in education *for* the environment. Fien (1993, p. 9) describes the following criteria for education *for* the environment:

- *To develop critical thinking and enable problem- solving*

- *To examine ideologies that underlie human-environment relationships*
- *To criticise conventional wisdom*
- *To explore material and ideological bases of conventional wisdom*
- *To analyse power relationships within a particular society*
- *To engage students in cultural criticism and reconstruction*
- *To foster political literacy*
- *To focus on real-world problems and participate in real issues*
- *To open students' minds to alternative world views*
- *To work and live cooperatively*
- *To realise that humans can act collectively and shape society*

A second reading of these will illustrate that they could apply equally to education for a complex post-modern world and will also indicate just how far removed many of these defining criteria are from the subjective realities of teachers' working lives. So we must consider what might be the practical way forward.

The first priority must be to develop highly motivated and environmentally educated teachers. It is clear from this study that many teachers are neither at present. To develop these skills and attributes will require both pre-service and in-service development programmes. Oulton & Scott (1998) argue for a continuing of external efforts to make the intellectual case for environmental education but also argue *"... for tutors within schools to continue, formally and informally to press the case internally, and to support this by carrying out persuasive research studies"* (p. 261). Whilst acknowledging the rationale underpinning this observation, it has to be pointed out that there are two major barriers to the carrying out of *persuasive research studies*. Firstly, the concept of research-engaged schools and teachers is poorly developed at present and the conditions for its further development are deteriorating in the climate of intensification within which teachers are working. Secondly, policy statements relating to aspects of environmental education are daunting in both their

generality and complexity so it is difficult to imagine where schools will find individuals with the requisite knowledge, skills, attributes and motivation.

The beginnings of a solution could be found if, at every stage of pre-service and in-service experience, individuals are expected to develop and use critical reflection as a core element of their teacher role. Some years ago there were possibilities to begin this process when teacher appraisal was first introduced. Appraisal systems could have been designed to facilitate critical reflection and to be developmental. Unfortunately they were designed to be used judgementally and, rightly or wrongly, were perceived to be tools to be used towards 'payment by results'. Appraisal systems had a bad press as far as teachers were concerned and they were greeted with scepticism, resentment and a considerable degree of anger. What is clear though is that the resources could be made available for the training to implement this initiative so, if environmental education is to be given the status inherent in policy rhetoric, there is no obvious reason why they could not also be made available for a redesigned initiative that has the intention of creating an ethos of critical reflection. Once ongoing critical reflection becomes a subjective reality for teachers, it is easier for research-engagement to become a subjective reality. Indeed, embedded critical reflection and research-engagement are merely positions on a continuum where the extension of critical reflection almost inevitably leads into research-engagement. This would clearly have benefits for all aspects of the curriculum but it would be particularly valuable for environmental education which is complex and evolving.

This cannot however be a 'quick fix' so we have to address a transition period. This will necessarily have to take place within the dominant paradigm and will need to address the issues that have emerged from teachers' subjective realities. Even this limited development is unlikely to be easy to achieve especially if it is perceived to be a change event that is inadequately supported. What follows has to assume that, either because of external pressure or personal motivation, a school management team is committed to developing environmental

education provision and is actively seeking ways to do that. There will need to be several stages of development. It is appropriate to caution that they should not be understood to be elements of a linear process but rather a cyclical process with a positive feedback loop.

The first stage will identify teachers with the motivation and some relevant expertise who are prepared to work in a small team to develop the initiative. Evidence from this study suggests that, even where co-ordinators were appointed, they were not motivated to develop environmental education. Once a team of motivated teachers is identified, they will need allocated time to work together as a team considering both the nature of environmental education and its pedagogical implications. This stage will be enhanced if it can be further resourced with a consultant who works within the school. The pilot project in Cumbria seemed to stall at least in part because it was disconnected from the subjective realities of teachers in the participating schools. If the team is to sustain its efforts, there will need to be a management commitment to fund appropriate environmental education and subject specific resources. This is likely to be a difficult stage for senior members of staff to manage. They clearly must confine the outcomes of the work of the team within what is possible and realistic but, at the same time, must demonstrate confidence in the team's ability to work creatively and effectively. Ownership of the initiative at this stage is more likely to result in favourable outcomes later. This has echoes of a culture of collegiality but Hargreaves (1993) sounded a cautionary note about contrived collegiality that is used merely as a form of control where "*...initiatives are administrative contrivances designed to get collegiality going in schools where little has existed before*" (p. 225). The assembled team must be confident that they are trusted to carry out their task within realistic parameters.

This first stage should evolve seamlessly into the second stage where the proposals from the team begin to be implemented. How this happens must depend on the understanding the team has about how their school works (about

many of the subjective realities for their colleagues) and also on the incentives or constraints emanating from the senior management team. Embedded in this stage is a need for time to be made available for the sharing of experiences and planning for the future. At this stage, sensitive input and guidance from an 'external' expert who has developed strong links with the school should build confidence and foster critical reflection. The co-ordinator of the Cumbrian pilot project expressed a perception that the participating secondary school teachers were working in a professional environment that was different from that of the primary school teachers and what was relevant and appropriate for use in junior schools was not easily usable in secondary schools. Although she was intended to be an expert or consultant, she had not been able to take account of the subjective realities for secondary school teachers.

The next stage will be the extending of what has gone before with the aim of locating aspects of environmental education in a planned way into all subject areas. There should be continuing reviewing and reflecting on developments with frequent opportunities to feed back to the co-ordinating team information about experiences so that a process of refinement or reorientation can take place. The continuing involvement of a consultant would be desirable in the short term but, once a body of expertise and confidence builds in the school, the role of the expert begins to be taken on within the school.

In some ways this might seem to be merely another version of co-ordinating a cross-curricular theme but there are some significant differences if the cycle evolves effectively. The involvement of an 'expert' who can understand the subjective realities of teachers in a particular school and who initially works with a small team of motivated individuals is more likely to result in an appropriate plan that can be 'owned' by the staff. This process is more likely to have an outcome where environmental education begins to permeate all aspects of school life, whereas co-ordinating a cross-curricular theme tended to result in the phenomenon of 'locating a bit here and a bit there' or, as evident from this study,

was likely to result in little more than nominating an unwilling individual who had no motivation to fulfil the responsibility. Above all, it has the potential to generate an ethos of critical reflection that is a firm basis for a reorientation of those beliefs that confine teachers to the expert-in-knowledge role that constrains the development of environmental education. In other words it could be the beginning of a transformative process. In short, it could promote a collaborative learning culture amongst teachers that might eventually have an impact on the didacticism that seems to have a stranglehold on education.

Moore (2005), when discussing barriers and pathways to sustainability education, wrote:

> *"The focus of teaching and learning in a collaborative model shifts from information transfer (transmission and reception) or discussion (co-operative model) towards a model in which all participants are involved in a shared process of constructing knowledge".* (p. 553)

Teachers should also be engaged in a learning process and Moore's observation is just as relevant for them. Building environmental education provision according to the stages outlined above will engage them in collaborative learning and knowledge construction and, if this model becomes part of their subjective reality, it is more likely that they will adopt its use with pupils.

Much of what has been written in this work reinforces the following from Palmer (1998):

> *"Indeed, it is extremely difficult to match up the complexities of environmental education with the intricacies and demands of formal education curricula and with the principles and processes of learning – at any stage in education, be it early years of schooling or within teacher education programmes. So, what are the priorities for attempting to solve*

these problems? For some, as we have seen, the answer lies in major paradigm shifts: substantial changes in thinking and practice that may apply not solely to environmental education, but perhaps to education itself. Alternatively, solutions may be approached by the adoption of less radical changes in practice, for example, by taking account of and building upon prior knowledge and formative experiences; by setting locally appropriate goals; and, most importantly, by planning coverage of all the core components of environmental teaching and learning" (p. 268).

Bonnett (1997) is more specific in his critique of Curriculum Guidance 7 for the environmental education cross-curricular theme.

"*In sum, many of CG7's stated aspirations may sound well enough at first blush. But as it stands (and not withstanding an emphasis on activity of a certain kind in its appended case studies), the character of the knowledge assumed to be the most relevant to their achievement lends much of the content a spectatorial feel. In this context, extolling the environment as an object of curiosity and as in need of bring 'examined and interpreted from a variety of perspectives' (p. 3) is somehow trite, lacking a proper sense of the sheer 'indispensibility' of the environment and the way our relationship with it pervades every aspect of our being"* (p. 263).

For anyone who needs convincing that it is worth the investment of resources to address the issues embedded in the debate about environmental education, Bonnett (1997) continues by pointing out that they (the issues) "*...invite a profound reappraisal of conceptions of knowledge, human consciousness and what counts as an adequate relationship with the world, upon which any conception of education must be premised. There is philosophical work of the highest importance to be done here"* (p. 263).

Chapter 7: Critical reflection

One of the issues to emerge throughout the interviewing stage of this study was the temptation to question and probe in a more proactive way in order to more obviously focus on environmental education provision. Although all participants knew in advance that they would be having a conversation with me about environmental education, there were times when it would have been easy to think that what was being said was irrelevant in that context. However, the intention was to carry out a grounded theory study which meant that the conversations needed to allow participants the opportunity to freely articulate their thoughts and it was then my task to understand what was being said and how it might influence environmental education provision. Resisting the temptation to shape the conversations was not easy at first when I was beginning the process of interpreting what was being said, but its eventual benefits became evident with the realisation that much of what is said about education has relevance to environmental education.

What is contained in this work is inevitably expressed via my own voice as writer/researcher and there are potential problems associated with that. Apple (2000, p. 155), when describing the dynamics of a group seminar in a discussion about the politics of pedagogy, acknowledged that the story was told through his own voice. He asked, *"Who am I representing? Have I exploited the group for "academic" reasons?"* He also observed that, *"Whatever benefits accrue from the public display, the sale, of this commodity come to me."* These questions demand some answers from me, and indeed from others carrying out similar research.

- *"Who am I representing?"*

  This question itself is in one sense problematical in this research context since it could be understood as implying a clear separation between the researcher (myself) and the teachers who participated in the study. It became increasingly

clear as the work evolved that attempting to rigorously maintain a distance was not always useful. At times it was my own teaching experience that provided a key to understanding what teachers were saying. What is critical to the research process is that I made explicit aspects of my own discourse and that I somehow created a balance between that and the interpretation of the data. The work could not be otherwise than to some degree a collaborative endeavour although, ultimately, I have to accept responsibility for its final form. Throughout the writing phase of this work I have often used *participants* when referring to the teachers who took part. On reflection, perhaps *stakeholders* would have been more appropriate insofar as it seems to value the teacher input as highly as that of the researcher. Holliday (2002) considers that "... *writing is itself part of the process of qualitative investigation*" (p. 130). He continues:

> *"Therefore, the voice and person of the researcher as writer not only becomes a major ingredient of the written study, but has to be evident for the meaning to become clear"* (p. 131).

What is critical is that the researcher's voice has a recognisable identity that does not devalue or override the voices of the teachers. So, with the preceding remarks in mind, the intention has been to 'give teachers a voice'. By that I mean the voices of the myriad 'unheard' individuals who, in a complex and constantly changing professional world, are challenged daily to confidently make real a school curriculum. For too long their voices have been overwhelmed by the clamour of other more powerful and sometimes competing voices that have assumed for themselves a superior authority. That is not to say that teachers should be the sole arbiters or creators of an educational discourse but is to claim on their behalf that their experience and skills should be respected and engaged in every aspect of the construction of education for an increasingly uncertain and complex world. Environmental education is an example of the challenge facing education for the future. Indeed, some would say it is the only challenge for education for the future. It is clear from the literature as well as from this study

that, although it has been recognised for a number of years now that its development is critical, the reality is that it has a fragile and confused place in the curriculum. For environmental education to develop much beyond its current tenuous position, two things are needed. Firstly, there needs to be the political will to generate and support that development. Secondly, account must be taken of 'teachers' voices'. These, after all, are the people we will expect to realise that which is so difficult to define.

Arising from this is the question, *"Did I hear the meaning in what teachers were saying?"* I would contend that, insofar as it is possible to do so, I used my long experience as a teacher to deepen my understanding of the subjective realities of the teachers who spoke to me. I was an indweller at least to the extent that I was familiar with both the structural framework and the practical constraints within which teachers work takes place. At the same time, I was aware that both my own commitment to a critical, reforming mode of environmental education and also my experience of teaching in the high-status subject area of mathematics could easily have biased my interpretation of what was being said to me. This was one of the reasons for my early decision that categorising some responses as excuses was not justifiable. Indeed, as the project evolved, some of what emerged illuminated and challenged my assumptions. For example, I am now aware that I made unacknowledged assumptions about the difficulties encountered during my own experience of attempting to embed environmental education in the school ethos. I assumed then that the reluctance of others to engage with this idea was based entirely on an understandable reluctance to voluntarily increase workload. Having listened to the teachers in this study, I now believe that reluctance is more likely to be the screen for an underlying anxiety about meeting the expectation that teachers should be 'authorities in knowledge'.

- *"Have I exploited the group for "academic" reasons?"*

  Implicit in the use of *exploit* is the concept of selfishness so, to answer this question, I have to reflect on whether this work has or might have any benefit for

schools and teachers or whether it is no more than my own academic exercise. It was certainly intended to be more than merely an academic exercise. From my perspective, I justify the work on the basis of a personal commitment to developing environmental education in schools and on the hope that this work will add something new and influential to understanding factors that affect environmental education provision. For teachers who participated, there can be no realistic expectation that they will read this account. The potential benefits lie in their having had a rare opportunity to speak about and reflect on the part they play in curriculum design and delivery (in this case, environmental education), and also in any longer term impact on the support systems that might emerge if the growing body of research knowledge informs policy making. Hammersley (1997) suggested that the main functions of educational research are "... *to inform public debates about educational issues: to provide information for anyone concerned with those issues, not only teachers but also parents, governors, administrators, pressure groups, politicians and citizens generally*" (p. 154). If this study adds anything useful to that end, it will have re-engaged teachers to some degree in the policy process and will not have been exploitative. This challenges directly the claim that *"Whatever benefits accrue from the public display, the sale, of this commodity come to me."*

A charge of exploitation could be justified if the research clearly had no potential use for educational development. Estabrooks (2001, p. 283) described the following three models for the use of qualitative research:

- *instrumental research* where the research can be used directly to influence practice
- *conceptual research* that can influence thinking and decision-making about practice
- *symbolic research* that can validate practice.

The most likely use of this work is in the conceptual model. Bearing in mind the time pressures that are described in the data, it seems likely that the time teachers spent in conversation with me afforded a rare opportunity for them to reflect on environmental education and their role in its provision. That alone cannot change practice but it might at least add some depth to any subsequent decision-making process at school level. If the work becomes part of a larger body of evidence, it could contribute to a policy-making process. The data suggest that it is unlikely to have contributed much to the instrumental model. On the identifiable occasions when I was enlisted to make a contribution to a school's practice (for example with a draft inclusion for a record of achievement or provision of resource materials), it proved to be impossible to arrange subsequent meetings with practitioners to monitor developments. I could only assume that successfully developing their use was not a high priority. The opportunities for teachers and researcher to engage in collaborative working were almost non-existent. The nature of this project was such that it depended on the goodwill of individuals who were prepared to commit precious time to an activity that had no apparent relevance for their practice. The concept of research-engaged schools remains to be developed.

It was tempting to approach this work with the ideological fervour inherent in the attitudes of any individual with a strong commitment to reformation. This would have led the work into a complex web of theory that had no clear practical application. I have tried to balance the demands made by rich theorising with the need to give value to the subjective realities of the teachers who are expected to operationalise curriculum that is in its infancy. I have been mindful of the debilitating confusion that curriculum abstraction can generate by suggesting that teachers are given real ownership of the developing environmental education curriculum and that they should be supported in as many ways as possible.

Although I have drawn attention to a range of terminologies and to a number of suggested models for an environmental education curriculum, I have avoided

confining the discussion in this work to any specific versions. That was a deliberate decision for two reasons. Firstly, the debate about many aspects of environmental education is far from reaching a consensus and there is no preeminent detailed model. Secondly, teachers' theorising about environmental education is in its infancy and the range of academic theories still being hotly debated is likely to cause more confusion than enlightenment. The third stage that I suggest in section 6.3 as a process for developing environmental education in schools allows the flexibility to address shifting needs but supports the endeavour with an 'expert input'. The success of that model is dependent to a large extent on the intentions of those who have the power to support it but, as a starting point, it has more to recommend it than unsupported, abstract policy statements.

Chapter 8: Summary

The aim of this study was to critically analyse the factors influencing interpretation and implementation of the cross-curricular environmental education theme in secondary schools. As the study evolved, it became evident that many teachers were saying little about their environmental education practice for the simple reason that they did not feel that they played an active part in provision.

What emerged from this work reflects what Strauss and Corbin (1996) cautioned against, the temptation to disregard fresh, emerging ideas that may disrupt the process. So, although much of what was said seemed at first to be disconnected from environmental education, its relevance became increasingly clear. The 'open' nature of these conversations produced a wealth of situated data that a questionnaire survey about environmental education could not have revealed.

Their conversations centred on their role as teachers in the dominant rational, technological education paradigm. These conversations illustrated that they were firmly locked into an educational discourse where teachers are expected to be authorities-in-knowledge who deliver a prescribed curriculum of official knowledge using didactic methods. Most also assume or accept that the outcomes must be measurable in some positivist way. It became clear that there was no space for critical reflection about these assumptions and apparent education reform was reinforcing them. *Intensification* of their work effectively excludes reflection and *learned helplessness (deskilling)* has either constrained their professional development or, in some cases, has eroded their confidence.

The implication for environmental education provision is that, even for teachers who acknowledge its importance in a school curriculum, most have given little thought to what part they can play. The result is that provision is confined to

the prescribed elements of the science and geography curricula. There are opportunities in PSE and Citizenship but there is little evidence to suggest that these are being developed in ways that promote the most profound values and attitudes strands of environmental education. It should also be noted that geography, where there seems to be a greater possibility of engaging with socially reforming issues, is not compulsory at Key Stage 4 so many pupils will experience little of what is known as 'education *for* the environment' beyond the age of 13 or 14.

Although it was not the aim of this study to design strategies to address the weaknesses in environmental education provision, I have outlined a model in Section 6.2 that could be a starting point. It assumes that there is no realistic prospect that the dominant education paradigm will be imminently transformed. It acknowledges the *deskilling* of teachers that has accelerated since the ERA by suggesting an external expert input and other supporting structures. It requires a commitment to the development of environmental education from senior managers in schools both in terms of funding and in the use of professional development time. Above all it requires a commitment to developing an ethos of critical reflection in teachers. This might be considered to be the beginning of reskilling and professionalising teachers.

The benefits of such a model for developing environmental education could include that it became embedded in all areas of school life. Most importantly, it is the beginning of a process that could lead to a situation where the inherent complexities of education for a rapidly changing world can be met with professional confidence rather than being the cause of an anxious retreat to the safe territory of prescribed curriculum.

At the beginning of this work I believed that environmental education should be education. If we are not educating our children to live sustainably on this

planet, aren't we missing the point? At the end of the work, that belief has been reinforced.

It seems fitting to close this work with a philosophical perspective on why environmental education demands our attention. Zoja (1995) suggests the following:

> *"Civilization alone has toppled the hierarchy of the instincts and sent awry their principles of self-regulation. We have invented excess food and excess nausea as a way of attempting to appropriate the endless beatitude that rightfully belongs to the gods. Growth, which by now we believe to be life itself, is but one of its possible metaphors; and endless growth is nothing more than an ingenuous metaphor of immortality"* (p. 12).

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APPENDIX 1

Biographical notes on participants:

1. **ANGIE:** Supply teacher. Teacher of modern languages principally Spanish but as a supply has experience of covering many subjects. A long-term member of the Green Party whose husband stands for election in local politics as a member of the Green Party.

2. **BILL:** Head of Humanities. Geography specialist. School co-ordinator for LEA pilot environmental education project. Previously had established environmental activities in the school e.g. paper collection. Died unexpectedly during the period that this project was being carried out. His enthusiasm and commitment to the school and the project were enormous.

3. **BRIAN:** Head of RE but not of PSE.

4. **CATE:** Main-scale teacher with involvement in many aspects of the humanities curriculum – geography, PSHRE, PE, RE, history.

5. **CLIVE:** Main-scale teacher of PE, Science. Responsible for organising the Duke of Edinburgh award scheme in the school.

6. **DAVE:** Head of PSE. Teacher of science. His name was given as the point of contact for discussions about environmental education provision in the school. He was perplexed about why his name had been given, as he seemed to think he had no responsibility for environmental education provision. However he acknowledged that he was likely to become responsible for it if ever the school management focussed attention there. He took the opportunity to ask me for any

useful material I could supply and he undertook to keep in touch. I did provide some relevant materials but he made no further contact.

7. **DES:** Teacher of geography and some maths. Also a form tutor.

8. **DEREK:** Teacher of geography. Became acting head of humanities when Bill died. Unfortunately the consequent impact on the school meant that full participation in the remaining part of the LEA pilot project was difficult for them to achieve. Despite the stresses and tensions of the exceptional circumstances, he took over the task of arranging for me to have meetings with a number of staff in the school. He has strong commitment to ensuring that environmental activities in the school continue to have a strong presence.

9. **DON:** Head of science and one of the few individuals who articulated views about the political nature of curriculum content.

10. **DUNCAN:** Head teacher with some geography teaching. School had a BTCV governor.

11. **FRAN:** Head of art in a school located close to a coastal area with formally constructed conservation strategies including an education officer.

12. **GEORGE:** Head of English in a school where the head-teacher emphasised the pre-eminent expectations of good test performances.

13. **HARRIET:** Temporarily 2nd in geography. Experience of working with a modified Van Matre programme.

14. **IAN:** Head teacher with experience in History, pastoral, 6th form, City & Guilds, BTEC, vocational courses. School has good examinations record.

15. **JANET:** Head of PSE, RE, Senior teacher. Only woman in the senior management team of her school and articulated some difficulties inherent in that situation.

16. **JENNY:** Head of lower school, pastoral manager. Expected that government would eventually 'close' the flexible spaces where teachers can work.

17. **JO:** New and temporary appointment to teach geography and was unfamiliar with the school structure.

18. **JOHN:** Teacher of science and a middle manager who had distanced himself from curriculum decision-making.

19. **JOAN:** Head of sociology, some geography teaching and co-ordinator for PSHE. Her preferred teaching was A level Sociology but she was aware that that was vulnerable.

20. **JOSH:** Head of Business Studies in a school where major restructuring of responsibilities was underway. He was awaiting the outcomes so that he could find a route to promotion.

21. **LAURA:** Cumbria Development Education Coordinator with an advisory role for the environmental education pilot project.

22. **MEG:** Teacher of geography and PSE who had been newly assigned responsibility for environmental education but did not know how that would evolve.

23. **MEL:** Cumbria pilot project co-ordinator with experience in development education. She had taken on the responsibility at a late stage in the planning process.

24. **PAUL:** Head of RE who described himself as 'a little minion' and expected to have course material provided.

25. **PETER:** Claimed he was an environmental scientist who had to teach physics, chemistry, biology, geology *and all that.*

26. **ROB:** Teacher of geography, head of house, pastoral. Wanted opportunities for pupils to research topics but saw that increasingly as a luxury.

27. **SEAN:** Teacher of Science who had responsibility for co-ordination of environmental education thrust upon him and expressed that he had no intention of doing anything about it.

28. **TIM:** Teacher of PSE and RE who emphasised the human relationships aspect of curriculum content.

29. **WILL:** Claimed to be a teacher of science and a middle manager. Spent the whole conversation talking about the efforts to improve the school's reputation by adopting school uniform, improving test scores and improving behaviour.