

**ENVIRONMENTAL EDUCATION AND RESEARCH IN SOUTHERN AFRICA:
A LANDSCAPE OF SHIFTING PRIORITIES**

THESIS

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EURETA JANSE VAN RENSBURG

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ABSTRACT

Environmental Education and Research in Southern Africa: A Landscape of Shifting Priorities

What has come to be labelled as 'the environment crisis' has roots in the structures and orientations of modern societies. True to our modernist ways we call on, or offer, education and research, experts and science, to address our socio-ecological concerns.

This study set out to identify research priorities in environmental education from within the institutional setting of a university and within the context of environmental and political change in southern Africa and epistemological shifts in educational research traditions. The emergent research design allowed for a progressive clarification of theoretical vantage point: from an instrumental listing of priorities, through the participatory development of a critical and consensual framework for research, to a reflexive description of a landscape of shifting priorities.

I collected data over a 3-year period, in *inter alia* 38 semi-structured interviews, workshops with some 150 participants, focus group discussions, documents and conferences. Participants' professional contexts included environmental education, natural resource management, social and biophysical sciences, development, formal and non-formal education, funding agencies, academic and non-academic settings.

My engagement with the emerging discourses revealed patterns and inconsistencies in participants' views on research, environmental education, change and research priorities. I identified three orientations - Research for Management to Restore Order to Nature and Society, Research to Resolve Practitioners' and Communities' Problems, and Research for Radical Reconstruction - in the emerging landscape. These orientations were accompanied by change models and themes (discourses of difference and 'othering', instrumental views of education and research and accumulative knowledge, a conceptual theory-practice gap) which limited their potential for transformation towards sustainable living. They presented solutions cut from the same modernist cloth as the environment crisis. An emerging Reflexive perspective in and on environmental education research showed potential as a transitionary orientation outside modernist assumptions. I outline research priorities from this perspective. Reflexivity reveals the myths of expert-driven, instrumental and institutionalised research separated from environmental education and based upon rationalistic interpretations of science. It opens up possibilities for transformative knowledge emerging from 're-search' based versions of education as a process of, rather than a means to, social change.

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PREFACE

Quite apart from its quality or possible impact, a doctoral thesis presents a sizable chunk of the author's life. It is therefore very difficult to acknowledge only individuals among all those who contribute to the context from which this particular thesis has developed.

Central among them though would be the research participants and my students, past and present, who allowed me to draw on their work and experiences. Equally significant was the financial assistance of Murray & Roberts Holdings which, through WWF-SA, sponsored the Chair which has enabled me to do the research which is presented here as a Ph.D. thesis. Financial support from the Department of Environmental Affairs and Tourism through the *Human and Natural Resources in the Environment* (HNRE) Programme of the Human Sciences Research Council, and Rhodes University, allowed me to collect data throughout southern Africa.

I would also like to pay tribute to three special people in the local environmental education community. The first is my supervisor and colleague, Professor Pat Irwin, who had faith in me five years ago when I had barely started out in the 'field' of environmental education. The others are conversationists Rob O'Donoghue and Jim Taylor, who refrained from getting car sick as they read through my early grasps at the new 'field of study' and then persevered in revealing the implications of environmental education as respectively field of study and challenging social process. I have been inspired by their enthusiastic and insightful practice and honest encouragement.

Also inspirational was the work of two international educational theorists, Professor Thomas Popkewitz and Patti Lather. I am deeply indebted to Professors Berndine Nel and Ian Robottom for introducing the local environmental education community to their work. Popkewitz and Lather are not the only authors whose texts I have studied, but I have found their work exceptionally useful.

Many others were inspiring and supportive in various ways. Thank you to the administrative support staff at the Department of Education at Rhodes University; other colleagues and friends including Ursula, Sarah, Ally, Pumla, Linda, Rob Soutter, Alistair Robertson, Ian Robottom, Tom Popkewitz and Dinie Nel for meaningful discussions and vital feedback; and Sylvia, Jo F. and Jim C. for creating special spaces for me to work in. I appreciate your assistance, guidance and encouragement and am particularly grateful to those who accepted my somewhat pre-occupied mode-of-being. There is however no guarantee that anything will be different now!

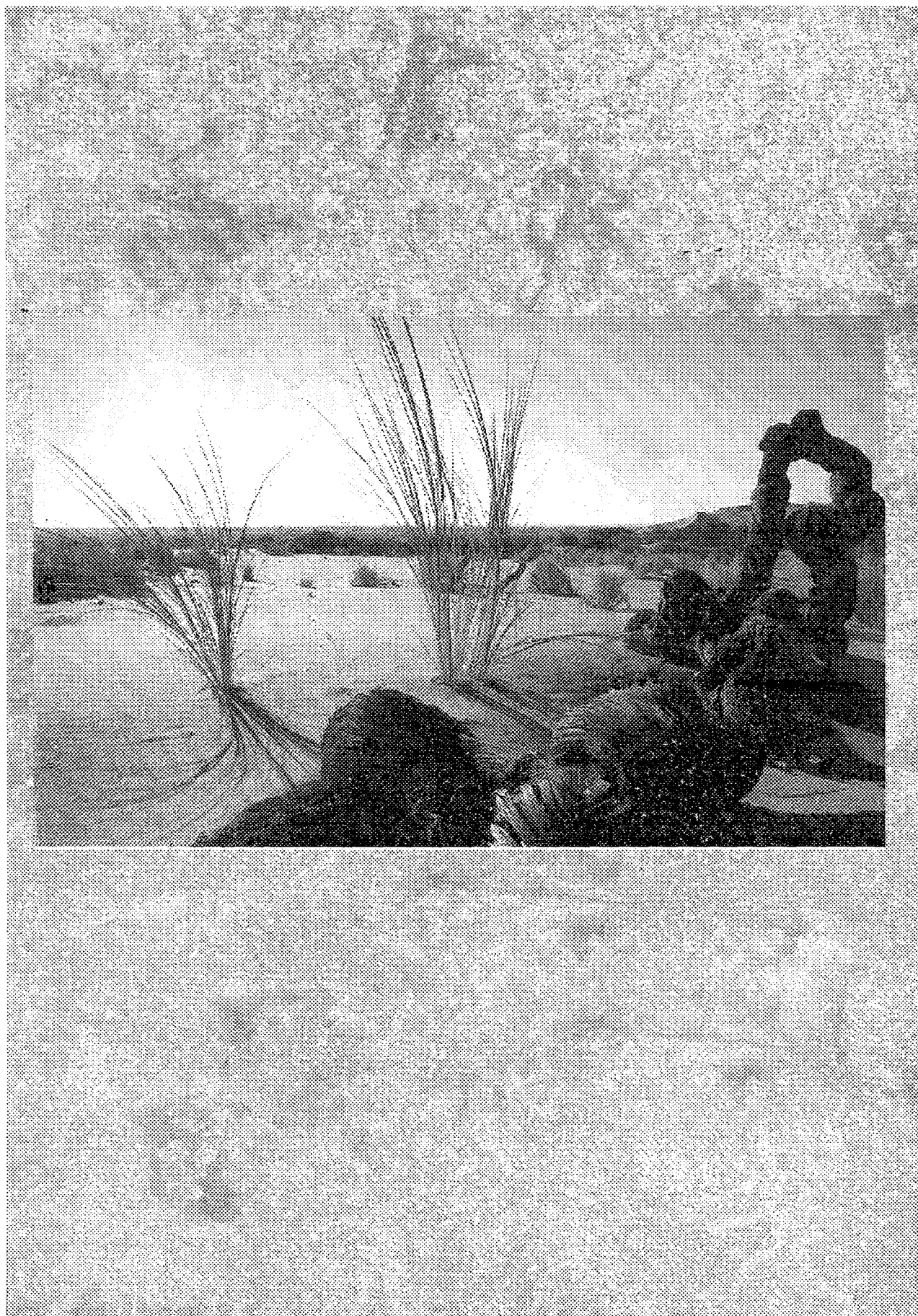
When I was a child, my father used to own the kind of car that was prone to frequent break-downs. He nonetheless took us on regular and sometimes very adventurous holidays. I have vivid memories of a trip to what was then South West Africa, of inching up a steep mountain pass late at night in a moody red Zephyr and wondering whether the tiny light we saw was the farmhouse we were aiming for, or a star ... and of those occasions when we would come to a complete stand-still in the mid-day heat, in the middle of nowhere ... On the back seat, hearing only cicadas and telephone wires and the hiss under the radiator cap, we would anxiously and simultaneously condemn my father and look

forward to the destination. And then, when we did cruise with some speed, there was my mother's cautioning voice to bring new trepidations!

Writing this thesis was the same kind of journey. I felt excited, impatient, very apprehensive ... My progress was an inch-by-inch affair and I often ground to a long halt and wondered whether I could continue. The car I had at my disposal - my own ability - appeared completely inadequate. Cautioning influences - what I understood of institutions and power! - made me wonder if I was driving too recklessly. Yet the landscape was so compelling ... the journey engaged me like a destiny ... I am glad something made me carry on.

And although my various journeys have now taken me far from home, and my parents have had little to do with this thesis in any other way, those childhood trips taught me about loving the land, the discoveries and the journey itself ... and, perhaps, to venture on when it seems much easier to stay put.

I wish them well.



CHAPTER ONE

INTRODUCTION

1.1 THE RESEARCH SETTING

The study emanated from the establishment in 1991 of the Murray & Roberts Chair of Environmental Education in the Department of Education at Rhodes University, South Africa. The primary function of the Chair is the development of theory in/and environmental education in southern Africa (Dept. of Education, Rhodes University 1990), particularly through research and post-graduate teaching to develop research capacity.

It thus seemed appropriate for the Chair to initiate an academic exploration of research in environmental education. Such a study was to have a southern African scope and to benefit researchers and research students from the region, including students in the Masters in Education (Environmental Education) programme at Rhodes University. The announcement of a study on 'research priorities in environmental education' was furthermore met with interest by a number of funders of environmental education projects, among them agencies which offered or agreed to sponsor the study (see *Preface*). This interest reflected a perceived need for guidance on the topic and it was envisaged that the study would be 'useful' in informing these parties' decisions about research projects to fund or undertake.

This 'applied' orientation to the study has been reconceptualised during the past three years, as follows: Based on the rationale for the Chair (Dept. of Education, Rhodes University 1990) the initial aim was to *identify research priorities* in environmental education in southern Africa. The study shifted, however (see 3.1, 3.2.4), through a phase aimed at the development of a *framework for research* in environmental education in southern Africa to the current *critically reflective description* of perspectives on research in/and environmental education¹ in the region. It developed a more theoretical orientation which has influenced both the style in which the thesis is presented (see 1.2) and the ground which it covers (1.3).

1.2 THE STYLE OF THE THESIS PRESENTATION

Some readers may find the style in which the thesis is presented unconventional. Insights developed during the study influenced the style of presentation to reflect (1) the complexity of the situations

¹ As will become apparent in the unfolding thesis, I support the view that environmental education and research are dimensions of a *unitary* process of change, hence the notion of *research in environmental education* (see 4.4.5, 6.2.7). Most research participants, however, clearly distinguished them as separate entities, *research and environmental education*. I use the *in/and* device throughout the thesis to reflect these different conceptions which co-existed in the data.

emerging from the results² and a wish to open them up rather than draw conclusions from them, (2) an emphasis on the research *process* and the continuous interplay between theories and results and (3) the socially constructed nature of research activities and outcomes.

Current convention is to write a thesis in a style which McWilliam (1993:200) refers to as "linear articulations of the theory/ method/ results nexus". Most researchers today present their research in the sequence of a Literature Review which argues for the theoretical position which informed the research, followed by a Methodology section which outlines the techniques used to gather data, a number of chapters describing and discussing the ensuing Results and finally the Conclusions.

Such a discrete, stage-like sequence does not correspond with my experience of the research process in which theory, method and results interact in a complex and dynamic way and conclusions are not only drawn towards the end. Such a design fails to adequately reflect the "embeddedness of theory in the entire research task" (McWilliam 1993:200). The convention of depicting "theory as a tidy point of embarkation and 'results-as-findings' as a convenient point of disembarkation" (*ibid*) did not fit the task of a theoretical study, of describing the situation in a manner conducive to generating questions and theories, rather than to 'discovering objective findings.' (See 4.3.1 for notes on the use of the terms *findings* and *results*). I wanted the thesis format to reveal that "the formulation of the narrative is always a theoretical enterprise" (Popkewitz 1991:11). The literature drawn on is thus referred to throughout the thesis rather than in a separate section.

The research process itself is described in a reflective manner and Chapter 3, in which the focus is on research design and development, should also be read as a learning outcome of the study. The methodology is recounted as a process involving constant critical and often collaborative revision, rather than as a recipe. Over the three-year period of the research, a time of significant professional growth, the "theoretical vantage point" (Lather 1991:83) from which I undertook the research was clarified and re-located (see 3.1, 3.2.4). These theoretical shifts are revealed throughout the thesis in descriptions of the research choices (such as these choices about the format of the thesis and choices about research design and data interpretation).

Another convention which I considered inappropriate was the use of the terms 'the researcher' and 'the writer' to refer to myself, a practice which Lather (1991:84) called "the erasure" of the researcher. Central to my orientation in this study is that social practices and products such as research and knowledge are socially constructed. In the social sciences researchers usually generate rather than discover the outcomes of the research. They do so within particular social contexts which influence them and the research process and within the values and theories to which they subscribe (Lather 1991; Popper 1976). In the words of Hall (1985:103) "[t]here is no social practice outside of ideology". Over the past decades reconceptualisations in the arena of science have allowed researchers to recognise that they are not neutral in the sense of having no opinions or feelings about 'their' topics. There is thus little need to purport to such neutrality or disinterest by distancing

² The notion of "research *in/and* environmental education" (see 1.1) is an example of a device to reflect complexity and ambivalence.

oneself from one's work as 'the researcher' or 'this writer'.

My emphasis on the recognition of the socially-constructed nature of research findings and knowledge in general relates to my personal/ professional concern about a complex and grave environmental crisis of the late 20th century (see 2.1). Along with Schumacher (1974), Capra (1982), Merchant (1983) and Beck (1992) I locate root causes of the environment crisis in social structures and orientations - economic and other policies, educational and other institutions, value systems, worldviews, habits and practices. The recognition that these are socially constructed (Berger & Luckmann 1967) and hence open to change allows for the kind of thinking that could help humanity to indeed change them and work towards the ideal, described in *Caring for the Earth* (IUCN 1992), of sustainable living in a healthy environment.

In the light of a perceived 'environment crisis' change and transformation formed a focus for the study (see Chapter 2). As I engaged with participants and with the resulting discourse, I encountered a range of views on environmental education and research, many and diverse references to change, and apparent discursive shifts in response to broader developments influencing environmental education communities in the region. The situation I studied emerged as a landscape of perspectives that were shifting, but also stable, sometimes coherent and often contradictory. The thesis is a portrayal of that landscape.

1.3 THE METAPHORICAL FRAMEWORK FOR THE THESIS

In the following chapters I describe a landscape of perspectives on research in/and environmental education, within which research priorities for environmental education can be located. I do so through approaches analogous to some of the many ways in which landscapes can be depicted.

Geographers may describe landscapes by means of topographical maps to show the shape or 'lie of the land'. The context of this study, like the contours of the landscape, determines the eventual shape of what develops on top of it. The features of the landscape being studied here, and which shaped not only the results but also the research orientation itself, were the current socio-political, educational and bio-physical changes in southern Africa. These are outlined in Chapter 2. For this sketch of the context of the study detailed information was deemed less important than the setting of a general backdrop. Thus historic trends in environmentalism and environmental education, political change in the region and international developments in educational research are described quite generally, in a style similar to the bold strokes with which impressionists paint a landscape on canvas. In Chapter 2 I also identify the lens through which I studied the landscape of research priorities, namely social change.

In Chapter 3 I describe the research process, data collection techniques and methodological decisions over the course of the study in a format rather similar to explorers' use of travel logs to document their changing vistas on the landscape and their choices of routes. I introduce methodological issues from a reflexive perspective, bringing "the teller of the tale ... back into the narrative" (Lather 1991:87). Since the description of the research process also addresses the shaping of the study over

time Chapter 3 also reflects a geomorphological description of the development of particular landforms, with an emphasis on shaping influences such as climate. Such influences would include influential encounters and insights emerging during the study.

Chapter 4 maps out clusters of results in the form of a pattern of four different orientations to environmental education, research and social change. These clusters include three positions in the landscape which appear as areas of, say, similar vegetation types. These positions on the map can be seen as habitats, because certain ideas tend to frequent them. They might also be seen as territories, because they appear to be contested (see 6.3.2, however). It is important to note, though, that these positions are not fixed or highly distinct. In nature certain plant species occur in different habitats, perhaps in different form, for example growing taller or more stunted. The distribution patterns of plants also vary with time; a species might start occurring in areas where it has not done so before, spreading in response to climate or cultivation. Thus habitats shift over time. They also overlap and it is often difficult to draw exact boundaries between them. In the same way the different perspectives on research, environmental education and change identified in the study are not to be seen as discrete and static categories.

In describing the different positions I also use other techniques reminiscent of different landscape depictions. Small case studies and quotes from interviews act as snapshot photographs, while tables are like the schematic line drawings utilised in textbooks - functional heuristically, but limited in portraying the complexities of reality.

The fourth orientation described in Chapter 4 - a 'reflexive' perspective on environmental education / research - differs from the other three in that it does not present another territory or even a position on the map. It is rather like the clouds floating above the landscape or the wind which blows through the three vegetation types, for this perspective does not represent another proposed hegemony. It is a position from which to reflect on the others.

Landscapes are dotted with animal life which move within and between different habitats. A number of themes or substantive issues emerging from the results appeared as important to point out or pursue. These themes and issues are described in Chapter 5 in order to inform the discussion of the potential and limitations of various perspectives, which follows in Chapter 6.

In Chapter 6 I examine the orientations to research in/and environmental education identified in the landscape, as well as implicit perspectives on how change comes about, for their potential to contribute to social change as a meaningful response to the environment crisis. I do so with reference to the substantive issues and themes described in Chapter 5. This approach to exploring and depicting a landscape can be likened to satellite images with which areas of growth or stagnation (eg. biomass increase or desertification) are identified.

Landscapes can also be described rather reductionistically in trail maps or tour guides for those looking for directions. Chapter 7 summarises the main outcomes of the study and makes recommendations, but less by pointing others in particular directions and more by tracing some of

my own decisions based on what I learned from the study about research priorities in environmental education. This final chapter also introduces some new data in the discussion of research priorities in the light of the foregoing chapters. There are no conclusions; a key feature of the study is that it raises issues, reveals significant features of the researched landscape and 'loosens' aspects of our existing understanding of the topic. The thesis aims not to conclude, but to open up.

(a compass for the journey) ~

I allow myself eddies of meaning:
yield to a direction of significance
running
like a stream through the geography of my work:
 you can find
in my sayings
 swerves of action
 like the inlet's cutting edge:
 there are dunes of motion,
organizations of grass, white sandy paths of remembrance
in the overall wandering of mirroring mind:

but the Overall is beyond me: is the sum of these events
I cannot draw, the ledger I cannot keep, the accounting
beyond the accounts.

in nature there are few sharp lines: there are areas of
primrose
 more or less dispersed;
disorderly orders of bayberry; between the rows
of dunes,
irregular swamps of reeds,
though not reeds alone, but grass, bayberry, yarrow, all ...
predominantly reeds.

I have reached no conclusions, have created no boundaries,
shutting out and shutting in separating inside
 from outside: I have

drawn no line:
as

manifold events of sand
change the dune's shape that will not be the same
 shape
tomorrow,

so I am willing to go along, to accept
the becoming
thought, to stake off no beginnings or ends,
 establish

no walls: ...

(from *Corson's Inlet*, by A.R. Ammon)



CHAPTER 2

CONTEXTUAL INFLUENCES

manifold events ... change the shape
that will ... shape tomorrow
(Ammon in Spanos 1987)

[texts are] a part of the social world ... and of ... the historical
moments in which they are located and interpreted

(Said 1983:4-5)

Our methods of research emerge from our involvement in our social conditions and provide a means by which we can seek to resolve the contradictions we feel and the worlds that seem unresolved in our everyday life (Popkewitz 1984:viii)

2.1 INTRODUCTION

This study was deeply influenced by the context within which it took place (the 'contours of the landscape'). Arguably the most influential contextual dimensions (other than the institutional base of the study, outlined in 1.1) were

- * A growing regional and international awareness of the scope, gravity and complex causes of global and regional environmental issues, and resultant attempts to address these, *inter alia* through education
- * The recent political history of southern Africa and its links to educational change
- * Epistemological and accompanying methodological shifts in the social sciences and the emergence of new research traditions.

These dynamic and interactive dimensions of the context all relate to 'change'. It is important to sketch them in this chapter¹, for it is due to the influence of these contextual factors that change features strongly in

- * the choice of a research design (multiple cycles of enquiry which allowed for an emerging clarification of a methodological position, as outlined in 3.2.3 and 3.2.5)

¹ It is important to note that in painting this brief and therefore rather broad overview I have to assume a willingness on the part of the reader to accept the generalisations involved.

- * the research focus and lens for analysis (as outlined in 6.1) and indeed the identification of research priorities (Chapter 7), and
- * the discourse of most participants, who were aware of these multiple shifts and responding to the ways in which they shaped their professional contexts (See 6.1.4).

Before I commence the overview, I need to note that I chose to focus on 'social change' as context for the study, because of personal/professional concerns: deteriorating natural environments which seem to require radical transformations in the ways we live, the long-awaited democratisation in South Africa and the need for educational renewal and development to improve the quality of life in southern Africa. These interests form the backdrop to my involvement in environmental education. Most significantly, my understanding of environmental education is that of a process of social transformation, a view for which I found local and international support.

2.2 SHIFTING CONCEPTUALISATIONS OF ENVIRONMENT, ENVIRONMENTAL ISSUES AND SOLUTIONS

As awareness of environmental problems and in many cases those problems themselves spread and deepened, conceptualisations of the environment, the nature of the crisis and the proposed solutions, including environmental education, changed.

The dawn of modern environmental awareness is often attributed to the year 1962 when Rachel Carson's *Silent Spring* (1965) first sounded a warning of accumulating environmental damage due to synthetic pesticides. The writings of Carson and others of the time made a strong case for an analysis of root causes of environmental problems and radical ('root'²) solutions (see Dobson 1991 for an overview of such analyses). However, much of the earlier efforts towards addressing the environment crisis in the arena of education seemed to have been characterised by rather limited conceptions of the environment, the nature of the crisis and the kinds of actions to take towards its solution.

Environmental problems (including development) were seen as detrimental human interference in or 'impact on' natural systems, to be minimised but not necessarily re-conceptualised. The increase in the rate of extinction of animal species in particular was a prime concern in the early days of conservation (the history of the then World Wildlife Fund refers). Proposed solutions tended to focus on the preservation of remaining 'unspoiled' areas and the minimisation of the impact of further development. (Early projects of the Southern African Nature Foundation might serve as an example of the former strategy). In many early educational responses the concept 'environment' tended to signify 'nature' or, as in the discipline of ecology, the bio-physical surroundings of organisms. (O'Donoghue 1990 describes a move away from this perspective.)

Throughout the seventies and eighties mainstream scientists added their voice to the call for an acknowledgment of an environmental crisis. International scientific bodies noted a need for "a

² The Latin origins of the word *radical* means *root*.

transformation in the behaviour of entire societies" (*World Conservation Strategy*, IUCN/UNEP/WWF 1980) and for ordinary individuals to adopt an ethic and code of behaviour to complement and support the other key solutions which were now developed: the conservation of protected areas and the "improved management of the environment to serve humanity" (UNESCO 1978:4, also IUCN 1980). Educational responses were generally two-fold: the transmission of (often scientific) knowledge about the (bio-physical) environment and the provision of 'nature experiences' aimed at developing appreciation and concern (O'Donoghue 1993).

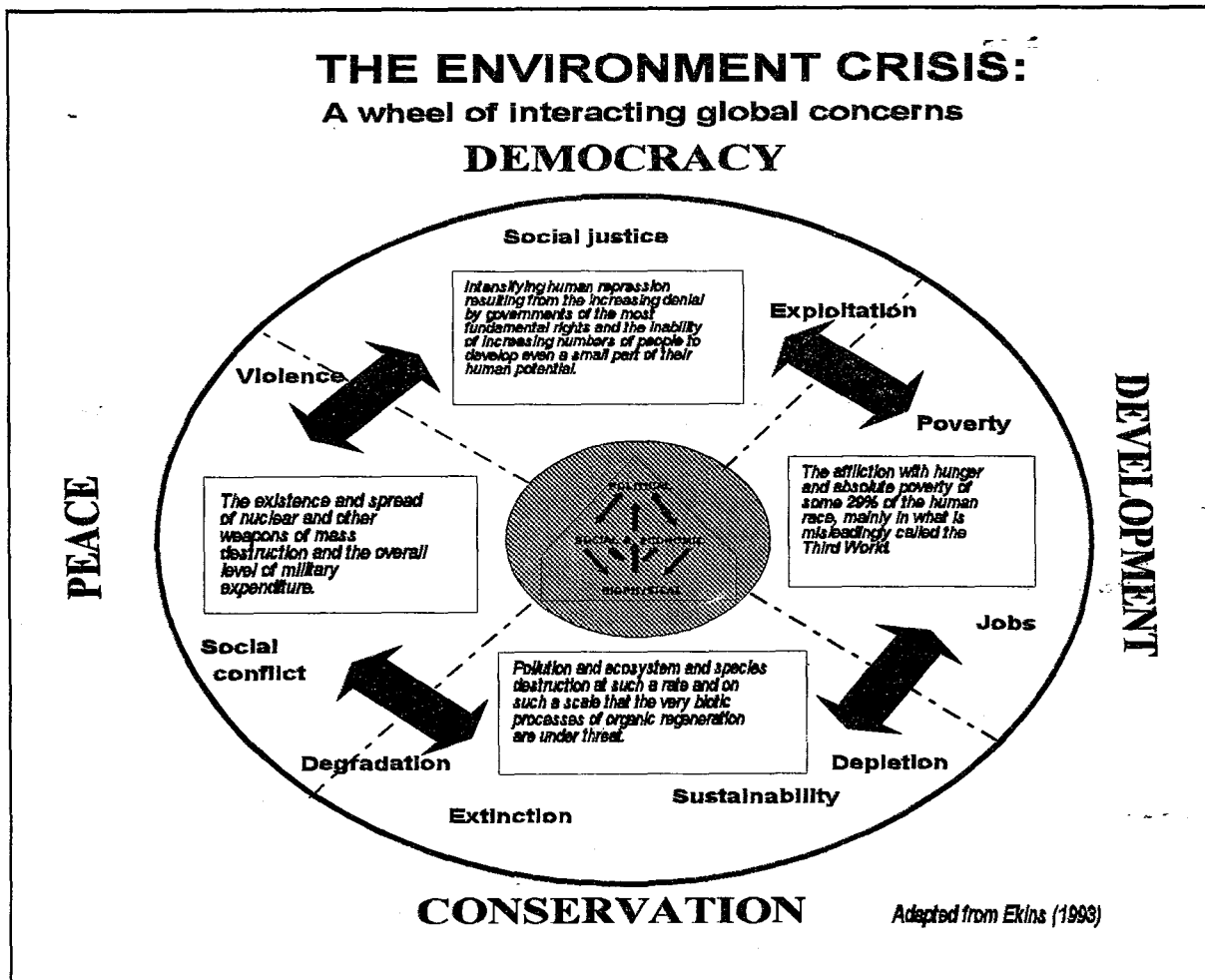


Fig. 2.1 A Diagrammatic Representation of the Dimensions of the Global Environment Crisis. (Adapted from Ekins 1992 and O'Donoghue 1993, in Janse van Rensburg & O'Donoghue 1994).

Following the counsel of the 1977 Tbilisi Conference on Environmental Education (UNESCO 1978) the late eighties and nineties featured broader conceptualisations of the environment, in which the social dimensions of the concept were given as much attention as the bio-physical. O'Donoghue's model of 'environment' (O'Donoghue & McNaught 1991, O'Donoghue 1993), for example, suggests interactions between social, economic, political and bio-physical arenas (see the central part of Fig. 2.1).

Moreover, the socially constructed nature of 'environment' has become a point of emphasis (Fien 1993:30-31). DiChiro (1987:24-5) writes:

We define [the environment] as such by use of our own individual and culturally imposed interpretive categories, and it exists as the environment the moment we name it and imbue it with meaning. Therefore, the environment is not something that has reality outside or separate from ourselves and our social milieux. Rather, it should be understood as the conceptual interactions between our physical surroundings and the social, political and economic forces that organise us in the context of these surroundings. It is in this sense that we can say that the concept 'environment' is socially constructed.

In keeping with this development, environmental issues are generally also more broadly conceptualised. Based on Ekins' (1992) description of a four-fold environment crisis, Fig.2.1 illustrates environmental issues as manifested in four interacting dimensions of the environment (adapted by O'Donoghue in Janse van Rensburg & O'Donoghue 1994).

Proposed solutions to the crisis emanating from the conservation arena have also become broader, to incorporate the 'development' needs of so-called Third World countries (see eg. Agarwal 1986) and, since 1980, the concept of sustainable development (IUCN 1980, WCED 1987, IUCN 1992). The trend to integrate the concepts of environment and development, reflected in the 1992 Earth Summit (see eg. UNESCO 1992) represents in some ways a more sophisticated understanding of the nature of the crisis and routes towards its resolution. From other perspectives such as that of many of the non-governmental organisations attending the Earth Summit, however, this trend could also be seen as an attempt to subsume ecological concerns under development concerns.

There might also be ambivalence about whether the educational response to environmental problems has undergone significant refinement over time (see eg. Fien 1993 and O'Donoghue 1993). Key international organisations tend to regard education as a tool to bring about pre-determined behaviour changes (Janse van Rensburg 1994a); "a major *vehicle* for imparting global change instruction" (UNESCO 1993:3, emphasis added). This instrumentalist³ view is offset by another which sees environmental education as "an *act* for social transformation ... a dynamic *process*" (International NGO Forum 1992:1). For an illumination of the significance of the difference in approach, it is revealing to analyse environmental issues as the 'risks' of modernity⁴ (Beck 1992).

³ An *instrumentalist* perspective on education sees it as a (mostly linear) means to pre-determined ends, rather than a process. A 'vehicle' 'delivers' a pre-packaged set of knowledge from an unquestioned authority to a passive receiver. A 'process' actively involves both teacher and learner, and unintended outcomes might be valued too.

⁴ *Modernity* refers to a worldview of Western origin which is associated with a transition from pre-modern times through the rise of science and the industrial revolution. It is linked to the Enlightenment ideal of emancipation from myths, superstition and the forces of nature through critical reason of a particular form (see Docherty 1993:5). Modernity is based on tenets of an inevitable linear progression and eventual secular salvation (individual freedom) through self-interest and human rationality, particularly as evidenced in science, technique and technology, liberal democracy and

The depletion and degradation of natural resources through industrialisation (Goldsmith 1988) can be traced to the modernist Grand Narrative⁵ of material wealth and progress, particularly for individual self-interest, in combination with scientism and technicism (Capra 1982, Shiva 1988). Starvation in 'under-developed' countries; the gap between the rich and the poor, both within and between countries and associated environmental damage have been linked to modern political-economic systems (Ekins 1992, Porrit 1984), related consumption patterns (Trainer 1985) and narrow definitions of development (Ekins 1992, Shiva 1988).

In many of the earlier and still prevalent responses to the environment crisis, the ideals and conventions of modernity feature strongly (Janse van Rensburg 1994a, O'Donoghue 1993). An example is the aforementioned Grand Plan of social transformation on a global scale by engineering behaviour change through instrumentalist education / 'awareness-raising', as proposed by scientists (UNESCO 1993) and applied science educators (Hungerford *et al.* 1980, Hungerford 1981, Hungerford & Volk 1990). Such perspectives on environmental education are being questioned (Huckle 1991, Robottom 1990, Janse van Rensburg 1994a, O'Donoghue 1993) as our insights into the environment crisis become deeper and our analyses of its causes more penetrating than before (see Dobson 1991, Beck 1992, Merchant 1983). In a critique of the modernist assumptions underpinning much of environmental education in South Africa, for example, O'Donoghue (1993) proposes a reflexive⁶ approach.

O'Donoghue's work has developed into a unique attempt at developing a sociological orientation for environmental education by drawing on process sociology (O'Donoghue *et al.* 1994, O'Donoghue 1995). Recent international developments in environmental education also draw on critical theory to articulate a 'socially critical' environmental education (Fien 1993, Huckle 1993, Greenall Gough and Robottom 1993) and on combinations of critical theory, phenomenology and ethnography (Wals 1991). Much support for a critical approach to environmental education might be expected in the southern African context (see 4.4.4), where political features of oppression and inequality are foregrounded in many educational and developmental arenas. These features are followed up below.

nation-state capitalism (Lather 1991:32). I use the term *modernism* to refer to the ideological underpinnings of modernity, characterised by an unquestioning faith in the overriding value of progress, rationality (rationalism, see Docherty 1993:13-4), science (scientism, see Beck 1992:3) and technical solutions (technicism).

⁵ The striving for single, universal and simplified explanations, strategies and schemes is described by terms such as 'grand theory', 'grand plan' and grand or *meta-narrative* (see Docherty 1993:11, 417-8. Examples are the theories of Marx, Freud and Darwin. Docherty explains (after Lyotard) that metanarratives become coercive and normative, controlling the local "under the sign of the universal" (p.11) and "purporting to be a privileged discourse capable of situating, characterizing and evaluating all other discourses, but not in itself infected by ... historicity and contingency ... and in need of legitimation" (p.417-8).

⁶ O'Donoghue (1993:37) describes *reflexivity* as "cultural reconstruction through critical social processes of experiential review".

2.3 POLITICAL CHANGE IN SOUTHERN AFRICA

Participants in this study were drawn mainly from three areas in the region of southern Africa (Fig. 2.2). These are the nation states Namibia, Zimbabwe and South Africa, the latter including the 'homeland' territory Bophuthatswana, which was at the time of the study, along with other 'homelands', classified as 'self-governing'⁷ (see also 3.3.2).

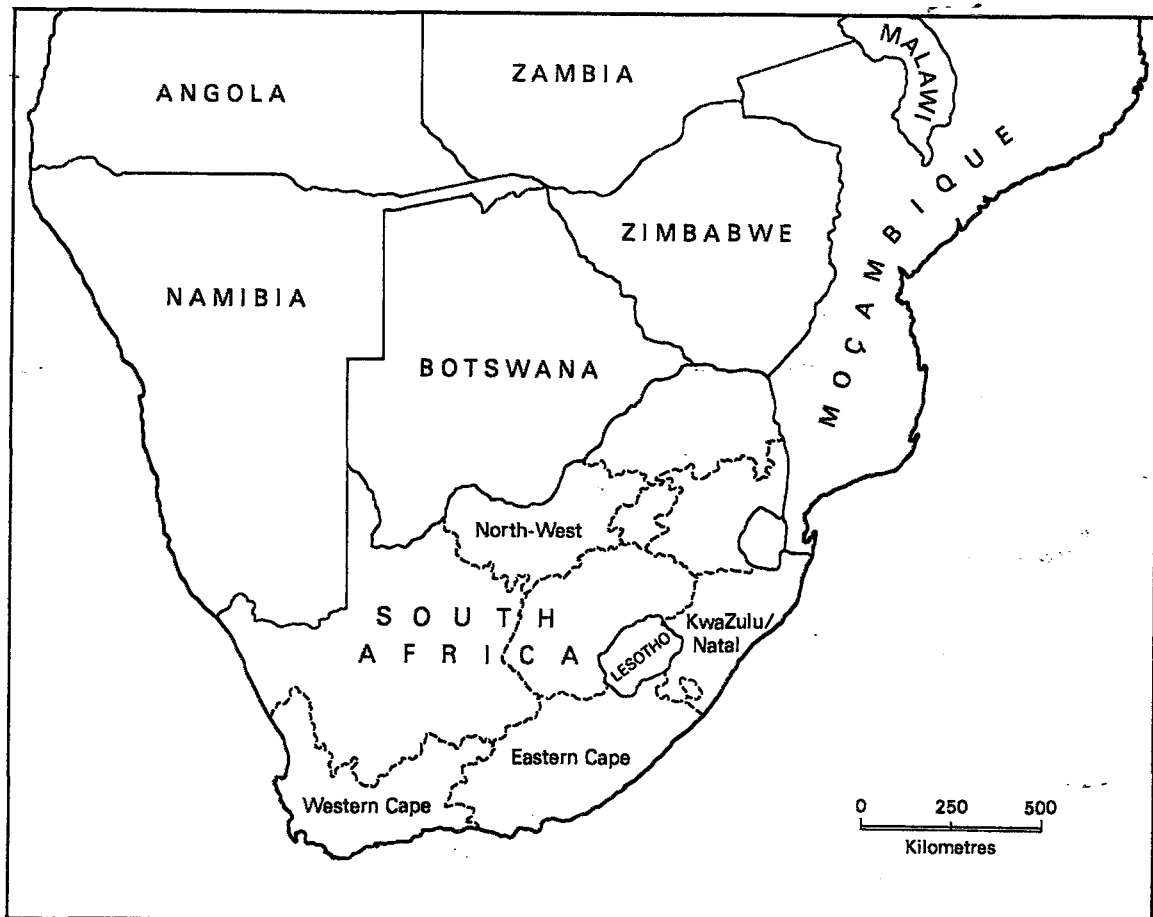


Fig.2.2: Map of Southern Africa

These countries have in common several environmental, developmental and educational issues. They share a bio-physical environment in which fertile soils and particularly water are scarce resources (Mayo, O'Keeffe & Sill 1993). They are dependent on sometimes meagre and always dwindling natural resources for development and struggle to provide an adequate quality of life for rapidly

⁷ The system of 'homelands' for black South Africans was linked to the apartheid regime. In April 1994, after the completion of fieldwork, South Africa's first democratic election led to the abolition of the homeland system and the creation of nine new provinces. The former Bophuthatswana is now known as the North-West Province.

growing numbers of poor inhabitants (UNDP 1993). They also share some similarities in political histories and in particular, formal education practices.

Like elsewhere in Africa, the region has been characterised by liberation struggles against non-representative governments. Various parts of southern Africa have been colonised by the British, Dutch, Portuguese and Germans. The violations associated with colonisation have been epitomised by the institutionalisation of racism by the government which ruled both South Africa (until April 1994) and the former South West Africa, now Namibia (until 1990). Political discrimination and oppression through either colonial or apartheid governments manifested *inter alia* in inferior educational quality and provision for black children (Chung & Ngara 1985, Hartshorne 1992, MEC 1993).

During the past few years several African countries have experienced the initiation of democratic changes and policies, commonly referred to as the continent's 'second liberation' (Barnard & Kotu-Rammopo 1994:3). This process has been motivated by both international pressure and local demands for more representative governance and improvements in the quality of life of local populations. The general thrust, at least in theory, is away from authoritarianism, exclusiveness and injustice and towards democracy and equal opportunity. That this transition is not a smooth one is clearly exemplified by the extended civil wars in Angola and Mozambique.

Political developments have been so dramatic in southern Africa in recent years that they would undoubtedly have had an influence on participants' views on research priorities. I will therefore briefly outline these developments in those countries most frequently represented in this study, namely Zimbabwe, Namibia and South Africa.

Zimbabwe won independence from a minority 'white' government in 1980 after a protracted 'bush war'. Since then it has utilised foreign funding and expertise and local research to improve practice in its education system. Teacher education has in the past been strongly informed by socialist theories (Chung & Ngara 1985), but my own observations revealed only the recent influence of British- and Canadian-based constructivist approaches. It is reported that actual practice in most schools is dominated by drill methods (Stiles, pers. comm. 1993). Thus attempts at educational reform tend to focus on teacher 'training' to shift the predominant transmission modes of teaching to more learner-centred approaches. Zimbabwe shares this feature with most other southern African countries, including Botswana (Prophet 1990) and Lesotho (Anon., pers.comm. 1993).

In Namibia, which became independent from South Africa's apartheid regime in 1990, educational reform also entails an explicit move from "education for an elite towards education for all", with a strong focus on "learner-centred teaching" (MEC 1993). With this the government is trying to overcome what it sees as a legacy in which

Initially, education for Black Namibians was justified in terms of its vocational utility. For the most part, its task was to prepare people for the specific jobs that German and then South African rule required. ... most Namibians were limited to a few years of primary education that in general functioned to reinforce their subordinate role (MEC 1993:2).

Like Zimbabwe, Namibia is supported in its quest for educational reform by Western funders and consultants, particularly those from Nordic countries who have been working with the main liberation movement since pre-independence (Janse van Rensburg 1994b).

In South Africa state institutions for formal education, particularly those designated for black children, have been characterised by transmission teaching of the values embodied in Christian National Education (Ashley 1989), and content taught and learned as a means of passing examinations. These same schools, colleges and universities became key sites of the struggle against apartheid. Both the oppression and the resistance contributed to a break-down in the 'culture of learning' and to the current 'crisis' characteristics of 'black education' in general (Hartshorne 1992). In the early nineties the popular drive for democracy was officially recognised and negotiations started towards a first non-racial election in April 1994. This development has had a major influence on formal education and various groups have been developing proposals for a new national curriculum. Examples are the former Department of National Education's *Education Renewal Strategy* (DNE 1991) and the African National Congress' *Policy Framework for Education and Training* (1994).

Environment and development education in the region has been influenced by the political and formal educational shifts described above, often in association with changing economic contexts, as the results of this study should illustrate. Throughout the region the development arena has been characterised by shifts from the expert-driven 'upliftment' of the poor, through less authoritarian attempts at 'facilitating' communities to identify and address their needs, to seemingly more collaborative efforts at 'empowerment' and 'capacity-building' for reconstructive development. In environmental education the shifting discourses include moves away from 'passing on messages' to constructivist notions of using 'what learners already know' to come to better shared understandings of new situations (see eg. O'Donoghue 1993).

Environmental education is often promoted as a means of improving formal education in general. Regional examples include the arguments of Naidoo, Kruger and Brookes (1990) and the *Enviroteach* materials developed in Namibia as 'learner-centred', 'cross-curricular' and 'activity-based' teaching resources (see Janse van Rensburg 1994 for a recent evaluation of the latter project).

The Environmental Education Policy Initiative (EEPI Clacherty 1993) has been an attempt at stimulating and supporting other curriculum policy initiatives in formal education in South Africa. National curriculum initiatives, such as those of the EEPI and the then Council for the Environment (1993), are not unexpectedly becoming the site of contestations about which forms of environmental education or whose proposals and resource materials should become legitimised in the new curriculum for the new South Africa. Taylor *et al.* (1993) point out the danger of perpetuating ideological and theoretical orientations associated with the Apartheid regime in proposed new developments. Such orientations may go unexamined if the current trend in general educational reform in the country, to focus on structural rather than ideological and epistemological change, continues.

The final section of this chapter explores epistemological and methodological shifts in the international arena of educational research.

2.4 EPISTEMOLOGICAL AND METHODOLOGICAL SHIFTS IN EDUCATIONAL RESEARCH

... a movement that is reinscribing science 'otherwise', reshaping it away from a 'one best way' approach to the generation and legitimisation of knowledge about the world.

(Lather 1991:3)

Growing concern about the crises of late modernity⁸, including their manifestations in the bio-physical environment, have strengthened calls for a reconceptualisation of epistemology⁹ and for a broadening of the base of knowledge construction. The Treaty for Environmental Education adopted by the International NGO Forum (1992) is a recent example of such a call; so is Beck's (1992) argument for an inter-epistemological dialogue to address environmental 'risks', between scientists and non-scientists. Following global trends there has been a growing interest in what has been termed 'indigenous knowledge', in *inter alia* conservation and environmental education arenas in southern Africa (see eg. FRD 1994 and Mtshali 1994).

In the arena of environmental education research, discussions on the most appropriate ways of viewing and developing knowledge (broadly, epistemology and methodology) have been led by Robottom and colleagues (see eg. Robottom 1990, Robottom & Hart 1993). Following the 1992 meeting of the North American Association of Environmental Education (NAAEE), which featured an international seminar on the topic (Mrazek 1993), these discussions have centred on the so-called paradigm debate, consisting of arguments for and against the appropriateness of 'positivist' research in environmental education. Although a milestone in the arena of environmental education this quest for clarity on the legitimacy of post-positivist research traditions would be regarded as dated by many mainstream educational researchers (eg. Lather 1991, Popkewitz 1991). Its centrality of concern in environmental education circles is probably related to the 'applied science' roots of environmental education, particularly in the United States (Robottom 1990). The US has been the most prolific contributor to research in environmental education and an empirical-analytical approach has been the dominant orientation underpinning that research. This is evident in the NAAEE's academic publication, *The Journal of Environmental Education* (Robottom 1993, pers. comm.).

Although the 'paradigm debate' also featured in epistemological and methodological clashes in the wider educational arena, this happened mainly during the late 1970's and 1980's. Briefly, it involved

⁸ The term *late modernity* refers to a time and position in world history where the ideals of modernity (see Section 2.2) have been extensively pursued.

⁹ *Epistemology* refers to the study or consideration of knowledge, its construction and legitimisation; "the rules and standards by which knowledge about the world is formed" (Popkewitz 1991:28). Popkewitz (1991) provides a sophisticated interpretation of this concept in the context of education.

contestations between positivist and non- or post-positivist¹⁰ perspectives on knowledge and research (Goodman 1992, Guba 1990, Harrè 1981, Lather 1991). From a positivist perspective knowledge lies 'outside' and it can either be discovered or approximated by adopting a neutral research stance and following procedures resembling simplistic versions of 'the' scientific method. From non-positivist perspectives knowledge is constructed in social contexts, by researchers who hold particular ideological positions which influence their results. Post- or non-positivist researchers include those who draw on Constructivism (such as Guba 1990) and Critical Theories (such as Lather 1991).

Recent shifts in research traditions or 'paradigms' have been linked to global trends such as calls for less reductionistic approaches to science, medicine and economics (Capra 1982), to feminism (Harding 1987), to movements for peace and democracy (Greig, Pike & Selby 1987) and to environmentalism (Capra 1982). (This illustrates the interrelatedness of the various dimensions of socio-ecological change discussed in this chapter.)

For our purposes here only a few key points about current developments in educational research are relevant. It has been noted above that there have been ruptures in research traditions, which included a break with positivism as the *only* legitimate paradigm of enquiry. The second shift to note is a move away from the notion of 'paradigm', which has been one of the significant influences of postmodern¹¹ and post-structural¹² perspectives in the arena of the social and educational sciences. The main point to note is the opening up of the arena of research methodology to a diversity of interpretations and approaches.

The idea of paradigm shifts (first described as scientific revolutions by Kuhn (1970) represents a modernist notion of progress in knowledge production (Lather 1991). Postmodern perspectives have taken understanding in the educational research community to beyond the debate on and indeed the concept of paradigms. Lather (1991:11) quotes Marcus & Fischer (1986:x) to describe the problematisation of the concept of 'paradigm shift' as essentially

¹⁰ I distinguish between *post-positivism* as a position of 'modified positivism' and *non-positivism* as a position altogether outside the assumptions of positivism. The differences between these research traditions are discussed by Guba (1990) and Lather (1991).

¹¹ I find the label *postmodern* most useful in reference to a *perspective*, sensibility or orientation, rather than a time period or genre (see Docherty 1993 and Lyotard 1993). Postmodernism provides a set of tools with which to analyse and reflect on, in particular, society, culture and history. As a perspective on modernity (see Section 2.2) it raises questions about whether modernist ideals have been, and can be, met through the paths of grand narratives, individualism, rationalism and scientism (see Chapter 7).

¹² *Post-structuralism* is a theoretical framework with roots in linguistics and social theory, which makes explicit the power of language to shape our thoughts and experiences. Like postmodernism it rejects notions of 'grand' or meta-narratives (see Section 2.2). Other premises of post-structuralism include that reality is constructed by language - we can only understand and interpret what we can say - and that language is always socially and historically situated. See Cherryholmes (1988) for a post-structural account of educational theories; also Kincheloe & Steinberg (1993).

that 'paradigm' may be a useful transitional concept to help us move towards a more adequate human science, but that "to still pose one paradigm against the other is to miss the essential character of the moment as an exhaustion with a paradigmatic style of discourse altogether".

Foucault introduced an epistemological shift 'from paradigm to discourse'¹³. Focusing on the role of language in the construction of research objects, the postmodern contention is that knowledge is never final, but rather historical, contested, contingent, temporal and emergent (Clifford 1988, cited by Lather 1991:14).

Contributions such as these illustrate the role of postmodern and post-structural perspectives in opening up epistemological and methodological arenas where positivism once reigned supreme. The field is currently characterised by contestations about the value of various research 'interests' (empirical-analytical, interpretative and critical, according to the earlier work of Popkewitz 1987, drawing on Habermas 1972) or 'frameworks' (post-Kuhnian, critical or post-structural, as described by Lather 1991 and Goodman 1992). Marcus and Fischer (1986, in Lather 1991), however, describe the situation as an openness to the experimental moment. Lather herself (1991:6-7) writes of

a time noteworthy for its disturbance of the formerly secure foundations of knowledge and understanding ... the end of the quest for a 'God's Eye' perspective, a disembodied, universal perspective that transcends time and place and human values ... [the end of the quest] for certainty in our ways of knowing (Bernstein 1983). It is a time of demystification, of critical discourses which disrupt the smooth passage of what Foucault (1980) calls 'regimes of truth'. The desire is not to substitute an alternative and more secure foundation ... but to produce an awareness of the complexity, historical contingency and fragility of the practices that we invent to discover the truth about ourselves ... It is a time of openness and questioning of established paradigms in intellectual thought.

These developments provide pathways out of the current 'paradigm debate' in environmental education research. The tools provided by a postmodern perspective, along with the recognition of the socially constructed nature of science and knowledge (see 1.2) might also help to fashion more meaningful responses to the environment crisis. A reading of Beck (1992), which provides a historical perspective on the environmental risks of modernity, exposes the folly of modernist grand solutions for environmental problems. It also reveals how the Enlightenment ideal of freedom from myths has been thwarted by turning a narrow conceptualisation of science and scientific method into an unquestionable quasi-religion (scientism). From this historical perspective it seems worthwhile to

¹³ Foucault used '*discourses*' (or 'discursive formations') to indicate "systems of rules which make it possible for certain statements but not others to occur at particular times, places and institutional locations" (Fairclough 1992:40) and which actively constitute or construct society on various dimensions. Foucault further defines discursive practice as "a body of anonymous, historical rules, always determined in the time and space that have defined a given period, and for a given social, economic, geographical, or linguistic area, the conditions of operation of the enunciative function" (Foucault 1972, quoted in Fairclough 1992:3). This use of the term differs from the general practice, also in this study, to use it in a more linguistic and less historical sense to refer to regularities in what is said and written (Cherryholmes 1988).

view research as

a reflexive process that focuses on our too easy use of taken-for-granted forms ... [Postmodern and post-structural perspectives] might lead us towards a science capable of continually demystifying the realities it serves to create (Lather 1991:15).

There is however little doubt that this 'opening up' of science and epistemology is unsettling and bound to create different reactions in the (environmental) educational research community. Lather (1994:46) notes that

Whether to celebrate or lament the felt loss of found worlds depends on how one reads the political possibilities that open up when 'truth' is positioned as made by humans via very specific materials practices.

As I argued in 1.2 and above, I see this development as the unfolding of a space within which to engage more productively with the issues of the environment crisis, through education and educational research.

2.5 CONCLUSION

The context of this study thus consists of interacting streams of change which have been significant in shaping the research design, orientation and results. As I will show in 4.4.5 and 6.2.7 it is meaningful to conceptualise environmental education itself as a process of social change in response to the environmental crisis. At the same time it can act as a "broad sensitising construct" (O'Donoghue 1986:18) with which to engage education in response to that crisis.

In the light of these shaping influences, this study locates research priorities in southern Africa in the context of change. It reflects on ways in which environmental education research can respond to, engage with and contribute to the multiple changes described here. The next chapter describes the research design which was aimed at an ongoing clarification of the role of research in/and environmental education in the processes of change.



RESEARCH PROCESS AND METHODOLOGY

(Adapted from Ammon, in Spanos, 1987)

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a non-reflexive interpretative study, or on (2) the ideological subjectivity of the researcher, which might be the requirement for a study drawing exclusively on critical theories. It certainly does not (3) record methods so that others can follow the procedures to test the reliability of the results, which would be the function of such a chapter in a positivist project. By documenting the research process and methods for purposes of reflection I utilise what Bourdieu called 'the objectification of objectification'¹ (Jenkins 1992:47-52). Jenkins' account of Bourdieu's work on research methodology (1992) was a useful text in the development of the research methodology, as were Ely *et al.* (1991), Fairclough (1992), Kirby & McKenna (1993), Lather (1991) and Reason & Rowan (1981).

3.2 EARLY DECISIONS ABOUT THE RESEARCH DESIGN

3.2.1 Introduction

When I started this project towards the end of 1991 my aim was to investigate research priorities in environmental education in southern Africa. The only well-developed research model for determining priorities brought to light by a literature search and consultation with the HSRC (Human Sciences Research Council in South Africa) was the Delphi questionnaire technique (Green, Hunter & Moore 1989; Saayman, Phillips & Kok 1991).

Like other less developed models (eg. Dutton & Crowe 1988; *Science* 1988) the Delphi technique relies heavily on experts and consensus. I therefore considered it unsuitable for this study, for I subscribed to several of the principles of participatory research (see 3.2.2). A participatory research approach was also supported by the views of several participants, in a reflection of calls for the democratisation of research and educational processes in southern Africa (see 4.4.4). Participants alerted me to

- * the 'insular' nature of the 'mainstream' environmental education community (interviewee A1),
- * the potential for 'gatekeeping' in research which would only consult within that community (interviewee S6), and
- * the need to involve in the research those 'voices' (for example black people, women, non-scientists, development and other community workers) which are not often heard on matters of educational policy.

The need to consult more broadly than those currently regarded as important researchers, when establishing research priorities, have even been advanced by mainstream scientific journals. The

¹ A process or method of mentally 'stepping above' the research situation and looking down at oneself as researcher in that situation, examining the ways in which one strives for 'objectivity' or open-mindedness and the ways in which such a striving influences the situation and results. Jenkins uses it interchangeably with 'reflexivity'.

editors of *Science* (1988) argued that the alternative would match priorities to present patterns of research, resulting in a simple 'extrapolation' of current research into the future.

I sought to design a participatory study which would not only actively involve a range of participants in the research, but would also involve interaction between them. Marklund & Keeves (1988:192) noted that "... priorities should be determined by procedures that permit interaction to the full between research workers and users", adding that "[s]ometimes extensive debate will be required before one group can appreciate the views of the other ..."

Interaction of some kind did take place, in that some research participants used opportunities to comment on one another's perspectives. For example, one interviewee strongly questioned the idea of an 'insular' environmental education community (see 6.3.2). The level of interaction suggested by Marklund and Keeves (1988) was however not attained, and was perhaps neither feasible nor required (see 3.7.2.1, 7.5), particularly in the light of the shift from an interpretative to a reflexive approach to the research (see 3.7.2.3, 7.5).

3.2.2 A Participatory Research Orientation

The literature on participatory research (PR) is extensive (see for example Torbert 1981, Gaventa 1988, Hall 1981, Dudley 1992, Reason 1994). In most PR projects the problem is a shared one, but the research is usually initiated by the researcher who tends to be to a greater or lesser extent an 'outsider' compared to the other 'participants'. An explicit aim of many PR studies is the 'empowerment' of those other participants in a process facilitated by the 'outside' researcher. This is perhaps an overly simplistic account of PR, but it does explain a covert feature of many PR projects, particularly those which draw on critical theories². This feature is the assumption that certain people (in this case expert researchers) always hold power and that it is in their power to share this with (literally 'empower') others who are perceived to have no power. This is indeed a simplistic account of complex and dynamic situations in which power can also be seen as shifting continually between different people in different situations; Cherryholmes (1988:5, 35) insists that power is a 'relation' (see also Popkewitz 1991 and 6.2.4). I did however value several of the principles on which PR draws, in the light of which it seemed the most appropriate research design to employ. Those principles which I saw as relevant at the outset of the study were:

- * a commitment to research as a shared journey of discovery (Dudley 1992), in which people are mobilised for "their collective creation of new knowledge about themselves and their own reality" (Hall 1981:11)
- * empathetic relationships between researcher and other participants - what Dudley (*ibid* p.325) calls an "ethic of mutuality"

² Gibson (1986) gives a good introductory account of the body of knowledge referred to as 'critical' theory/theories. See Kincheloe & McLaren (1994) for a more recently developed review of critical theory.

- * a desire "to shift the centre from which knowledge is generated" (Hall 1981:9) by emphasising "people as experts" (*ibid* p.6)
- * empowerment in community - a view of knowledge as communal achievement (Dudley 1992) (the community here comprising all with an interest in environmental education in southern Africa).

These principles were in keeping with my wish that the research would be of benefit to those who take part in it, not just in the form of an end-product, but also during the process of the research. I will return to this ideal which is shared by many researchers, in following chapters (eg. 4.4.4, 6.4.2, 7.5).

3.2.3 Cycles of Enquiry

A further feature of PR is the idea that all participants should have a say, not only in the research question, but also in the methods employed. The study was based on 'multiple cycles of enquiry' (Rowan 1981) to allow for the refining of the research question or focus and an emergent research design (Tesch 1989) which participants could help shape as they were drawn into the research. This wish was consistent with the interpretative theoretical framework from which I approached the study at the time. (See 3.7.2.3 and 7.5 for an indication of the theoretical shifts which did take place and the value of an emergent design in allowing for such advances).

Each cycle in the spiral would involve overlapping stages of planning, data collection, sharing of results and reflection on data, the latter leading into the planning phase of the next cycle. These cycles of reflective enquiry are similar to an action research design (Kemmis 1988), the 'action' component in this study involving the sharing of research results of earlier cycles in order to build collaboratively on them.

An emergent design based on several cycles of enquiry allows one to start collecting data in the early stages of a study and then to reflect on that data in the study itself, rather than to discard it as a 'pilot' study (Rowan 1981:105). One can start small and as understanding of the research question(s) grows, one can, through subsequent cycles, either cover the same ground with the same participants in more depth, or broaden out to other participants. Merriam (1988) noted that repeated cycles of enquiry can increase the internal validity³ of the research findings.

This design thus seemed very appropriate, but it was questioned by two members of Rhodes University's Humanities Higher Degrees Committee (HHDC). The HHDC reviewed my formal proposal for a Ph.D. degree as part of a standard procedure of screening all post-graduate research before students embark on their projects. Their concerns with my proposal lay with the research

³ *Internal validity* refers to a measure of the extent to which one is studying what one thinks one is studying. It is a concept applied in positivist and post-positivist research. In non-positivist research it is largely covered and replaced by the notion of inter-subjective objectivity (see Ely *et al.* 1991).

methodology (see also 5.7.3). They advised *inter alia* that I should (1) rather apply established models for policy-related research and (2) employ techniques which would enable me to extract 'the truth' from interviewees; also that I needed to (3) define what I meant by a "framework" for research and (4) demarcate the boundaries of the study to ensure that it was manageable. I agreed with the latter two points, but believed that concepts could only be clearly defined and boundaries drawn once the research process brought more clarity about the focus and orientation of the study. I did not share the belief that a researcher could extract untainted truths from participants by applying correct procedures (Guba 1990:19); along with Schwandt (1990:273) I saw procedures of inquiry such as an interview as the construction of a contextually and socio-temporally bound truth by the researcher and the interviewee(s).

I successfully defended my original proposal, but the HHDC's response alerted me to ways through which academic institutions can promote (or otherwise) certain forms of knowledge production. This incident along the path of the research process became a source of information (data) to be drawn upon in the study (see eg. 5.7.3, 6.4.10).

As mentioned earlier, my literature search did not show up a suitable existing model for participatory research on priorities. To my knowledge the use of PR for a large-scale study with an orientation towards (albeit informal) policy development, has not been documented. Elden (1981:265) noted that "participative strategies rule out - or at least raise a serious question about - a role based on large scale, prepackaged standardized surveys" and that PR is most suitable to develop "local theory". It thus seemed that if a coherent framework for researching priorities emerged from this study, it would make a methodological contribution to the field. (In 7.1 I suggest that the conceptual framework of 'reflexivity' does provide a useful set of tools with which to engage with any research topic. A reflexive orientation, combined with a spiralling research design, would enable a researcher to develop and refine any chosen set of methods during the research process.)

3.2.4 The Research Sample

At the outset of the study, when the aim was to investigate research priorities for environmental education in southern Africa, I planned to involve as broad as possible a spectrum of parties with an interest in environmental education, be they 'users', 'practitioners' or funders of research. Journal entries from early planning stages noted the wish to select 'key respondents' (Marklund & Keeves 1988) through purposive sampling (Cohen & Manion 1985). These were to range from researchers in environment, development and education, funding agents and environmental journalists to teachers, educational policy makers and field- and community workers. These interviewees were also to represent as many geographical parts of the southern African region as possible. Selecting interviewees from such a broad range proved difficult. However, as the focus of the study shifted from a more 'applied' to a more theoretical orientation, the choice of interviewees and number of interviewees was clarified (See 3.7.2 and Table 3.3).

3.2.5 A Theoretical Frame for the Study

Difficult as the decisions about who to interview and how to structure the research were, an even more crucial decision was the theoretical perspective from which to view research priorities in environmental education. Although I had examined those aspects of the research context which I regarded as influential in the study (Chapter 2) I did not set up a particular theoretical frame within which to analyse and present data beforehand. Such a perspective was to develop, through engagement with the emerging substantive issues, themes and patterns, from the research itself. Working with such an emergent and "unarticulated framework" (Elden 1981:262) is difficult; it is easier to test hypotheses within frameworks, than to reflect upon those frameworks themselves as the research proceeds. Elden (*ibid*, pp.262-3) noted that "... participative researcher[s] ... must be open to deep (i.e. initially framework-less) learning himself [themselves]; he [they] cannot assume that his [their] framework will dominate or remain unchanged". However, the orientation outlined above *is* a particular theoretical perspective, if not a predetermined framework. It was clarified and advanced during the research process.

From the perspective of a participatory action research project the validity of the results of this study might best be judged on the following criteria:

- * *Justifications* for decisions (such as who to interview, which questions to ask, categories formulated during analysis)
- * *Logic, coherence and clarity* of the report, its explications and recommendations
- * *Acceptability* of the interpretations and outcomes of the study to active research participants.

From the perspective of a theoretical and reflective study, the rigour of the thesis should be judged on the clarity of the concepts employed and described, the consistency of the theoretical frame within which it is situated and the empirical grounding (Joubert 1992:167).

3.3 FIRST CYCLE OF ENQUIRY

3.3.1 The Planning Phase: Data Collection Techniques

Towards the end of 1991 I started a *database* (Janse van Rensburg & Irwin 1994) to record the research that had been done in the field in southern Africa. The decision to do this followed a search on the HSRC's database on research in the social sciences in South Africa, for entries relevant to environmental education, which revealed the latter data source as dated and incomplete. I started to encourage researchers, personally and by mail, to send details of their work to build a database at Rhodes University. I also encouraged them to use the database, which now has 100 entries on current and completed studies in environmental education in southern Africa. A colleague contributed substantially to the database through the literature review for his own research (Irwin 1993).

A second source of data was a *research journal* which I started to keep, with entries recording notes

from the planning phase of each cycle of enquiry, research-related problems I struggled with at the time, ideas on how to solve them, decisions taken and motivations for them, enlightening contributions from colleagues and texts I read, details of important conversations or meetings and perceived shifts in the orientation of the research. The journal proved an invaluable source of data, particularly on reasons for decisions taken and the shifts in orientation over the course of the three-year project.

The prime data collection technique was to be *semi-structured interviews with informants* from environmental education and related fields. I had used semi-structured interviews (Burroughs 1975) before (Janse van Rensburg 1991) and valued their flexibility. The interview schedule I used (shown in Table 3.1) gave the necessary guidance to ensure that all the relevant questions were covered in the sometimes lengthy and wide-ranging interviews, as well as the freedom to explore issues which seemed particularly important to the interviewee, or which were not anticipated when the schedule was drawn up.

INTERVIEW TOPIC: Research priorities for EE in southern Africa	
AREAS TO BE ADDRESSED IN INTERVIEW	
1.	Your personal approach to or view/model of environmental education (EE)
2.	Your view of the problem areas in EE in your own field elsewhere (more broadly)
3.	Can research play a role to address the above? Why/Why not?
4.	If no: is there a way in which research can change to become more meaningful?
	If yes: What kind of research?
	By whom?
	For whom?
	Which topics/fields should be researched?
	How? (methodology)
	Why? (paradigms)
5.	What is your professional context?

Table 3.1 The Schedule for Individual Semi-Structured Interviews

I always used the same interview schedule, but in later interviews I tended to leave out the question on research paradigms, for most respondents did not find this a particularly useful topic to explore (see 5.3). Also, I directed additional questions to interviewees who could clarify or expand on specific issues raised earlier in the study. In most interviews I also added, either at the start or the end, a question on the perceived value of this study and a request for recommendations on its design and execution. These questions were motivated by my desire to shape the research design in a participatory style. They yielded important results which either shaped the study design (see eg. 3.4.1, 3.4.2), or reflected participants' perceptions of priority research methods (these are drawn on throughout the following chapter, but also see 7.4.6). In all cases I started the interview with an explanation of the motivation for and aims of the study, the methodology and where appropriate, a summary of broad trends in results thus far.

The reasoning behind each of the scheduled interview items (Table 3.1) were as follows:

Question 1: I thought that data on participants' *views on environmental education* would add to and clarify the analysis of their perspectives on research in environmental education, which was the main focus of the study. This proved to be the case (see 4.3 and 4.4).

Question 2: I thought it would be difficult for most participants to start talking about research priorities from the start and wanted to provide them with a lead into this topic by focusing on what they saw as *problems in the field*, first in their own practice and then more broadly. This proved to be a useful approach, although it might of course have focused respondents' thinking on research in this context of 'problem' (4.3.3.2). Several participants noted that they did not have the broader perspective on environmental education-related problems from which to determine priorities, which was in itself an interesting observation.

Question 3: This question provided the link between Q.2 and Q.4. By probing for reasons I wanted to start exploring with interviewees their views on the role of research. In the majority of cases the answer was yes. In a minority of cases interviewees said that they had not thought about this before, but that they supposed research could play a role. I note these results here, because of the above-mentioned concern that the data collection tool discussed here may have strongly directed the responses on this particular topic. The majority of 'yes' responses could have meant that these interviewees, sensing that the notion of research was particularly important to me, the interviewer, and in an endeavour to provide me with what I wanted, expressed a merely temporary perception of research as having a role to play in addressing the problems which they listed. However, there were also respondents who qualified their responses by saying that current research is inadequate in solving practitioners' problems and that research would have to be practised differently in order to play that role. A more plausible interpretation thus seems to be that many interviewees had a strong belief in research as problem-solver. (See 4.3.3.3, 4.3.3.5 and 4.4.3).

Question 4: This question comprised a series of sub-questions and probes to cover a number of topics. It took Question 3 further and prompted discussions on the main focus of the interview, the

nature of and *topics* for research with priority status. I saw research *methodology* (including perspectives on research traditions and/or paradigms) as closely linked to the ideologies and epistemologies underpinning research (see Robottom 1993 and Harding 1987, quoted by Lather 1991:3). Thus methodology was not simply a technical issue (as some interviewees saw it) and warranted some discussion. The question on *who* should do research was to prompt discussion on whether interviewees viewed research as an enterprise for academics, experts and/or practitioners and whether they had any thoughts on broadening the research base, as seemed to be the trend internationally (see literature on PR cited in 3.2.2). The question on *whose benefit* research should be for was motivated by the critical concern with who purportedly and actually benefits from particular activities. (The data from the latter two questions are drawn on throughout the thesis, where relevant.)

Question 5: Information on the context within which the respondent worked was deemed important to contextualise responses. (See 3.7.2 and 4.2.3.)

Most interviewees received a copy of the schedule beforehand to inform them of the nature of the interview. Many of them appreciated this, and whereas some did not take the time to read the schedule, others used it to prepare lengthy notes from which to discuss the questions raised. (See 5.2 for an interpretation of some instances of the latter practice.)

Two aspects of this first planning phase might be noted. The first is that it was collaborative: I consulted not only my supervisor and other colleagues in the Department of Education at Rhodes University, but also academics with a background in Sociology and Philosophy and colleagues in environmental education, outside my own institution. Secondly, although the planning phase stretched over several months, I still did not feel adequately prepared at the end of it. Eventually I accepted the advice that I would never feel adequately prepared and that a time comes when one simply has to start collecting data. This was good counsel, for the refinement and re-orientation of the study which occurred during its course, would most probably not have taken place without the actual research experience and findings.

3.3.2 The Data Collection Phase: First Interviews

In March 1992 I conducted interviews with 10 informants from the 'mainstream' environmental education community. They worked in the Eastern Cape, where I live, and in Bophuthatswana⁴, Transvaal and Natal, three areas which I visited on a study tour (see Figure 2.2). Interviews were tape-recorded with the permission of participants, summarised in transcription and coded for anonymous reference. The codes (eg. A1, C3) were for my information only and readers need not

⁴ As explained in Chapter 2, Bophuthatswana was a 'homeland' territory in South Africa at the time of the study. This meant that unlike the rest of South Africa, its governmental conservation and education bodies were under the jurisdiction of black Africans. I wanted to include such a homeland area in the study, and Bophuthatswana was my choice, because at the time it was the homeland with the most active environmental education programmes (see Irwin 1993).

be concerned about interpreting them. I use these codes to protect the privacy of participants (see 3.7.2.1 for my motivation).

3.3.3 Reflection and Planning Phase

Transcribing and reading through interviews, I was struck by the amount of data generated by each interview, some of which lasted up to three hours. I summarised the results under the various headings of the interview schedule. From these summaries I drew out a number of themes including

- * participants' contention that and frequent reference to the notion that there are different 'schools of thought' in environmental education in South Africa, related to
- * a perceived gap and tension between "theorists" (a very small group) and "practitioners";
- * a perceived need for (research towards) the clarification of the concept of environmental education; and
- * the view (held by some but not all interviewees) that it was inappropriate to identify particular topics for research, but that areas for research, or particular kinds of research, could be regarded as priorities.

These themes (followed up in various parts of the thesis) were quite apparent to me, in the case of the first three because I had heard those views expressed before in environmental education circles and in the case of the latter because it related to the study itself. Apart from fairly prevalent (although not universally supported) themes, however, the data contained many disparate views which were difficult to reduce for analysis. I started by making a rather crude distinction between 'Priority Areas/Topics' and 'Guiding Principles', summarising the 10 interviewees' views, categorising and listing them under these two headings. These summaries (which represented a small percentage of the data which the interviews yielded) were used in the second data collection phase, described next. (The complete interviews were also analysed in later stages, from a more developed framework for interpretation, outlined in Figure 3.1.)

3.4 MOVING INTO THE SECOND CYCLE OF ENQUIRY

3.4.1 Sharing of Results and Data Collection: The EEASA 1992 Workshop

In July 1992 the Environmental Education Association of Southern Africa (EEASA) held its annual meeting and conference. During the conference I offered a workshop on Research Priorities. My aim was to involve the broader (albeit 'mainstream') environmental education community who attended this event, in the project.

In the first workshop I introduced the project and my agenda with the workshop, to start a second

phase of the project by engaging participants in the process of analysing the data from the first 10 interviews. Most participants came with different agendas and discussion of these yielded interesting data. However, five small discussion groups also spent time on analysing the two sets of data from Cycle 1.

The task of the groups working on 'Priority Areas/Topics' was first to categorise the 29 priorities for research listed under this heading and then to prioritise the categories. The small group which developed the most coherent set of categories, as judged by the whole group, extracted the following areas for research from the data:

1. Practice/Implementation of Environmental Education
2. Business/Industry and Funding
3. The Theory of Environmental Education
4. Communication
5. Culture and [Diverse] Perceptions (my addition)
6. Resources Development [teaching and learning materials]
7. Formal Education
8. Non-formal Education/NGO's [non-governmental organisations]
9. Teacher Training [participants' terminology]
10. Evaluation

This group decided, and others agreed with them, that it was

almost impossible ... to rank these categories ... because of the variations in context in which the research is conducted. They are all very closely related/inter-linked, but with varying degrees of importance in different situations.

(EEASA, quotation from written report-back)

The two small groups which worked on the second set of data categorised as 'Guiding Principles' had general discussions stimulated by the data and their own interests which brought them to the workshop. From these discussions and the general discussion between myself and participants which made up a follow-up focus group discussion, the following points were distilled:

1. The need to define what research is. In particular, does the term refer to academic forms of enquiry only?
2. The need for guidelines on how to research own practice
3. The need for support from expert researchers, for practitioners who want to do their own research
4. The need for an inventory of research reports in the country
5. The need to share or disseminate research results more adequately
6. The need for interaction with others during the research process

7. The need to give those who had participated in the research, feedback
8. The need for a forum where researchers could discuss their work with each other
9. A confirmation of the need to determine research priorities, who should be doing research, and what the most appropriate methodologies were, *but also*
- 10 The need to re-focus this study, not on proposing priorities as such, but on developing a framework within which researchers can work.

Some of these points will be followed up in later chapters, where other results which support and illuminate them are discussed. (References to results from the EEASA workshop and focus group discussion will be indicated by the code 'EEASA'.) Two of the above points had been dealt with during the study: Point 4 had been addressed by the establishment of a research database at Rhodes University. Point 8 was addressed by the establishment, at the Annual General Meeting following this workshop, of an EEASA Research Forum. (The latter has functioned on an informal basis only, but with more environmental educators in the region becoming involved in research and in more interactive research, particularly, this Forum should serve an important function in the near future.) Point 10 contributed to the refining of the focus of the study, as discussed below.

3.4.2 Reflection on the First Two Cycles: Decisions about Design and Focus

Reflection on the first 10 research interviews and the EEASA workshops refined the research design by providing the following three sets of perspectives. Firstly, the participatory orientation which I had taken to the study was strongly supported by several participants. One interviewee with an interest in policy development indicated that an attempt by any one person or institute to establish priorities for an entire region may either be resented as prescriptive or regarded as trivial because of a too narrow base (A1). Participants encouraged me to consult those outside of what some perceived as an 'inner circle' of environmental educators, such as black people (K3), trade unionists (A1) and, mentioned in later interviews, representatives of NGO's in the development field and human rights activists (S6). (Note that the existence of an inner circle of South African environmental educators, particularly one which did not include black people, was strongly contested by another interviewee, K2). There was also an opinion that policy and guidelines for research priorities should be directly informed by practitioners (P2). A related view expressed at the EEASA workshop was that a participatory approach would maximise the validity, credibility, relevance and accessibility of the research findings to stakeholders which, it was thought, ranged from academics to 'grassroots' environmental organisations.

Although the underpinnings of some of the views expressed here might be questioned (see 3.7.2.1 and 7.5) they did reflect a widespread concern for broad representation and participation in the study.

Secondly, participants in the EEASA workshop and focus group discussions confirmed that the study should include an exploration of participants' approaches to environmental education *per se*, and to research. This was based on the view expressed at the workshop that perceived research priorities

are likely to be influenced by perceptions of the nature of environmental education and the nature and role of research (a contention followed through in 4.3 and 4.4). A question on environmental education was already included in the interview schedule. The workshop also highlighted the importance of clarifying the term 'research' and that not everyone interpreted it in the same way. I decided against using a question such as "What is your definition of research?" in interviews, thinking that I would rather gather perspectives on interviewees' interpretations of the concept throughout the interview conversation. As it turned out, this question was sometimes raised by interviewees themselves, at which point a discussion on the matter would ensue (see 4.3.2.1).

Thirdly, in both the interviews and at the workshop there were divided opinions on the appropriateness of establishing research priorities. The majority of interviewees indicated that a set of priorities in the form of research *topics* would not be useful, *inter alia* because they thought that research needs should be identified by practitioners within particular contexts (see 4.4.3). On the other hand, most interviewees supported the idea of identifying particular *approaches* to and *areas* of research which they regarded as more appropriate than others. Another opinion on this topic was that whereas research priorities should be identified in practice 'on the ground', they should also be seen within a broader *framework* of national priorities (A1). Finally, a workshop participant said that he interpreted the title 'Research Priorities in Environmental Education in Southern Africa' as referring to a judgemental study to construct a list of priorities which would leave those whose research topics had not been listed, thinking that their work was deemed worthless.

To portray a judgemental orientation was certainly counter-productive and when others agreed that the title could be interpreted as such, it was decided at the workshop to change the research topic to 'A Framework for Research Priorities in Environmental Education in Southern Africa'. Thus the opinions and interpretations of participants in the first two cycles of the study led me to see the value of this study as that of developing a framework outlining guidelines for appropriate research decisions, within the southern African context, rather than a set of priority research topics or even areas.

3.5 THIRD CYCLE OF ENQUIRY

3.5.1 Data Collection in Second Half of 1992

The analysis and reflection at the end of the EEASA workshop were followed by another phase of data collection between August and November 1991, in which I interviewed 12 more participants, from Namibia and the Western Cape.

By this stage of the study I had also received feedback on a number of the interview transcripts which I had started to circulate to individual interviewees. These were detailed summaries of interviews rather than verbatim transcripts and the aim of circulating them was to ask (1) for comment on my interpretation of what they had said, (2) for clarification of points which I might have missed or misunderstood and (3) whether they wanted to add or change anything. This aim was again linked to the participatory orientation of the study.

Six interviewees (from both cycles 1 and 2) responded. Some of them simply agreed with my interpretation and had nothing to add. Others expanded views which they thought we had not covered adequately in the interviews, providing written data for analysis. Feedback was particularly useful when interviewees tried to clarify aspects of their interview which appeared ambiguous. Those who had received interview transcripts but did not respond, reported a lack of time as reason for their failure to do so.

Another form of written data linked to the interviews was documentation provided by interviewees for my information. In some cases the materials described their work settings, the policies of their organisation, or their research, or the research of organisations that they used to work for or individuals they knew about, which they thought I might be interested in. In other cases they thought that documents, including preparations for staff development sessions, models for presentations, articles and funding proposals they had written, spelled out their perspectives on certain interview areas more clearly. These materials were analysed towards the end of the study, when an in-depth analysis of each interview was conducted.

3.5.2 Reflection Phase

The Western Cape and Namibian interviews yielded a wealth of data. Two areas of particular relevance to the study itself emerged:

- * Opposing views on the research method: Some interviewees again expressed support for a participatory project, by proposing that it presents a move away from the idea of an expert developing knowledge (L4) and by referring to the value of coming to new insights through collaboration and dialogue (L5). Others questioned the open nature of the interviews (L2) and the "non-scientific" methodology (L2, also L3). I understood, but disagreed with the latter views and hence did not alter the methodology accordingly⁵.
- * Views on the institutional rationale of the study: Two respondents (A2, L2) expressed the opinion that the project was motivated by Rhodes University's institutional aims, to establish itself as a centre of excellence in environmental education and to develop a niche for its researchers (that is, myself). I had been unaware of this dimension of the project until it was raised and found it an important issue to reflect on, particularly in the light of an emerging focus on power, knowledge and the role of institutions (see 5.7.3 and 6.4, particularly 6.4.11, and Janse van Rensburg 1992 which is included here as Appendix 1).

⁵ I support the view that *science* is not merely that enterprise based on a positivist epistemology, but a systematic questioning of, in this case, social affairs "that relates theoretical considerations to empirical phenomena" (Popkewitz 1991:218).

3.5.3 Sharing of Results

In December 1992 I wrote a research report on the first year of the project. This document (Janse van Rensburg 1992, Appendix 1) described the project and results under a number of headings which included 'Emerging issues in academic research in southern Africa'. This topic resulted from reflection on my experiences during 1992, in doing and supervising academic research and working with others who were involved in the same field. Two issues viz. the question of what counts as good research at the Master's level in a southern African university, and the transition between positivist and non-positivist thinking seemed particularly important. These issues are referred to at various points in the thesis.

I circulated the research report among 44 environmental educators in South Africa and Namibia, asking for feedback. This was an attempt at increasing the range and number of people making a significant input into the study. I described the results in a fairly 'raw' form, refraining from analysing it to such an extent that readers would not be able to construct their own sense from the data itself. Responses were generally disappointing, however. Only 10 people responded, a number of them simply to wish me well with the project, or to support some of the viewpoints described. Ensuing discussions (eg. with A2, K3) revealed that readers would have found it easier to interact with the document if it had been more succinct and in fact, already analysed to a greater extent. When I noted that I thought readers' participation would be more significant if they could see the un-reduced data, the point was made that others were not as involved in the project as I was and often lacked the time to spend working through the data to contribute to its analysis. This contributed to my developing understanding of the nature of participatory research designs in action (referred to again in 7.5).

In a few cases the feedback on the research report did prove useful. Among those who responded to the document were several people who had not been part of the study before. On the basis of their feedback two of them were interviewed, and in a third case the interview was structured entirely around comment on the report. This meant that I was not only collecting 'first-order' data in the project, but also views on the views which had been raised by other participants. From this stemmed a sense that a larger group of people was working collaboratively on developing insights on research in environmental education in southern Africa.

In general, however, the circulation of the research report did not serve as useful a purpose in the participatory project as I had hoped it would. In order to refine my own thinking and elicit more specific feedback on some of the themes which I started to identify in the data, I wrote and circulated a discussion document entitled 'Towards Reflective Research' (Appendix 2). The substantive issues which stood out from the research results at that time included:

- * the nature of academic research in a changing South Africa, particularly at the Masters level (related discussions can be found in 5.7, 6.4 and 7.4.4, see also the original discussion document in Appendix 2);

- * power issues in research, related to the possibilities for control of research methods, agendas and processes, by senior academics, non-Africans and funding bodies (see 5.7.3 and 6.4); and
- * ambiguities or inconsistencies in the discourse of several interviews, or between the interview discourse⁶ and the practice of the interviewee (3.7.3, 4.2.3, 4.5, 6.3).

Several people responded with very meaningful contributions to this paper, which focused on the first two of these issues. For example, two other teachers of research in post-graduate courses reported similar experiences and endorsed my interpretations of the data. In these cases respondents did take the time to read and respond to the paper. The greater participation might have been due to the different format of the document, but also because of a greater commitment to the investigation of a shared interest. In Elden's (1981:266) observation, PR "requires that people have the will and the resources to participate" and it is likely that some of those who did not respond to the research report, were not inclined or able to do so. This is clearly an important consideration in the planning of PR projects.

3.6 FOURTH CYCLE OF ENQUIRY

3.6.1 Data Collection Phase: Interviews in the First Half of 1993

In January 1993 I travelled to Zimbabwe to attend a meeting of environmental educators from around southern Africa, seven of whom I interviewed. Some of the interviews and particularly the meeting itself highlighted the issue of research in Africa being funded and driven by non-Africans. This issue, which had first been raised by interviewees in Namibia, is taken up in 5.7.3 and 6.1.4.2. In the remainder of that period I conducted what turned out to be the final interviews of the study (four in Transvaal, three in Natal and one in the Eastern Cape) to bring the total to 38 semi-structured interviews over the three-year period of the study.

3.7 MOVING INTO THE FIFTH CYCLE OF ENQUIRY

3.7.1 Reflection, Sharing and Data Collection: SAWMA Workshop

The Southern African Wildlife Management Association (SAWMA) invited me and a colleague to do a half-day workshop during a symposium on biodiversity in southern Africa in June 1993. I saw this as an opportunity to consolidate some of the data I had collected thus far for sharing with a wider audience, as well as to investigate perspectives of wildlife managers and researchers in the bio-physical sciences, on priorities for research in environmental education.

⁶ In reference to interviewees' discourse, the term *discourse* is used in a linguistic sense to refer to "extended samples of either spoken or written language" (Fairclough 1990:3). Following Cherryholmes (1988:1-3) I distinguish discourse from practice, although the term is elsewhere in the literature also used to include actions.

Table 3.2 Worksheet, SAWMA Workshop (Note: More space was available to report)

SYMPOSIUM, 30 June 1993, 10h20-13h15 RESEARCH IN BIODIVERSITY AND ENVIRONMENTAL EDUCATION: ISSUES OF RELEVANCE AND METHODOLOGY IN A CHANGING CONTEXT <u>WORKSHOP QUESTIONS</u>	
Workshop 1: (Each group to appoint a facilitator, a scribe and a rapporteur.) From the perspective of your own practice, please discuss the following: <i>"What do you regard as research priorities for environmental education?"</i> You may look at both broad areas and specific topics, as deemed appropriate. <u>Provide some rationale</u> for the priorities you identify. Please summarise your findings on the sheet provided and be prepared to report back your group's position. All reports will be collated and distributed to participants after the symposium. Research Priorities for Environmental Education: Perspectives of wildlife managers and researchers	
GROUP NO.:	SCRIBE:
<u>Broad Areas & Rationale</u> 	
<u>Specific Topics & Rationale</u> 	

Our programme involved about 100 participants from such contexts. It included four short presentations on research and environmental education in South Africa. In one of these I presented results of the study, highlighting the range of perspectives on priority topics, areas and styles in environmental education research in the results. We also held two workshops, in one of which I asked participants to discuss their views on what the research priorities in environmental education were.

Working in 10 discussion groups, participants recorded their priority topics or areas for research on prepared worksheets (see Table 3.2). I analysed these lists of topics and areas by searching for both common trends and un-common views in the data and employing discourse analysis (Fairclough 1992). Quotations from the completed worksheets, used throughout the study, are indicated by the code 'SAWMA'.

A comment made at the workshop should be mentioned here for it dealt with the research methodology. One scientist wanted to know how I could use the data collected in the workshop for research purposes, when participants had recorded their own opinions *after* I had already reported on the earlier results of the study. By that stage they would be biased by my presentation, he thought. This comment provided a strong contrast between positivist and non-positivist approaches to research methods. On the one hand there was the scientist's view that research respondents should be kept in a 'neutral' or 'uninformed' state until one can extract their 'unbiased' opinions. On the other hand there were my own efforts to encourage research participants to engage with each other, myself and those others who had already made an input into the research, to work collaboratively on generating new understandings of research priorities!

3.7.2 Sharing of Results, Further Reflection and Planning

The results from the SAWMA workshop were shared with the members of that organisation through an article in their newsletter (Janse van Rensburg 1993a) with an invitation for further engagement on the topic. These results were also used extensively in a paper written later that year (Janse van Rensburg 1994).

A significant opportunity for reflection and planning in this period was my attendance at a summer school session on Theory and Research in Environmental Education, presented by Prof. Ian Robottom of Deakin University, Australia, at the University of British Columbia. This course with an internationally acclaimed scholar in the field provided an invaluable perspective on international trends in research in environmental education, within which to contextualise trends in southern Africa.

A primary purpose of attending the course was to develop insights to direct my data analysis. Beforehand I therefore collated and ordered the extensive data and research records that had by then accumulated, as well as preliminary analyses and documents. I joined the course with a number of questions related to the research design and analysis, and very productive discussions helped me to clarify future directions. These decisions are discussed below.

3.7.2.1 *Decision about number and range of interviewees*

A first concern was the tension between the mass of data already collected, and my desire to interview a broader range of people. How did one decide when to stop collecting data? Robottom (pers. comm., July 1993) verified the existence of a tension between the need for completeness in coverage and the need to share contemporary as opposed to dated research insights. Given that I already had more data than I could adequately deal with in one thesis, future interviews would need to focus very specifically on those issues I had chosen for in-depth discussion. That meant that if I wanted a particular respondent's perspective on a specific issue, I could interview her by phone. I thus decided to schedule no more than the 38 interviews which had been conducted at that time, before commencing with the data analysis. It turned out that no extra interviews were necessary (except for clarifying conversations), due to the breadth of perspectives covered by the existing data.

Table 3.3: Professional Contexts of Interviewees

CONTEXT	No. of Interviewees
Conservation agencies	14
Government environment departments	3
Government education departments	3
Environmental education centres	5
Technikons	1
Colleges for teacher education	1
Predominantly English-speaking universities	6
Predominantly Afrikaans-speaking universities	2
University social science departments	5
University natural science departments	2
Social science institutes	1
Natural science institutes	2
Educational resource development	4
Community-based/Development organisations	5
Funding agencies	2

Note: Some of the 38 interviewees have been listed more than once, because their work encompassed more than one of the contexts listed.

This decision was not made lightly, for many participants had cautioned me to 'access the voices' of as wide a range of people as possible, particularly those who had historically been viewed as 'marginal' in relation to mainstream environmental educators, particularly in South Africa. However, as the study progressed I became aware of the links between participants' professional positions and their professed views on the matters we were discussing. I came to question the notion of a particular individual and decontextualised 'voice'. Now and then, while interviewing a black woman from Lesotho, I heard the 'voice' of a teacher from a British university running courses for foreign students; analysing the discourse of a young black man who worked for a development NGO in Namibia, I could easily imagine being at a conference of white scholars in critical theory. These observations contributed to a growing clarification of participatory research, particularly in the context of this study (see 7.5), which supported my decision about the number and range of interviewees. Interviewees' professional contexts are listed in Table 3.3.

3.7.2.2 *Decisions about data analysis*

A second issue for discussion during the summer school course was data analysis. In the first half of the analysis, which had been completed by the time of the course, I had summarised responses to the questions about research priorities (topics, methods & paradigms, researchers and beneficiaries of research), utilising interview and workshop data (Coding 1, Fig. 3.1).

Using these summaries, I noted the patterns in the data as well as instances which counteracted the patterns (inconsistencies). Through a second coding of interview and workshop data (Fig.3.) I identified emerging themes such as the control of research agendas and the contestation of positivist and post-positivist approaches to research (introduced in the first research report, Appendix 1).

During the course I commenced with the second half of the data analysis. This involved drawing up a table (not included here) to summarise each interviewee's (1) context, (2) approach to environmental education (including views on problem areas in the field) and (3) views on the role of research. I found that (4) views on the role of change appeared as an important dimension of views on environmental education and research and hence did a third coding (Fig. 3.1) to search the data for participants' views on change. These were added to the table.

In reflection on this summary of a large part of the data, Robottom (pers. comm. 1993) recommended that I map out interviewees' responses on the various 'dimensions' (i.e. research, change, environmental education) in theoretically significant categories, showing links not only between views in particular clusters, but also the "stronger rather than weaker links" between sets of views on environmental education, research and change, respectively. I saw the value of such a broad, synthesising description of the situation I was studying⁷, but was also concerned that focusing on links and consistent patterns would mask those

⁷ An argument for the clarifying value of mapping out approaches to environmental education in the region had previously been put forward by O'Donoghue (1993).

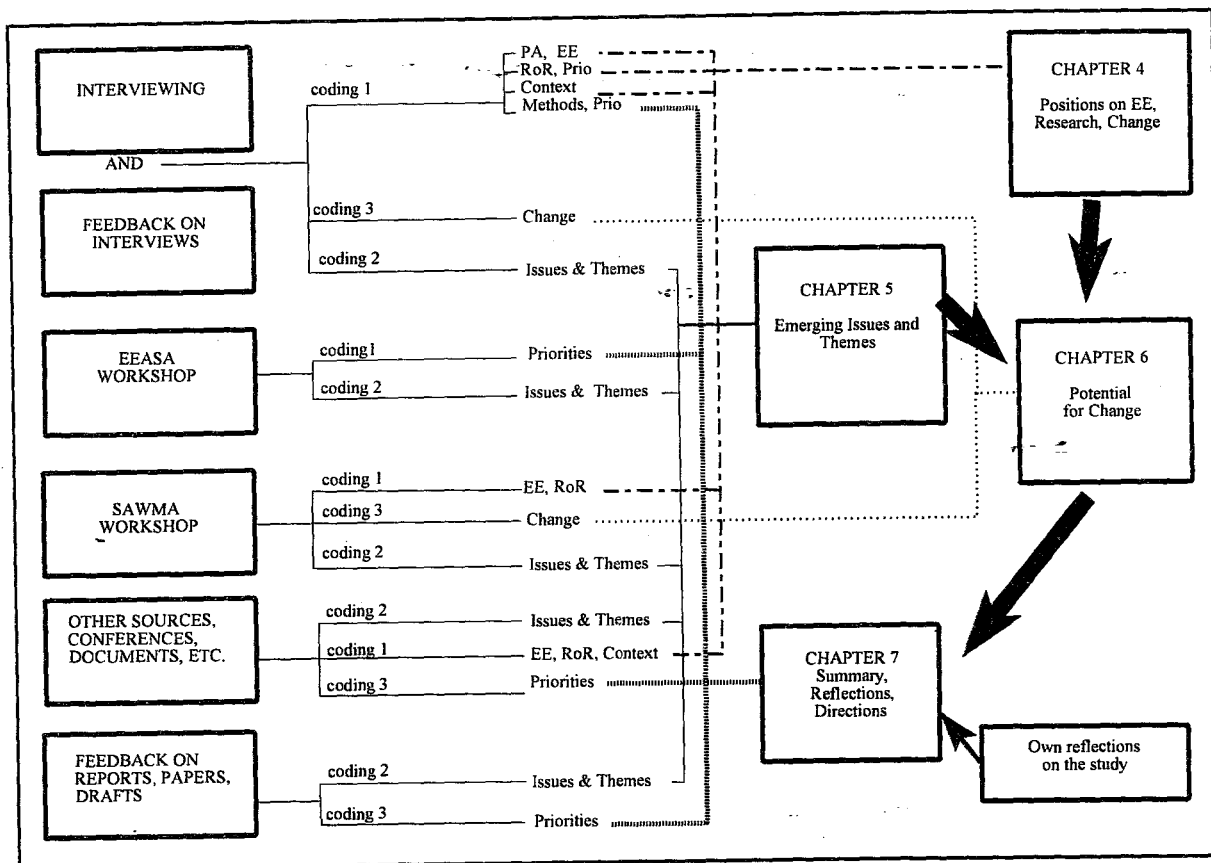


Fig. 3.1 Outline of Data Analysis

ambiguities or inconsistencies⁸ in interview data which became increasingly obvious as I studied the data.

I referred back to an early journal entry of 12/07/93 where I had reminded myself that

At the time of the interview transcriptions, I was struck by *ambiguities* (differences between rhetoric and practice, or in the discourse of one interview, eg. S4). This has to be used and/or reflected in the analysis.

I did not want to create the impression of an unbroken pattern outside of or above the tensions and ambiguities. The result was a decision that, while clustering like individual views I would also highlight inconsistencies within those individual's views. One discussion was concluded with the hypothesis that in southern Africa, where change was so much at the forefront (Robottom introduced the term "institutionalised social change") there would be a range of different views and actions, but also inconsistencies between and within these views and actions, that might indicate processes of movement, change or simply fluctuation, between different 'paradigms' and discourses. One of my earliest decisions during the study was the need to reflect what I perceived as the "straddling of paradigms" evidenced by several interviewees. (This idea is followed up in 4.3.2.3, 4.4.3.5, 5.3 and 6.3).

⁸ I use the terms inconsistencies and ambiguities to refer to *contradictions* within an interviewee's discourse or between the discourse and observed or reported practice. In my usage *ambiguities* are more glaringly contradictory than *inconsistencies*.

Robottom had also recommended the use of a few in-depth case studies as exemplars to illustrate specific positions. This did however not seem feasible. I thought that most of those research participants who would provide good case examples would probably not agree to be discussed as such, even anonymously, particularly if they were exemplars of inconsistent or ambiguous positions. The reasons which I would offer for this opinion is the defensiveness about their views which several participants communicated during interviews. This unease represented an important research finding, to be referred to again in 6.3.2.3. It underpinned my decision to preserve participants' privacy as much as possible in representing the data.

As I proceeded to map out different positions in tabular form (the 'line drawings' of aspects of the landscape, see 1.3), I became aware of the problems inherent in such a strategy to structure and produce new knowledge. Firstly, while there was a need to reduce the data for purposes of analysis and while the table provided a useful entry into interviews, I was concerned about how much richness I seemed to lose from the interviews as I summarised them for the table. My concern was not so much about losing detail, but about losing important qualitative features of the data, notably contradictions and complexities.

Secondly, I noted that the tabulation of data easily falls prey to the issues of representation and reification and the limitations of structuralism, touched on by Bourdieu's discussion of "the synoptic illusion" (Jenkins 1992:56-59). *Synoptic illusion* refers to distortions in the reflection of a research situation caused by the practice of simplifying and condensing complex information into a unified frame of reference. Examples are the creation of 'artifactual' links between events and a tendency to favour 'official accounts'. Lather (1990:2) also describes the 'homogenisation' and 'marginalisation' which result from the tabulation of research findings.

Section 4.2.3 also deals with reflections on the description of patterns and contradictions in the data. My awareness of the limitations and trappings of this strategy of presenting/ constructing knowledge is related to and reflects a shift in my theoretical vantage point to that of a reflexive position (see below).

3.7.2.3 *Decisions on the theoretical orientation of the study*

A third aspect of the reflective phase offered by the summer school session was a clarification of my theoretical position on

- * environmental education (as a process of and focus for social change, emerging in response to environmental issues with roots in historical and current social, political and economic structures) and on
- * research, as a process of enquiry based on socially-constructed principles consistent with a particular epistemology and ideology.

I came to see that, given the emphasis on a situation of change and perceived needs for change, the

data analysis was to be informed by a critical, more than an interpretative, perspective (See Guba 1990, Goodman 1992, Lather 1991 for descriptions of these research traditions). A critical⁹ perspective would take into account institutions as societal structures and contexts, and the relation between power and knowledge. This decision was motivated by the greater focus of critical research on changes in the *status quo* (Gibson 1986, Lather 1991). During the course of the study I started to question the 'grand theory' of emancipation through enlightenment in critical theories, and began to see the value of social theories and discourses which drew on postmodern and post-structural perspectives (Lather 1991, Dougherty 1993, Cherryholmes 1988, Popkewitz 1991). These vantage points emphasise the social construction of knowledge as they reveal political economies and epistemologies. Reflections on this research and its own institutional setting was to become an important source of data.

Consistent with the shift towards reflexivity was Robottom's recommendation that the study would be of most value from a theoretical or meta-research orientation, rather than an 'applied' or instrumental orientation (see also Robottom & Hart 1993). Accordingly, the topic of the study was revised again, from the instrumentally-oriented '(Towards the Development of) a Framework for Research Priorities in Environmental Education in Southern Africa' to the more theoretically oriented '(Exploring) Perspectives in Research in Environmental Education in Southern Africa'.

3.7.3 Further Reflection and Sharing of Results

With the above perspective to orientate me I returned to South Africa and continued the data analysis as outlined in Figure 3.1. The results from the data analysis on perspectives on environmental education, research and change, together with the results of the SAWMA workshop, were used to prepare a paper for an HSRC conference on Global Change and Social Transformation (see Janse van Rensburg 1994) in November 1993. That paper then formed the basis for Chapter 4, in the formal writing of the thesis which started in December 1993 and took 13 months to complete. Data analysis continued throughout this period, as the interacting processes of writing, inviting comment from participants and re-engaging with the literature deepened, contradicted, frustrated and refined my insights.

3.8 CONCLUDING COMMENTS

3.8.1 Overlapping Nature of Research Phases and Cycles

To conclude this chapter I would like to highlight a number of points elaborating on the above

⁹ The term *critical* as used in contemporary social and educational theory, refers to an orientation which focuses on relations of power and ideology and their role in constructing identities, social relations and systems of knowledge and belief, which are not usually apparent (Fairclough 1992:12). Popkewitz (1990:48) refers to "skepticism toward social institutions and a conception of reality that ties ideas, thought, and language to social and historical conditions. *Critical* ... considers the conditions of social regulation, unequal distribution, and power".

description of the research. The first is the overlapping nature of the phases within cycles and of the cycles themselves. Reflection on one cycle became the planning for the next cycle, and sharing one cycle's results coincided with data collection for the next cycle. This confirms Tripp's (1990:160) description of the "moments" of the cycles of action research:

the common representation of the action research cycle ... does not adequately allow for the inevitably more complex nature of the cycle as it actually proceeds in practice in a particular instance. One of the complications concealed by a simple account of the action research cycle is the fact that the different moments contain aspects of all the other moments within themselves.

3.8.2 Data Sources

A second concluding point relates to the data sources utilised. In summary, the *formal* data sources were:

1. Semi-structured research interviews of longer or shorter duration, based on the interview schedule (Table 3.1), 36, and using the discussion document and basis, 2.
2. Written material collected during or after interviews, related to interviewees' or others' work/organisation or perspectives
3. Feedback on interview summaries, from six interviewees
4. Feedback on research documents from nine participants
5. Data from EEASA workshop & focus group discussion, involving about 30 participants (sets of priority categories & a summary of themes from discussions)
6. Data from SAWMA workshop (worksheets on priority topics from 10 groups of about 15 participants each)
7. Research journal with notes on decisions and discussions, for example discussions on the design of the project
8. Database with almost 100 entries (environmental education-related research projects in South Africa, listing researcher, topic, fields and sometimes method and summary of project). The database gives an overview of the kinds of research and research questions favoured in the recent past in South Africa; it illustrates, for example, an absence of theoretical research.

There were, however, also many *informal* or unplanned sources of data. Some informal conversations and meetings attended for purposes other than research were particularly useful. I thought there was a need to delineate the boundaries between instances when I was collecting data for research and when I was not, but after discussions with a research participant I abandoned the idea. This was an important decision influencing my approach to the study. It meant that I could fully explore and develop insights which originated in discussions, meetings and conversations which were not started explicitly to gather research data. It also meant that I could start many more discussions, on a more informal basis, to talk through issues arising from and impinging on the study. However,

I needed clarity on the issue of rigour when using informal or unplanned sources of data. What was the validity of insights developed during everyday working situations?

Drawing on Ely *et al.* (1991) and discussions with participants I resolved the problem of rigorous data collection in situations which were not 'designed' for that purpose, as follows¹⁰.

The difference between an interview set up with the specific aim to collect data for the study and a conversation with a colleague while we are driving to a workshop, lay not in the situation so much, as in how it was approached. Participants in a research interview may or may not be committed to grapple with the issues involved as sincerely as possible, but there was a fair chance that they would be. This may - however also be the case with participants in any other conversation. I draw conclusions from research interviews by looking for clues for such sincerity or otherwise and trying to understand the other party's words in the light of his/her context and the context of our conversation. These are social and personal skills of communication and understanding, as much as research skills. Such skills develop through constant reflection on one's interpretations, both personally and collaboratively with others, including interviewees. I often apply the same reflection to everyday situations from which I want to learn, albeit perhaps with less intellectual effort and commitment to clear understanding. The lesson to learn was to indeed apply the same intellectual effort and commitment to other conversations and discussions which could inform the study, in order to develop the best possible insights into situations.

A second issue which this methodological decision uncovered was the extent to which interview data became 'common property' in a participatory project. Outside the research context, if I wanted to clarify an incident or comment from a meeting or workshop, I often discussed my interpretation of such an event with other colleagues. This has been one of the best ways in which to learn about environmental education in the region. A discussion about a discussion with someone else elicited further and often significant information about the context in which the original discussion took place, helped me to uncover misinterpretations and confirm shared interpretations, and to uncover misinterpretations or false representations on the part of the person with whom I had the first discussion. Of course I had to bear in mind that the other party in the second discussion would also be speaking from a particular perspective and that her aim may not necessarily be the clarification of issues. However, it can be seen as a form of triangulation (Ely *et al.* 1991:96-99) and a useful tool to increase inter-subjectivity (Ely *et al.* 1991).

To what extent could I however use this same method of triangulation and discuss issues arising from a more (or less) formal research interview with one research participant, with other research participants? Comments made in confidence should obviously be treated as such by researchers, throughout and upon completion of the research process. However, many interviewees stated either implicitly (eg. by not minding the temporary presence of others during the interview) or explicitly (eg. by saying 'And I don't mind if [X] hears this' or 'I would be glad if you could mention this to them ...' or 'I don't mind saying this, it will soon be public knowledge ...') that I did not need to

¹⁰ Extract from research journal. January 1993.

view the interview (or at least parts of it) as confidential. When interviewees were sharing sensitive information or opinions they also tended to clearly state so (eg. 'I think you'd better turn this [audio recorder] off now ...'; 'I should not be quoted on this' or 'This is confidential'). There were however many grey areas where I wondered whether people would mind my sharing their views more widely than the interview or not. It posed an ethical dilemma which obviously arises in PR projects. On the one hand I did not want to abuse interviewees' trust in my judgement and I knew that some of the points raised in their interviews could place them in a difficult position if communicated as such. On the other hand I placed great store by the validation of my interpretations of issues with colleagues whose knowledge of the environmental education arena in southern Africa I valued. Within the interpretative orientation from which I worked during the early parts of the study, I also regarded the aim of this project as the co-construction of a framework for research (see 4.4.3); I thus valued the interaction between various ideas. In the end my decision was to focus on interaction and discussion with as many people as possible, but only if the aim was greater clarity - and not if it was to spread gossip! This might again be seen as a principle to underpin all one's professional life, and not just research¹¹.

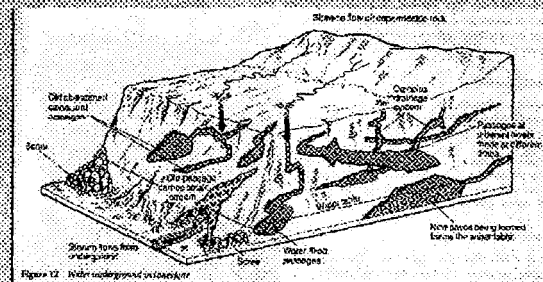
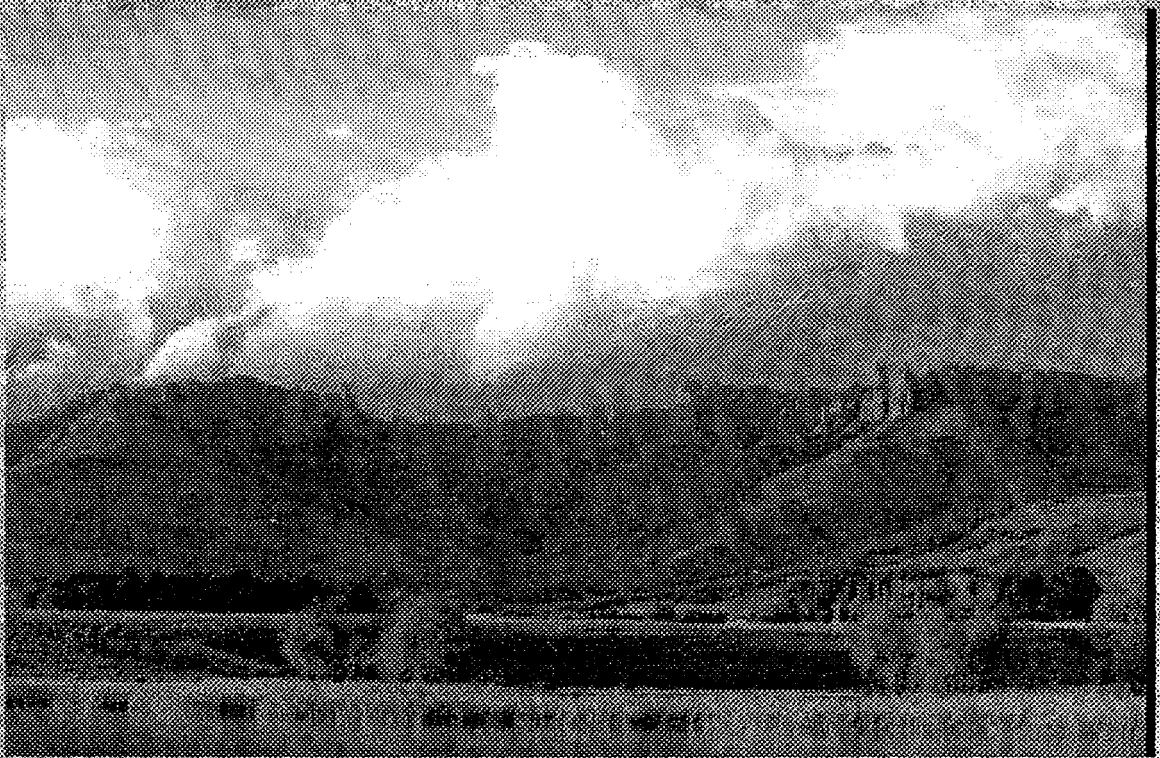
3.8.3 Presentation of Data

With respect to the following chapters, a number of points about the presentation of data will be useful. First, it should be noted that quotations and examples are used to illustrate points and describe aspects of the situation; they are not exhaustive and the interviewees quoted might not be the only ones who mentioned a particular view. Since I did not attempt to establish the prevalence of different views in the region, nor to determine priorities on the basis of majority opinion, I was not as a rule concerned about the frequency with which views were expressed.

The use of codes to refer to participants, prudent and limited usage of quotations and descriptions, the limited number of detailed case studies and references to context can all be traced to the need to maintain the anonymity of participants. Although this may seem at odds with both the transparency I aim for in the thesis and the participatory orientation of the study, it was motivated by the sensitivities revealed by the discourse and manner of several interviewees (see 6.3.2.3).

To indicate direct quotations from research participants or documents and working titles of documents, I have used double inverted commas. Single inverted commas indicate a paraphrase, a translation from Afrikaans, a contentious expression or a label or title given by me.

¹¹ These and other considerations revealed a point which ran throughout the study, namely that the boundaries between my research, my other work and the rest of my life were not as defined as conventional orientations with compartmentalised perspectives on professional life and research would have it.



CHAPTER 4

ORIENTATIONS TO RESEARCH IN/AND ENVIRONMENTAL EDUCATION

there are dunes of motion,
organizations of grass, ...
but the Overall is beyond me:

... in nature there are few sharp lines ...
(Adapted from Ammon, in Spanos, 1987)

Research perspectives represent different ideologies of environmental education and deeply held, often unquestioned, assumptions about what is right (Robottom & Hart 1993:597).

4.1 INTRODUCTION

Chapter 3 has introduced the research process and decisions about and results pertaining to the design of the study itself. As such it was analogous to a description of a journey through a landscape and of the decisions about the routes to take, which were influenced by the unfolding landscape itself.

Chapter 4 describes aspects of this emerging landscape with an even stronger focus on results. Here I map out a range of positions on or orientations to environmental education, research and research in environmental education (research in/and environmental education; see 1.1). This is done by drawing primarily on the results to the questions 'What is your view of environmental education?', 'What are the problem areas in environmental education from your perspective?', 'What is the role of research?' and 'What are the research priorities for environmental education?'. (See Table 3.1 Chapter 3 for the exact wording of the questions on the Interview Schedule and Fig. 3.1 for a schematic outline of the analysis).

The views which individuals expressed in response to these interview questions, together with other relevant comments, formed the substance for the *positions* I delineated. I use the term 'positions' to indicate clusters of related views on the concept(s) environmental education in/and research.

By ascribing a position to a research participant's views I map or locate those views on a landscape in relation to other participants' views, and to positions described in the international literature. The term reflects not only a relative location, but also an action on the part of the research participants, their 'positioning' or taking of a certain stand on and stance towards the topics discussed. These reflected a certain 'disposition'. The positions described are thus also *orientations* which both consisted of and influenced participants' perspectives on and responses to issues in this study.

Studying statements pertaining to research, particularly research priorities, was my central undertaking; views on environmental education were explored only to inform better understanding of views on research priorities (see 3.3.1). Thus this chapter reports fewer of the results on the concept environmental education *per se*, than of the results on research. In the descriptions of the various positions, views on environmental education and research are treated together, even if the interview schedule and participants treated them as separate ideas, for views on the separate concepts seemed to share underpinnings, including common perspectives on the concept of change (see the quote from Robottom & Hart 1993 above, and 4.4.1 and 6.2.1).

The chapter describes (in 4.4) three positions and a perspective (4.4.4) on research in/and environmental education. It also describes the results from which the positions or orientations were constructed (4.3), outlines the process through which they were constructed (4.2.1), explains why it was useful to map out these positions (4.2.2) and cautions that they should not be seen as fixed and discrete categories (4.2.3).

4.2 THE ANALYSIS

4.2.1 Introduction to the Analysis

The analysis of the data reported here spanned 12 months. The data utilised were collected in individual interviews, the EEASA and SAWMA workshops, focus group discussions, meetings and conferences; as well as in various documents (see 3.5.1, 3.8.2). The bulk of data utilised for this analysis were however the 38 interview transcripts and the SAWMA workshop reports. The analysis involved several readings of transcripts and other texts. Transcripts were coded for direct answers to questions from the interview schedule and workshop worksheets ('coding 1' in Fig. 3.1); for example 'EE' for data which reflected a participant's views on environmental education, 'RoR' for views on the role of research, 'Pr' for lists of research priorities, and so on.

The coded responses from individual interviews or workshop reports were summarised in the form of quotes, paraphrasings and brief interpretations and transferred to an 'analysis table'. This table listed views on environmental education, research, change and the participants' professional contexts. It is not included in the thesis, because of its size and a decision to protect the anonymity of respondents (3.7.2, 6.3.2.3).

A study of this table, by means of discourse analysis¹, revealed a pattern of related views between

¹ 'Discourse analysis' was the main tool for interpreting the data in this study. As a technique discourse analysis can be used in many different ways, depending on the theoretical framework of the researcher (see Fairclough 1992:12-36 for an overview). I applied it in a manner consistent with the shifting and emerging theoretical vantage point outlined in Chapter 3. This meant that I interpreted data at three inter-related levels (see Fairclough 1992:4, 231). (1) I interpreted transcripts and other records of discourse (interviews, public statements and workshops) as texts at a micro-level (focusing for example on emerging themes, the choice of metaphor and key words of particular significance; see Fairclough 1992:234-7). (2) In line with the critically reflexive framework of the study I also

individual participants. For example, SAWMA participants' view that environmental education should 'transfer' 'environmental messages' to change 'levels of awareness' was similar to P3's view that environmental educators should use 'scientific' advertising principles to change 'mindsets'; both reflect a technicist orientation to education. Such related views on environmental education are presented in Table 4.1².

4.2.2 Mapping out Positions - Its Value

Summarising the data in the presentation tables was valuable in that it reduced the results sufficiently to enable me to describe patterns - clusters³ of views which seemed to share underlying assumptions - in the emerging 'landscape' of results. This allows one to make sense of and comment on patterns of orientations in a complex situation. By looking at the relations between the different positions I was able to search for trends, for example, and to explore the relative potential of the various positions (discussed in Chapter 6, especially 6.2).

In the process of data reduction and analysis care needs to be taken to conserve validity⁴. In non-positivist methodologies validity is enhanced by reflection on the research process itself, an orientation closely associated with this study (see Bourdieu in Jenkins 1992 and Lather 1994 for two diverse examples of methodological reflexivity in research)⁵.

took into account socio-theoretical aspects of the texts I studied, what Fairclough calls discourse practices (see (*ibid*, pp.232-4). An example would be the types of discourse on which an interviewee drew and how they were combined; inconsistencies mentioned in 4.2.3 came to the fore at this level. (3) The third level of interpretation constituted the social practices of which the various discourse examples formed a part. These include the institutional circumstances of the discursive event and how these may have shaped both the discourse and the discursive practice of the research participant (*ibid*, pp.237-8). This level of interpretation includes ideological and political aspects of discourse, including hegemonic and other social relations and systems of knowledge and belief. It is clearly relevant in reflexive research; Section 3.1 refers.

² Owing to the more elaborate discussion of data pertaining to research I did not find it useful to present views on research in the same tabular format.

³ The term *cluster* indicates a grouping less clearly delineated than a category.

⁴ By *validity* I mean, in this context, the congruence of the results and interpretations with reality.

⁵ Fairclough (1992:238) notes that "there are always alternative possible analyses for discourse samples". This gives rise to the question of validating or 'justifying' one's particular interpretations of the data. Fairclough (*ibid*) lists several strategies to improve validity, but notes that in the end "all one can do is decide, given alternative analyses, which seems to be preferable on the balance of evidence available". I have used interviewee-checks of data, particularly in the early stages of the study, more as a strategy for increasing participation in the research and less as a strategy for validation. A post-structural vantage point on validity reveals the existence of "a complexity of truth which, paradoxically, is not [always] available as such to the very speaker who pronounces it" (Felman & Laub, 1992 in Lather 1994:46-7, my addition). The data analyses which I reported in interim research documents (Appendices 1 & 2) were contested by a few research participants; this

A first point to recognise is that my readiness to discern certain patterns in the data was influenced by international theories on different orientations to environmental education (see Table 4.1) (just as the participants' discourse were influenced by international discourses - see 6.1.4). Other points arising from reflections on the data analysis are outlined below.

4.2.3 Contradictions, Categorisations and Context - Problems of Mapping

Presenting the data in a more concise form for purposes of further analysis (looking for relations, trends) and for communication, was not unproblematic. Associated with such a reduction are issues relating to the "simplification and condensation of complex information into a unified frame of reference" (Jenkins 1992:56).

As noted in Chapter 3 (3.7.2.2) I was concerned, while tabling the data, about the nuances and complexities that were being lost, first in the process of extracting entries for the analysis table from the raw interview and workshop data, and then in the process of interpreting and clustering those for the presentation tables. Data reduction tends to smooth out inconsistencies in research results, to "marginalize that which does not fit categorical unities that order and classify" (Lather 1990:2). In this study however, from an emerging theoretical perspective which increasingly acknowledged the need to engage with complexity and contradiction (see 3.1, 3.7.2.3, 6.2.6 and 7.3.1), the discrepancies in the discourse of participants seemed too important to disregard. The inconsistencies seemed to be, *along with patterns of consistencies*, significant aspects of the landscape being researched.

Reflections on the meaning of inconsistencies within patterns provided useful ideas on the research situation and on the nature of change (see 6.3). However, inconsistencies also challenge the validity of constructing patterns of regularities in the data, in the first place, and throw a different light on the internationally constructed tables of positions on which I drew (Tables 4.1 and 4.3; see 6.3.2.3, 7.3.3).

This is an important point, for although I interpret the different positions described here as parallel streams of thought and action, with linkages feeding one another (see 4.5), a number of research participants construed the positions derived from the presentation table (in Janse van Rensburg 1993d) - and the positions on research and environmental education constructed in the international literature - as discrete categories. These they either de-constructed from a reflexive position (A3) or regarded as a 'paradigm grid' within which to fit themselves and others (L4, L2). L4 also treated the table as representing a hierarchy of increasingly more enlightened positions.

would be consistent with the contested nature of several issues in environmental education in the region, as discussed in 5.3 and several other sections of the thesis. A more important strategy for validating my interpretations was thus peer (rather than interviewee) review (but see the latter part of section 3.8.2). Those colleagues who shared reflexive perspectives were most helpful in this regard, for the validity of the interpretations in this study are to be judged for their consistency with the emergent theoretical framework.

Categorisation tends to reify results, i.e. to present ideas on results as reality, ignoring their human construction and decontextualising the results they aim to reflect. As Popkewitz (1991:225) noted,

Educational theories ... [such as L4 theory that there are discrete positions on education and research, or 'paradigms'] impose visions, divisions, and distinction onto empirical phenomena that have the effect of creating the categories as the reality itself.

In a reflexive assessment of one's theory (in this case a pattern of three uniform clusters) the presence of inconsistencies (which are themselves defined in terms of consistencies) prompts one to treat categorical schemes as temporary constructions, rather than as systemic formulations. Instead of imposing a direction of meaning on the emerging results (that is, postulating movement from one position to the next and viewing that as 'progress') I began to focus on how research findings exceeded and complicated (Lather 1990:3) the analysis (see 4.5, 7.3.3). As a consequence, the tables and clusters / cognitive devices used to structure and present (and thus produce) knowledge, themselves became tools for data analysis.

A final point to note in this reflection on the analysis is the de-contextualisation of the results in Table 4.2, where entries are disconnected from the individual participants and their contexts, for reasons of anonymity. In the analysis table (not included) participants' professional contexts are listed next to their views. Given the importance of social and institutional context in the shaping of individual perspectives (described *inter alia* by Popkewitz 1991) I searched for links between professional contexts and positions on research in/and environmental education. I found some, but no strongly consistent, links between participants' views and their institutional contexts. Some of these are discussed below (4.4.2.4, 4.4.3.4, 4.4.4.3, 4.4.5.2) and in Chapter 6 (6.1.4) in relation to the issue of change. In addition, reference to participants' professional contexts are made in the thesis whenever it seems particularly important to do so, but only when anonymity would not be threatened.

Popkewitz (1991:186) cautioned about de-contextualising and then re-conceptualising research participants' discourse "without social or historical reference". This practice, he noted, makes it more difficult for readers "to locate the interests that are speaking and the values according to which the knowledge is organised". I was unable to present detailed descriptive data to illustrate links between the context within which empirical data emerged, and the data itself. Readers thus become even more reliant on my interpretation of such links and my reflections on that interpretation. This was a difficult orientational change for me, in the study's shift from a more interpretative orientation (in which I would focus on providing detailed descriptions of data) to a more reflexive orientation (where I focus on reflecting on my treatment of the data). I return to this observation in 7.4.1, which summarises reflections on my learning during the research process.

4.3 RESULTS

4.3.1 Introduction

This may be an appropriate point to explain my use of the term *results*. My usage may appear unconventional, for there is a tendency, particularly in those interpretations of post-positivism which

manifest in 'modified' versions of positivism (Guba 1990:20-23), to refer to (mostly qualitative) research data and conclusions as *findings*. The rationale is a wish to distinguish between the tentative nature of such data and the ostensibly more definite nature of (often quantitative) *results* ('hard facts') emanating from empirical-analytical studies. In that I view both forms of data (from a non-positivist, reflexive position) as tentative, I use the terms differently. In this thesis *findings* indicates others' insights and information which have been 'found' in a situation (eg. the finding that several informal studies on research priorities have been conducted in the region). *Results* refers to the data and insights which have resulted from my interaction with research participants and with the data (eg. the result that some interviewees were sceptical about the 'institutional agenda' underpinning my wish to establish 'research priorities'). My understanding is that very few items of data are actually found, as opposed to resulting from the interactions between the researcher, participants and situations. Hence the latter term is used more often.

The results described in this first part of the chapter pertain to views on environmental education. Most of the views reflected here were expressed in response to two interview questions (Items 1 & 2, Table 3.1) particularly the first question:

What is your personal view or model of or approach to environmental education?

4.3.2 Views on Environmental Education

4.3.2.1 *Comment on the question "What is your personal view or model of or approach to environmental education?"*

A few comments on the question noted above, all of which could raise interesting further discussion, will be made to put the responses referred to below in perspective.

Firstly, it was for many interviewees the most difficult question to respond to in the interview. Several participants working in contexts which were not labelled as 'environmental education' (eg. sociological research, health education or natural resource management) said that they did not understand the concept well. A number of younger environmental educators (eg. L1, M6) indicated the same. Others (eg. M7, S2) noted that they found the concept of environmental education confusing, even though they had been working in the field for a number of years.

Secondly, and perhaps related to the above, a number of interviewees focused on their organisation's approach to environmental education, rather than their personal views. Some participants were very brief, referring without detail to 'the Tbilisi principles' (UNESCO 1978) and 'the IUCN definition' of environmental education (IUCN 1971). By contrast, others prepared for the interview with lengthy notes pertaining to this question in particular, perhaps also a sign of insecurity on the topic (see 6.3.2.3). A lack of clarity on the concept of environmental education was an important issue arising from the study (see 5.2).

4.3.2.2 Clustering of Views on Environmental Education - Theoretical Influences

Table 4.2 summarises the views on environmental education which participants expressed during this study. The categories and the suggested headings reflect the emergence of a pattern in the results which, to reiterate, were both in the data and in my looking at the data. My vantage point has been shaped by the literature. (For that reason Tables 4.1 and 4.2 appear in the order they do in this chapter, even though I introduce them here in a different sequence.) The following were relevant:

- * Ashley's (1989) description of educational ideologies in South Africa, namely Christian National Education, liberal education and liberation socialism
- * O'Donoghue's (1993a) sketch of approaches to environmental education in South Africa, described with labels such as "message transfer", "fieldwork methodologies", "the broad approach" and "action and community problem-solving"
- * 'education *about, through/in* and *for* the environment,' as most comprehensively described by Fien (1993:5, 15-16) and
- * three pedagogical orientations developed by Kemmis *et al.* (1983:11-14) - vocational / neo-classical, liberal / progressive and socially critical.

Table 4.1 summarises key features of three broad orientations in education described in the literature. The features of the different orientations or perspectives have been distilled quite crudely for this table; Table 4.1 provides a sketch and not an analysis of the broad theoretical backdrop against which I interpreted the data.

The views of environmental education expressed by participants in this study usually clearly reflected features of (or more accurately the discourse of) the three perspectives tabulated here, and could thus be broadly fitted into them. (Note the addition of educational ideologies for the South African context, from Ashley 1989.)

However, the results from this study also modified and transcended Table 4.1 in two ways. Firstly, South African and Namibian participants who took a *Critical* position (notably A1, but also M2, M3) placed less emphasis on the negotiation of 'emergent' knowledge, as described in the literature (eg. by Robottom & Hart 1989, Greenall Gough & Robottom 1994, both references drawing on Kemmis *et al.* 1983) and more emphasis on a perceived need for 'basic information' as a first step towards empowerment. The critical position in this study was also less 'learner-centred' than that which the international authors postulated. This difference might reflect the influence of regional versions of Freirean liberation pedagogy (People's Education, see Ashley 1989), which lent a particular orientation to critical pedagogy in southern Africa. A participant (K2) offered a second interpretation, that southern African societies are less "information-rich" than Australian or North American ones and that 'basic knowledge' therefore plays a bigger and more instrumental role in empowerment here.

Table 4.1

Pedagogical Orientations Summarised from the Literature(Adapted from Ashley 1989, Fien 1993, Kemmis *et al.* 1983 and Robottom & Hart 1993.)

CATEGORY	VOCATIONAL	LIBERAL	CRITICAL
Purpose of education	Prepare for the world of work	Prepare for life Self-actualising individuals	Prepare for hegemonic shifts; transformation in society and individuals
Ideology in SA	Christian-National	Liberal	Liberation socialism
View of Knowledge	Preordinate commodity Objective	Intuitive Subjective	Emergent & pre-ordinate Dialectical
Knowledge Derivation	Experts	Experience	Co-constructed
Knowledge Interest	Technical/rational/ managerial	Practical/expressive/ cultural	Emancipatory/ social action
Learning Theories	Behaviourist	Constructivist, humanist	Social constructivist
Teaching Strategies	Transmit facts, inculcate values	Facilitate experiences	Negotiate, mediate Action research
Setting of Goals	'Given' by external experts	Derived from community	Critically mediated with community
Teacher's Role	Knowledgeable authority transmitting knowledge	Facilitator of learning & problem-solving	Collaborative change agent
Student's role	Passive recipient of knowledge 'empty vessel to fill'	Active constructor of knowledge through experience 'seed to nurture'	Co-learner 'fire to kindle'
Curriculum Development	By official authorities	By teachers	Negotiated between teachers and learners
Power & Control	Reinforces <i>status quo</i>	Ambivalent 'Neutral'	Challenges Openly ideological
View of EE	Knowledge <i>about</i> environment	Experience/activity <i>in</i> environment	Info & skills <i>for</i> social justice in the environment

A second feature of the data which did not fit the template of Table 4.1 was an emerging perspective in and on environmental education, outside the other three positions (see 4.4.5).

4.3.2.3 *Clustering Views on Environmental Education - Research Data*

Notes on Table 4.2

Table 4.2 records responses reflecting participants' views on environmental education, clustered in three groupings which broadly correspond with the orientations in Table 4.1. Entries are followed by interviewee or workshop codes (eg. A1, SAWMA) to indicate the sources of various views. These references to sources do not necessarily indicate the prevalence of the various views, for I did not list every individual who expressed a particular view.

It should also be noted that individual interviewees did not always express views which consistently fitted into one of the three clusters. The discourse of many participants 'straddled' two or more positions. An example would be P3, who called for advertising campaigns to engineer changes in "mindsets" and behaviour (cluster 1), for facilitation without undue imposition of own viewpoint (cluster 2) and for empowerment of black teachers by exposing the influence of missionary and colonial education on their lives (cluster 3). These are inconsistent views, in that they reflect contradictory underpinnings. P3 wanted 'repressed' teachers to become conscientised about the way in which missionary doctrines limit their lives, but he was at the same time in favour of using advertising campaigns to change the (presumably same) public's "mindsets" in a manner which could also be regarded as doctrinaire.

Such contradictions occurred in several interviews and are discussed in Chapter 6 (6.3), because I thought that their occurrence may illuminate examples of change and responses to change. Although such interviews broke the boundaries between the clusters or positions described here, they seemed to reflect a tendency of the interviewee to be eclectic or inconsistent, but not clear, consistent perspectives or new syntheses outside these positions. Thus they did not allow me to describe new positions. An emerging 'reflexive' perspective in and on environmental education did however consist of a coherent set of views which lay outside of and transcended the table. This perspective is discussed below (4.3.2.4).

4.3.2.4 *A Reflexive Perspective on Environmental Education*

I call this set of views a perspective rather than a position. The reason is that the participants who expressed these opinions did not see them as constituting a new 'position', certainly not as one vying to become a new hegemony or a new paradigm (A2). Rather, it was seen as a transitional tool (A2) to clarify other positions and the conventions associated with them (A2, A3) and to support "productive action" (A2) in environmental education as process of change (A3).

Table 4.2 Views on Environmental Education - Clustering of Results

	CLUSTER 1: 'Behaviourist'	CLUSTER 2: 'Interpretivist'	CLUSTER 3: 'Critical'
Possible Labels	Vocational education Behaviour modification Positivism	Liberal education Interpretivism Constructivism	Socially critical education Liberation education Critical pedagogy
Ideal	Harmonious society, ordered through rational authority (S3, L2, S4) Explicit Christian values (L2, A6)	Individuals to discover, reach innate potential (L4, M5) Self-driven development (L6) Acceptance of a diversity of ideas (K2)	Hegemonic shift (A1,M2,M3) Empowerment of masses (A1) Social Justice (A1, S6, M2, M3)
Main Interest	Education for social & natural order (S3, S4); Sustainable resource use (C1, C6, S8, S3, M4, SAWMA)	Broad education for life (S2, L4) incl. appreciation of natural environment; Community needs (P2, A5, M1, S8, S5, M3)	Education for liberation from structural constraint (A1) and social injustice (A1, M2, M3)
Aims	Behaviour change according to 'neutral' end-points (S3, P2, S4, SAWMA) Acceptance of ethical behaviour code by all individuals (S3, S4)	Actualising the potential of the 'whole' person (L4, S1) Facilitating others to develop according to own vision, needs (P2, A5, M1)	Empowerment of the masses (A1) Reconstruction of oppressive institutions, policy, practice (C6, A1, M2)
Objectives	Tbilisi/UNESCO objectives (awareness, knowledge, attitudes, values, skills) (M6,L2,S4,M4,S1) Behaviour change (P3, L3)	Environmental literacy, child/community-based learning (M6, M1, S8, P3) Active involvement in environmental activities (P3, S5), experiences(A6)	Empowerment (C5, A1, L4, A4, C2) Knowledge, skills for empowerment (A1, C5, A4)
Focus on	Different ethnic/socio-economic groups (S3, S4, M4, L2, L3, S8 SAWMA) The poor/rural/under-developed/ 3d world (M4, SAWMA, S4, S8) Environmental problems (A5, L3, SAWMA) Factual knowledge (A5,L3, SAWMA) Values (L2, M4)	Communities/the poor/ under-developed (C5) Individual teacher, child (P1, S1, V1, S5, P3) 'Community' needs (P2, A5, M1, S8, S5) Concepts, rather than facts (M5, L1) Problem-solving for development (S5) Everyday life of learners (P1, C4, C5) Process rather than product (P2, M6, S6, S8, P1)	The masses, teachers (A1, C4) Those outside the system (S6, C2, S5) The marginalised, 'voiceless' (S6, C5) Social injustice (A1, M2, M3, S6)

Strategies & methods	Transmission of expert-derived information, messages (S3, P2, M5, M6, SAWMA) Social engineering through co-option (S3, P2, S8, SAWMA) Provide incentives, then teach (C1, L2, P2) Some intervention in others' culture (P3, C1) Application of models, techniques (L2, L3, P3, SAWMA) Assess needs to link messages with needs (S8, A6, SAWMA) Marketing/advertising (P3, S2, SAWMA) 'Curriculation' (S1, L2, S8) Overcoming mindsets (P3, SAWMA) Reinforcing positive behaviour (L3, P2)	Needs assessments followed by working with community on practical problems (S5, S8, M1) Inspire (P3) Facilitate (P3, L4, V1) Blending traditional & modern values (P3, M2, C3 SAWMA) Enquiry, experiential learning (S8, A6, M5, A4) EE for the people, working within existing structures (P3) Non-recipe based (L4, P2, S4) Group learning (L4, V1) Non-authoritarian (C5, L4, L5, P1) Non-rote (V1, P3) Broad approach, cross-curriculum (L5, M6, K2, L4, S1, P1, M6)	Articulation of community needs, silent voices (S6) Action research (A1, P2, K1, A2) Encourage others to develop own capacity, to empower themselves (C2) Galvanise others to use structures (S5, S6) Local level institution-building (C2, S5) Democratisation (C2) Sharing 'basic knowledge' (A1) Reconstructing existing structures (A1, M2) Participatory research (C5, C2) Co-learning, dialogue (M1)
Theory	Communications theory (S3, P2, SAWMA) Behaviourist learning theory (S3, L2, L3, SAWMA)	Constructivist learning theory (individualist) (L4) Liberal humanism (K2, L4, L5) US Cognitive psychology (L2)	Critical pedagogies (A1, M2) Social-constructivist (S6)
Def of EE	IUCN, Tbilisi principles (S3, S4, P2, S8, M6) "Holistic" (S1, P1, K1, K2)	"Good (liberal) education" (L4, P2)	"Better education for all" (A1)
Practice	EE as "management method" (S3, IM) Education in/about environment (L3, L4, SAWMA)	Education in/through environment (L4)	Mediate development & limited resources (environmentalism) (A1) Education for, with people (C5)
Learner	Vessel to fill (L2, S3, SAWMA)	Seed to nurture (L4, L5, K2, C5)	Fire to kindle (S6)
Teacher	Authority through possession of pre-defined knowledge (S3, SAWMA)	Facilitator (M6, A6, L4, P1, P2) No particular authority (P1)	Change agent (C3), mediator (A1) Leader, facilitator of participants (C5) Provider of infrastructure & expertise (A1)
Development	Social engineering (SAWMA) Top-down intervention with semblance of participation (S3, C1, A6) "Nurture and nudge" - re-focus needs of the 'under-developed' (A6, S7)	Helping community to address their practical needs (S5, S8) Anti-authority, anti-expert (L4, P1, K2)	Capacity-building through structures, processes, skills (S6) Empowering people to improve their quality of life (A1, S5)

Curriculum	Developed by experts, distributed & evaluated, at central level (L2, S1)	Decentralised resource-development with teachers (L4)	Participatory curriculum-development, at both central & grassroots levels (A1, C5)
Knowledge	Derived from 'objective' science, translated for learners (L2, SAWMA) Instrumental (C1)	Constructed by learners, based on experiences, non-authoritative (L4, M5) (but unquestioned) Instrumental (A1)	An integral part of empowerment (A1, S6) Both authoritative & experiential (A1)

From this perspective an *ideal* of sustainable living (rather than sustainable development) and the development of a broad capacity for change towards that ideal are reflected in educators' interests (A2). These ideals are however not perceived as static or universal. A3 described them as a particular "script". Major *interests* of this orientation lie in the clarification of the underpinnings of theories and everyday actions (conventional wisdoms), in exposing the myths in many of our common sense assumptions (A3) and in challenging conventional theory (A2); in revealing historical shaping influences on practice and epistemology and in the importance of context.

Educational and development aims are to be co-constructed according to the context and along shared agendas (A2). The *broad aims* of this orientation, however, include the co-construction of *knowledge*, the development of the capacity for change (A2) and 'productive action', i.e. action which results in tangible responses to the environment crisis, for example the development of tools or courses through which people can improve their capacity to address environmental issues. *Environmental education* is a broad process of social change which at the same time provides a focus for change in education (A2). *Learning-and-teaching* are seen as interchangeable roles taken on by the same people (C5); learning-teaching *strategies* centre around dialogue, encounters and reflection within a context of action on a shared problem (A3; see Fig. 4.2). The production of resources and the development of simple tools for more broadly conducted scientific investigations, as well as the expansion of networks to share such resources, are regarded as productive methods within processes of social change; A3 refers to "developing the tools for change".

The theories drawn on in this perspective include contemporary social and educational theories, particularly of European origin. Examples are perspectives which highlight the risks associated with modernity (Beck 1992) and the value of reflecting upon modernist ideals (Docherty 1993), socio-historical-constructivist perspectives which emphasise the socially constructed nature of knowledge (Berger and Luckman 1967) and the value of dialogue in processes of learning (Wertsch 1991; Bakhtin in Wertsch 1991); process sociology (Mennell 1989, O'Donoghue *et al.* 1994) which provides sensitising constructs with which to analyse the shaping influences of historical processes; and educational theories of social epistemologies, introducing the concept of political economies as one such set of shaping influences in processes of change (Popkewitz 1991).

4.3.3 Views on Research, its Nature, Role and Value

4.3.3.1 Introduction

Using Item 3 in the interview schedule (Table 3.1) I asked participants whether they thought that research had the potential to address the problem areas they had noted in response to Item 2. Questions 1 and 2 were both included in the interview less for the actual responses which they would draw, than for assisting interviewees to mobilise ideas on the main topics which follow-up questions (under Item 4) covered: the role and value of research and ultimately, research priorities. The results from which different positions on research were derived were elicited by these interview questions, but also numerous other data sources including the EEASA and SAWMA workshops (see Fig.3.3).

This section of the chapter outlines the relevant data, broadly divided into views on research reflecting an instrumental orientation and views reflecting a non-instrumental or 'process' orientation to research. To explain why I have imposed this particular structure on the results, I start with comments on the interview questions pertaining to research.

4.3.3.2 Comment on the Question

In both interviews and other research settings (see 3.4.1) the question of what I meant by the term research was sometimes raised.

Some interviewees (eg. L1, P2, A4) simply wanted to know whether I was referring to academic and/or formal research only. By this they meant research done for academic or formal contractual purposes. I assured them that this was not the case, and that research as I viewed it, processes of planned and rigorous enquiry into matters of interest and/or concern, could take place within or outside of academic and other research institutions.

When interviewees C4 and M5 asked me to define research, I emphasised that my exploratory study allowed for a range of interpretations, particularly those which would improve my own understanding. I encouraged them to mobilise their understanding of what research entails. C4, for example, proceeded to define research as a process of 'finding out' in a planned or disciplined manner. Most interviewees trying to define research gave a broad description of research, which often included research as an ongoing or small-scale process. However, in continuing discussions on research most participants tended to approach the topic from a fairly narrow conception of research as formal enterprise (see 5.7.1, 6.4.1).

At the EEASA focus group discussion (3.4.1) the issue of different conceptions and uses of the label 'research' was discussed. The group reported back that the term needed clarification before I could continue with the study. I was of the opinion that the study itself would provide clarity on the concept.

This was indeed the case. My understanding of the notion of 'research' deepened during the study, *inter alia* through an emerging 'process' orientation to the concept, in which it is most usefully viewed as a process of 'researching' rather than an entity of an 'institutional' nature. (See 5.7 and 6.4 for further discussion on this point.) As this insight developed I also observed that most research participants viewed research as an entity or object and as a utility, the ultimate benefit of which came only later, upon 'implementation'. Hence I decided to divide the different views on research reported here as instrumental (or utilitarian) and non-instrumental (or process-oriented).

A second point about the interview questions needs to be recalled here. I had mentioned my concern (3.3.1) about the position of the questions about the role of research and research priorities in the interviews, following as it does on a question about the problem areas in the field. In the next section I will argue, however, that this connection in the interview schedule between environmental education problems and research was not the only reason for interviewees' tendency to link research with the role of addressing problems.

4.3.3.3 The View that Research is Valuable

In response to questions about whether they thought research had a role to play in addressing the problem areas which they had identified in the interviews, most participants answered in the affirmative. For example, L3 noted that if it was not for scientific research, environmental educators would not make any progress. P3 suggested that the main reason for environmental education research was to bring about social change. Also, the majority of research participants expressed a belief in the general usefulness of this study. More specifically, two funding agencies (WWF-SA and the then Department of Environment Affairs, South Africa) hoped that the results would provide them with directives (see 1.1). Several interviewees indicated that research on priorities in environmental education would provide much needed guidance in an arena which appeared (to M7, K2, S8, L1, M6, S3, S2) un-coordinated and vague. S3 wanted me to 'create some order' through this research.

Other interviewees for example C4, S2 and S5 stated that they had never really thought about research playing a role in addressing the problem areas they listed. After some reflection on the matter they did however express the belief that it could. Although their answers might have been influenced by the order of questions in the interview schedule, as well as a desire to be supportive of my interests as interviewer, I would argue that the overwhelmingly positive response to this question reflects a belief among most participants in the merit of research attempting to address educational problems.

This is consistent with international observations which indicate widespread public support for the research enterprise. Such results are characteristic of societies with Enlightenment ideals of delivery from the forces of nature, hunger, disease and social strife, through education and development based on the emancipatory knowledge provided by science. Popkewitz's accounts (1984, 1991) of the role of the intellectual and the historical link between the social sciences and the notion of progress (see also 6.4.10.2) refer. He noted that the relationship between progress and science (change and research) has existed since the 19th century. He related how, in 19th-century social science in the United States of America

progress [a modernist interpretation of social change] was a notion that gave secular authority and political power to gentry, reversing their exclusion from the various forms of popular

democracy that were developing. In contemporary reforms, the idea of progress is retained and *legitimizes new spokespeople as representing the wisdom of progressive projects* (Popkewitz 1991:217, my emphasis).

There might thus be a link between the popular view in this study that research has a role to play in addressing problem areas in environmental education and the modernist belief that science is the major tool for providing information, solutions to problems, guidelines and directions for progress. This might be so despite the view of several interviewees (K1, P3, S3, C4, C5, S8, A4, S5, M2, M3) that research did not always fulfil the promise of being 'useful'. These views and the reasons given for them are discussed in 5.7 under the heading "Illusion and Disillusion".

4.3.3.4 Overview of Results on the Role and Nature of Research

Broadly, research was seen by many to have a role, in the first place, to 'find out', to explore. Examples of such opinions are: "research is a process of finding out" (C4), "research is usually a first attempt at understanding something" (K2), "research is the collecting of information" (S8). M5 went so far as to call a researcher "simply a collector".

Another group of participants thought that research had both this informative and a more transformative role: "research should improve people's lives [as well as] help them to understand their own lives" (C5); it was to "bring about 'real' change" (P3) or to fulfil a directly developmental function (M6). (Related to these opinions were the views of A4, S6, C5, C1 and L4 who were negative about 'collectors' who 'gave nothing in return'.)

In addition to the above, a range of other roles were assigned to research - to evaluate (L1, L3, K1), to 'prove less and open up debate more' (C5, A2), to clarify (A6, A2, A3), to apply discipline (K1), to give voice to those who had not generally been heard before (S6, K3), and, perhaps most frequently, to help the practice of environmental education (L1, L4, P2, C1, M5, M7).

This array of opinions begins to give a glimpse of the nature and diversity of responses. Clearly some of the opinions are contradictory, emanating from different positions on research in general. These are to be outlined below against a backdrop provided by the international literature on research in environmental education and educational research methodologies in general (as sketched in Table 4.3).

As mentioned, one way in which I made sense of the results was to separate instrumental and non-instrumental orientations. The most dominant view of the role of research elicited in this study was an instrumental one related to improvement, problem-solving or the 'engineering' of change. Research was seen as an instrument to provide answers which would help one, either directly or indirectly, to improve or change situations or to solve problems. It was a tool to help managers, developers, teachers and other environmental educators to reach their aims.

One interviewee (K2) was of the opinion that research had an intrinsic value unrelated to whether it made a difference to situations or not. Implementation and change might or might not be the purpose of research, he thought. (This view which was not widely shared.) K2 reasoned that research alone

could not bring about change, but its implementation could, and that researchers seldom had the time to implement the findings of their research. This latter view, of research as distinctly separate from its "implementation", was shared by other participants (eg. S1, S3, S8).

A minority of participants, on the other hand, did not regard research as separate from environmental education projects or processes of development. To A2, for example, research, change and environmental education were inextricably linked. From this perspective research was not instrumental in *bringing about change* or improvement, but was an inherent part of *processes of change*. *Researching* was a process of reflection and clarification intertwined with productive action. This is an example of a non-utilitarian or process-oriented view on the role of research, to be discussed later (4.3.3.6).

4.3.3.5 Instrumental Orientations to Research

The many examples from the results of utilitarian or instrumental views of (the role of) research are summarised below.

Research to Provide Directives

A first set of views was that a major role of research was the provision of directives on *how to* do a range of things with regards to environmental education. Thus, research was to help us to find out

How to "reach communities" (SAWMA); "penetrate" them "most effectively" (SAWMA); communicate effectively with them (C1, C3) using specific technologies (eg. video or mobile education units, C1) or "work with them" (P2);

How to "transfer knowledge" (SAWMA), particularly to certain groups (P2, P3, L1);

How to improve communication within and between groups "without extra-tribal bias [cultural misunderstanding?]" (SAWMA); *how to* "address cultural differences" (SAWMA, M4, M7);

How to link with or utilise community needs to successfully convey a conservation or development message or plan (SAWMA, M4, A6, S7, S8);

How to motivate or inspire people using better techniques (A6, SAWMA, P3);

How to make the right decisions about natural resources or projects (M3, K1); *how to* allocate funding or other resources (M6, K1, L3);

How to manage or organise society and natural resources (S3, C1, C2, C3);

How to design or run educational programmes (C6, L3, A5, P1) and *how to* improve own practice (V1, L1, A2, A3, A6);

How best to address community needs (M1).

Research to Provide Information

A related set of views on the role of research is that it has *to provide information* on the *what* and *who* questions, for example:

What are the crucial issues in the "unique" South African situation? (A4);

What are the most important environmental issues or problem areas? (SAWMA; see also Irwin 1988:3, which shows that this had been a priority issue for some time). *Who* are the target communities impacting on these issues? (SAWMA)

What is "the environmental message" (and how do we put it across)? (SAWMA)

Who are "the community", one's "target groups", "key decision levels and forums" for messages or programmes? (SAWMA)

What skills should be developed in environmental education? (A4)

What educational programmes are desired by users? (C6, V1, M7); *What* are the perceptions of existing educational programmes or resources among users (especially teachers)? (V1, L1, M5)

What are teachers' attitudes towards innovations? (S1)

What are the basic principles of successful projects? (C1, S5)

What is the nature of society (similar to the way natural science provides information on the bio-physical world)? (S3)

What is the relevant baseline socio-economic data (C2, M1) or the hard statistical data/"straight information" (eg. on environmental conditions) on which one needs to base recommendations (P2) or lobbying (A6, M2)?

What is the broad environmental information needed in general? (A6, M7)

Further, there was a perceived need to use research to gather information on the existing knowledge (M7, V1, C4), cultural perspectives (M7, P3), attitudes (A6, AS, SAWMA), values (SAWMA, HSRC), perceptions (SAWMA, AS, P3; see also Irwin 1988:4), perspectives (M2), understanding of environmental issues and resource use patterns (SAWMA), and/or needs (V1, SAWMA, A6, L2, AS, V1, C3)

of different cultural or socio-economic groups or "communities".

The aim with such research was either

- * consultation (C3, P2)

- * to "amend" the researcher's preconceived ideas (C5), so that she did not only follow her own agenda (V1), or

- * "to establish and confirm" existing views (SAWMA).

These issues have been considered as priorities for some time. In a document introducing 'Priorities for Environmental Education in Southern Africa. A framework for discussion presented to the National Conference of the Wildlife Society of Southern Africa' (WLS), Irwin (1988:3) explained:

In Southern Africa interpretation needs to be sensitive to diversity. A lot of work needs to be done on 'environmental interpretation' before one launches into costly interpretive programmes.

In this study references to particular socio-economic groups or communities were frequently made in discussions on the role of research and on research priorities. Many participants regarded "the underprivileged sector of our society" (SAWMA), "local [Black] people" (P2), the 'Third World situation' (in Namibia) or 'underdeveloped' (S7) groups as particularly important. Their needs, values, perceptions, culture and so forth were seen as important topics for research, as was information on how to deal with cultural differences. A substantive issue which arises from these and other results is the existence of what I discuss in Chapter 5 as a 'discourse of difference' (5.5).

The expressed need for so-called basic information on, for example, environmental issues or conditions was sometimes linked to professional activities such as resource development (eg. by M7). Other participants noted a general need for 'basic information'. Several interviewees expressed a need for bio-physical information on the Namibian environment. This seems to be a widespread opinion in that country (see Janse van Rensburg 1994). Interviewee A6 perceived "a hunger for information" all over southern African. K2 also regarded the region as "information poor" and thought that virtually any research would hence make a valuable contribution. (The latter participant, with a less instrumental outlook on research than others, also regarded research/knowledge for 'its own sake' as valuable in its own right.)

However, there were also opinions that research providing 'basic information' only was less than useful. Examples were references to a perceived plethora of studies providing less-than-useful information on "values" and "awareness" (A2) and references to statistical information on student numbers and admission policies (C5). It was said that what little research has been done in education in Zimbabwe by the local university has been "mostly interested in figures and to me it's not very useful. It does show the situation but *it doesn't tell you why the situation is like that and how you're going to improve it*" (emphasis added).

Several participants thought that collecting information through research was not only for "baseline data" purposes and not an end in itself. For them information had to be 'useful'. It was either to be 'applied' to effect some change, or to play a directly educative or persuasive role. Thus research information was to be used to:

- mobilise mass support for environmental or educational issues (A1)

- gain acceptance for a curriculum innovation, to 'take teachers with you' (S1)

- help others (eg. teachers) to understand their needs and situation better (C5) or to "inform and enlighten" research participants (C5, also C2)

- promote, through "objective scientific research", "balanced environmental awareness" (see below)

- lobby the government for land reform (M2)

- 'educate' the public or certain groups (eg. government, business, publishers, educational decisionmakers) to see the wisdom of certain positions, by 'selling' research findings to them (S3, A6, M2); this latter view reflects the authoritative voice accorded to research by society.

An interesting point regarding the 'utilisation' of knowledge relates to its possible neutrality. If

knowledge has the role which these participants attributed to it (eg. to lobby or convince others of certain 'facts') and if research was to develop knowledge for that purpose, neither the research nor the knowledge it produced could be perceived as neutral and 'value-free'. Yet the opinion was expressed that the role of information provided through "objective scientific research" was to "promote *balanced* environmental awareness" (emphasis added). This view (from documentation in which a contract researcher who did not participate in the study introduces the value of research to prospective clients) seems to imply that such "objective" information would provide people with 'the other (factual) side of the story' to counteract emotional, uninformed or 'biased' perspectives on environmental problems. The view that scientific knowledge is objective and neutral, which was also reflected in the discourse of a small number of participants (eg. L2, P3) will be challenged in this study (see 5.7.3, 6.4.10.1, 7.6).

Research for Development and Problem-solving

A view somewhat different from those linking research to information-gathering per se is that research has to not only *identify* (C5, V1), but also to directly or immediately *solve* (P2, L4, A5, S5) *problems* of an educational, broadly developmental or "practical" (A1, A4, P2) nature.

Research was seen to have a role in contributing to the development of:

- * communication strategies (S2, C1)
- * environmental education campaigns (S2, C1)
- * educational resource materials (M7, L2, L4, M6, M3, P1)
- * non-formal environmental education centres (M6)
- * the formal school curriculum (S1, S8, A1, L4, S4).

Some views on the role of research in curriculum development differed sharply: L2 thought research was necessary to prevent curriculum development from becoming based on people's "hunches" and "democratic feelings" ("participatory") rather than "empirical investigation". A1 on the other hand wanted participatory research to make curriculum development more democratic and less expert-driven!

In South Africa and Namibia it was noted that research had a role in educational policy development (M6, A1, S8), in the development (M6, S8) or coordination (M6, L1) of a national strategy or education system (M6, S8) and in determining national priorities (S8, K2). C5 was already quoted however as saying that he did not find the predominantly statistical data produced by the educational policy research he encountered in Zimbabwe useful.

Several interviewees claimed to find research for practice, rather than policy, more relevant. Pleas were made for research to address the problems practitioners encountered in everyday practice. Environmental educators wanted research to tell them:

'What are the needs of the teachers visiting my centre?' (L1)

'Are our fields centres doing meaningful work?' (M6)

'Should we invest in booklets or camping equipment?' (P2, K1), 'video machines or extra staff?' (K1, C1)

'Am I reaching my target communities, eg. the children's parents?' (L1, P3)

'Do teachers find my resource pack useful?' (M5, M7, L1).

It was clear that several participants wanted research to contribute to their educational practice. Research which did not fulfil this role was dismissed by some of their number as "for the academics" (C4) or as benefitting only the researchers themselves (L4, M6). Although most of these views were held by people who were not involved in formal research, one of the interviewees expressing the latter opinion was an academic researcher. These views reflect a particular view on the role of research in general (discussed in section 4.4.3) and on formal and academic research in particular (5.7).

Research and Evaluation

The value of research to practitioners and others included its link to evaluation. Participants wanted research to assess the value (L2), "effectiveness and efficiency" (SAWMA, also L3), cost-effectiveness (K1) and merit (K1, K2) of "teaching techniques" (L3) or educational programmes. In an unpublished document on research priorities a member of the Education Committee of the then Council for the Environment (1989) listed six priorities, five of which had an evaluative component. These included:

- The definition of ... predetermined measures to determine and monitor change [and] evaluation
- Evaluation of the effectiveness of current attempts to promote environmental awareness
- ... evaluation of methods used in teacher training
- ... evaluation of methods used in interpretation
- ... assessment of effectiveness of resources used in formal education.

The prevalence of the view that evaluation of environmental education programmes is a priority was also illustrated in the discussion document for the WLS (Irwin 1988:3) mentioned above. "Evaluation" was also one of 10 'Priority Areas for Research' identified at the EEASA workshops in this study (3.4.1).

To judge whether their environmental education programmes were accomplishing what they wanted them to, interviewees wanted outside researchers to do evaluations for them (P1) or to help them monitor their own programmes on an ongoing basis (A5). P1 thought that this would give him confidence in his work. By contrast, A1, A2 and A5 questioned the value of researchers evaluating others' practice. A5 thought that practitioners knew their programmes best and were thus in a better position to evaluate them. A2, while appreciating (like A4) the contribution of an 'outside' evaluator who worked closely with practitioners, also pointed out that environmental education was in itself an evaluative process and it was hence problematic to refer to evaluation as an activity distinct from environmental education (see 4.4.5.1).

Research and Change

To complete this section describing results which reflected an instrumental orientation to research, I introduce views related to the role of research in relation to *change*. Since this study is oriented to environmental education research in the context of change (see Chapter 2) it is important to note that many interviewees made direct links between research and change.

The following opinions were voiced:

Research should 'bring about' (M6, P2) or "mobilise" (A1) change;

Research should "make a real change" (A1);

Research should be 'sensitive' to the 'changing socio-political conditions in the country' (L4, M6, A1, A5, with regards to either South Africa or Namibia; see also 6.1.4);

Research should "address social change" and "inform" its "direction" (P3, A1, M6);

Research is "about change" (A5) or "for change" (P3);

Research has a transformative-cum-practical role in that it "should improve people's lives [as well as] help them to understand their own lives" (C5).

In discussing the role of research in teacher development for "agency", A1 described research as an "empowering process". Although he saw research as a process, he also attributed an instrumental aim to it, to create a "counter-hegemony" and mobilise mass support to bring about change, particularly in relation to socio-political injustices. He called this "research for reconstruction". A1's views are representative of those which make up the orientation described in 4.4.4.

Summary

Out of the many opinions reflected above I discerned three broad orientations to the role of research and research priorities. These were views claiming that:

- * research should provide information, guidelines and answers to questions for later application, particularly to inform the management of society and its environmental resources, and often through 'evaluations'
- * research should solve practical educational problems as identified by practitioners and with immediate application
- * research should 'empower' the 'disempowered' and help to bring about radical shifts in socially unjust situations.

4.3.3.6 Non-utilitarian Views: Research as Process

To most of the participants quoted above research was separate from the project on which it would focus. By contrast the following set of views on the role of research featured no distinction between research and other dimensions of environmental education. Research was seen as an integral part of

- * any project (A2, A3 and from a different perspective also C1, P1)
- * one's work as an educator (C5)
- * processes of development and (political and other) change (A1) and
- * environmental education (A2, A3).

For A2, research revealed the concept of environmental education at the same time as it was realising it - combining "the researching with the doing" for "in the doing comes clarity". His view on research priorities was that it would be a priority to research "priority projects", i.e. those which 'embodied' productive environmental education.

Research and reflection

Research was seen to have a reflective function (A2, C5) for researchers reflecting on their own practice. C5 illustrated one aspect of such reflection:

At times we [researchers] tend to go to the people to extract some information and keep it as our own and say "They don't understand the situation, we understand it". And perhaps ... we are using our own eyes to see them, and never using their own eyes *to see us* [my emphasis].

As noted above (4.3.3.5) A2 (and A3) argued that evaluation was not something separate from or attached to environmental education programmes, but a core dimension of environmental education as critical response to the environmental crisis, and sensitising construct within education.

S8 referred to 'theoretical research' as research which helped one to assess a situation and one's own position or perspective within that situation. Another view, reflecting a non-instrumental orientation to evaluation in/and research was that projects that were in themselves "critically evaluative" were better than evaluations which were separate from the programmes themselves (A3, A2).

Research and Theory

Contrasting with the prevalent 'practical problem-solving' orientation to research were views that research had a role to develop and clarify theory. Although some of these views are instrumental, they will be mentioned here. Research was seen as valuable in

- * developing "a theory for life" as philosophical and ethical basis for practice (L2), specifying goals and giving direction (the instrumental dimension, M1);
- * 'deepening' ("verdiep") the concept of environmental education, in particular by exploring how it could include the concept of development (S5);
- * clarifying problematic or complex concepts such as environmental education (M7, S2, A5; see 5.2); clarifying what the "issues and approaches" in environmental education were (M7)
- * clarifying other 'new' concepts characterising current discourse in environmental education, such as "development" (A4) and "action research" (S8); A4 referred to "buzz word research" (see 5.2 and 6.3.2).

C5 was of the opinion that research was not "to prove", but to start debate. Continuing that line of thought was A2's view that research had a role to "grind a theoretical axe", to define, critique and challenge ideologies of (environmental) education, to uncover assumptions and to challenge them. Rather than to provide directives for practice, research was to explore practice in order to "uncover theory" (A2).

Research, Training and Education

Reference was also made in the study to a link between research and training and education⁶. Some regarded this dimension of research as a positive side-effect. For example, research which evaluated environmental education programmes was seen to have a role in staff training (A5, C4, A6). Others saw the training of rural people to do research as an essential element of participatory research projects (C2). The views were also expressed that such projects had the capacity to 'empower' participants (C2, C3, C4, S6) and to assist in "capacity building" (S6, C2, C3). Yet others saw research and education as integrally connected (see 4.4.5).

4.3.3.7 Positions on Research in the International Literature

In making sense of the diversity of opinions on research reflected above I was influenced by the international literature in social, educational and environmental educational research. I drew on the work of Habermas (1972), Popkewitz (1984, 1991), Goodman (1992), Lather (1991, 1994) and particularly Robottom & Hart (1993) to collate Table 4.3. This table serves simply to highlight features of four research 'traditions' (Goodman 1992) in the social sciences, each with its particular epistemological and ideological underpinnings. It should not be seen as a complete or in-depth review of the field. The fourth grouping in the table, which I called 'Reflexivity', is emerging and less well-documented. To illuminate its features I drew on Lather (1991). As she did I would point out that this is a perspective or orientation and not a 'paradigm'; it represents a positioning outside the paradigm discourse.

4.4 THE LANDSCAPE: POSITIONS ON AND ORIENTATIONS TO RESEARCH IN/AND ENVIRONMENTAL EDUCATION

4.4.1 The Relationship between Views on Environmental Education, Views on Research and Conceptions of Change

With the international literature as background, but not template, I mapped the views on research emerging from this study in the following four clusters:

1. The role of research is to provide information, particularly for the purposes of managing social change, society and its interactions with its 'resources'
2. The role of research is to resolve the problems of educational practitioners and other 'communities'
3. The role of research is to address inequities, topple present power structures

⁶ I distinguish between training as the development of fairly technical skills and education as a broader and deeper process of development.

Table 4.3 Some Features of Four Traditions in Educational Research, from the Literature
(Adapted mainly from Habermas 1972, Lather 1991 and Robottom & Hart 1993.)

Research Tradition	Positivist	Interpretivist	Critical	Reflexive
Alternative Labels/ Underpinnings	Empirical-Analytic	Symbolic Constructivist	-	Elements of post- structuralism/post- modernism
Research Interest	Technical Interest	Practical Interest	Emancipatory Interest	Clarification
Broad Aims	Explanation, prediction, control Information, directives	Understanding Solving problems	Change, reconstruction Empowerment	Reflective action Challenging the 'given', revealing myths
Research is	An applied science Objectivist Instrumentalist Acontextual/ Individualistic Deterministic	Interpretation Subjectivist Constructivist Contextual/ Individualistic Illuminative	Critical social science Dialectical, reconstructivist Instrumentalist Contextual/ collaborative Emancipatory	Not separate from practice Critically reflective Action-oriented Process-oriented
Researchers are	External experts	External experts	Expert participants Reflective practitioners	Reflexive practitioners
EE example internationally - in southern Africa -	Volk & Hunger- ford (1981) Opie (1990)	Wals (1992) Robertson (1994)	Robottom (Greenall Gough & Robottom 1993) Naidoo (1993)	O'Donoghue (O'Donoghue & McNaught, 1991)

3. The role of research is to address inequities, topple present power structures and contribute to the empowerment of those who are currently power-less
4. The role of research is critical reflection in and on action, theory and processes of change.

The next step in the analysis was to relate these four sets of views on research to the sets of views on environmental education outlined in section 4.3.2. There were strong indications that participants' views on research and their views on environmental education were informed by the same underpinnings. For example, A1 viewed both education and research as processes to 'empower' 'the masses' and he based his understanding of both on critical theories. L4 based his views that both education and research should 'facilitate' individual students and teachers to develop their innate potential on liberal-humanistic educational and post-positivist theories.

Another link between individual participants' views on research and their views on environmental education was their conceptions⁷ of change, the kind of change required in present circumstances and the ways in which it should be brought about through environmental education and research. A1's view of change as structural transformation also draws on critical theory and in fact, draws together his conceptions of education and research. Thus in describing different positions on (and orientations to) research and environmental education I also refer to concomitant views on change. The four positions/orientations derived from this study thus were:

Reform

Research and environmental education for the Re-ordering (or Reform) of society through management (change as reform)

Resolution

Research and environmental education for the Resolution of 'practical' problems and improvement of situations (change as resolution, improvement)

Reconstruction

Research and environmental education for the Reconstruction of social structures (change as reconstruction, radical transformation)

Reflexivity

Research in/and environmental education, as Reflexive processes of change in response to the environmental crisis (change as reflexive process)

These positions on the landscape are described below with reference to views on change, (environmental) education, research and, where applicable, the context of their exponents.

⁷ By *conception* I mean the dynamic understanding of an abstract concept or idea.

4.4.2 Position I: 'Reform'

Research and Education for Restoring Order to Nature and Society

If *you* can create order, it would be nice ... (S3, his emphasis)

4.4.2.1 *Change*

This, the 'management for reform' position, was held by participants who demanded changes in response to environmental problems, but not through radical⁸ developments. The appropriate response for these participants included changes in individual behaviour (L3) (rather than social structures) and the management of both the 'impact' of society on nature and the utilisation of 'natural resources'. Significantly, such management appeared to be a means to *restore order*. Based on an interview with S3, but also other observations, the goal appeared to be a situation where people lived in harmony with their natural resources and with other social groups. This ideal was to be reached by 'removing disagreements and conflicts' (S3) and by spreading the scientifically-derived knowledge that resources were limited (SAWMA). Such knowledge was valued for its perceived neutrality ('balance') and authority (L2).

Scientifically-based environmental management and individual behaviour change were to restore a presumed innate order to society and nature. An example would be the view of a participant from a governmental conservation agency, that there was (and I translate and add the emphasis)

only two very important *rules that regulate everything on earth*: the first is how to organise society and the other is how to organise natural resources; the balance between these two is survival management.

This participant believed that South Africa and all its 'peoples' were to be organised so that we would be able to live with one another, despite our 'natural' ethnic differences and within the limits of 'our natural resources'. This was to be achieved through 'the education process' which would remove disagreements and conflict and make people realise that which scientists already know, namely that resources were limited. (L3 also made this point).

Notable in this interview was the discourse of harmony and order and the treatment of societal interpretations (eg. the grouping of people according to 'ethnicity' and attributing significant differences to such groups) as 'natural', 'given', neutral and apolitical. Thus he believed that political change in South Africa had to be settled quickly so that conservation could then be practised as the non-political issue he perceived it to be, based on science and the 'givens' of nature and human nature. Such a belief means turning one's back on the fact that the distribution of resources such as land and water, the allocation of land for game parks and nature reserves and numerous other 'conservation' issues have been and are being shaped by policy and hence are political in character. To situate environmental issues outside the political arena, inside a context of supposedly neutral science and 'nature', is to support a view of change as reform within existing social systems, which

⁸ As mentioned in Chapter 2, the Latin origin of the word *radical* means *root* and by radical I thus imply deep or fundamental, addressing history and origins.

are either tacitly or overtly supported."

4.4.2.2 Education

Views on environmental education (see Cluster 1 in Table 4.2) were based on the same line of reasoning. Several participants (I quote here mostly from the SAWMA workshop reports) shared a belief that the role of education was to assist in endeavours to "manage" resources and society in response to an awareness of the depletion and degradation of natural resources. Education was to do so by "communicating" expert-derived "messages" to those who had to change their individual habits ("behaviour") and to adopt a certain "ethical code". The teacher or developer was regarded as an expert "delivering" scientific knowledge. Those in need of knowledge or development represented containers which needed to be 'filled' to certain "levels of awareness". With regards to 'the acceptance of an ethical behaviour code' (S3, S8) participants in this group emphasised the 'inculcation' of uncontested values (L2, M4) as an important task of education.

Environmental education was described as 'a bridge between the organisation of society and the organisation of natural resources' (S3). This link was envisaged in various ways. Education was envisaged as

- * 'part of a management plan' (S3)
- * a "method for conservation" (SAWMA) or at least a means of making management easier (SAWMA)
- * a means of "bringing [communities] on board" to agree with and support scientists' understandings and undertakings, as a participant in a workshop I attended (IDRC 1994) indicated.

Environmental education was itself to be managed by the educator, as a set of techniques (L3) or a procedure through which the learner is moved in step-wise fashion to a position pre-defined by the teacher (S3). Some saw education as a didactic science (S1, S4, M4); others wanted to apply "the science of advertising principles" (P3) to improve the effectiveness of environmental education in changing "mindsets" (see 6.2.2).

4.4.2.3 Research

For these participants the role of research was to provide information which would make the communications referred to above more effective. Examples of perceived priorities were analysing or evaluating the various 'components' of the 'communications' process (S7): the nature of the 'target groups', the message, the techniques and media utilised and the outcomes (C1, L3, SAWMA, Council for the Environment 1989). Particularly notable were calls for research which focused on various groups of people, referred to as target - or "recipient" groups (SAWMA), such as 'under-developed' (S7, M3) communities, "the people" (P2), teachers or "the layman" (SAWMA). Research needed to find out what these people already knew, thought, felt or valued. The aims were to "effect better communication" (SAWMA), or to "customise" (P2) one's education programme in order to better "reach" (S3) or "penetrate" (P2) these recipient groups (see 4.3.3.5, 5.5 and 6.2.2). For a similar reason evaluation of the effectiveness of various "information transfer" techniques and media was seen as important (SAWMA, L3, Council for the Environment 1989).

Research aimed at finding out "how to ..." was listed as a research priority no fewer than 11 times in the report-backs from 10 groups of wildlife managers and natural scientists who participated in the SAWMA workshop. Examples (several of which had been introduced in 4.3.3.4) were research on how to "communicate scientific results", how to "rapidly educate people on how to control population", how to "reach communities", how to 'put the message across' and how to 'communicate key environmental problems to key decision makers' (SAWMA, also P2, S7, C1, S8, L1, M4, S3, S2). Another example was research on how to 'incorporate environmental education in formal education structures' (SAWMA) and how to inform central curriculum developers of the success of and problems with curriculum innovations (S1, S8).

Finally, a view prevalent among natural scientists was that environmental educators should do research on how to "translate" the needs identified by environmental scientists (see below) "into something that people can actually do something about" (L3), i.e., something which could be taught and which learners can use to take action or change their behaviour (L3).

The research priorities expressed by these participants clearly reflect an instrumental view of research. Research was regarded as an important source of information for management decisions (S3, C1, L3, SAWMA). The definition of good research was research that was "actually implemented" (S3, S8, P1, P2).

The information gathered by researchers was seen to be of a neutral nature, providing the 'balanced perspective' on environmental issues which otherwise easily inflamed emotions. Such a belief may underpin the opinion that we can and should identify priority topics for educational research on the basis of 'the most pressing environmental problems' as defined by 'scientific' research. Three scientists who were interviewed (L3, S3, A5) and several groups at the SAWMA workshop believed that the most pressing environmental issues will determine educational research priorities. S3 explained that " ... *priorities have already been determined* for us. It is about survival" (my emphasis).

There were no indications of recognition that the research which would identify the 'environmental priorities' in the first place would be socially constructed from particular perspectives. When asked to elaborate on this view two interviewees developed difficulties. For example, S3's list of priorities as 'determined' by neutral nature became, to his surprise, quite wide ranging. He first listed fresh water, followed by population pressure on natural [conservation] areas and then proceeded to include urbanisation, literacy and formal education as priorities determined by 'survival' needs, followed by health 'in the African context' and, in 'the national context', 'clean water, air pollution, job creation and the political process'. L3 also started his list of environmental priorities by mentioning water use and availability, but then noted that if one were to "split the environment into components" it may become more difficult to formulate such 'natural' priorities than he first assumed.

4.4.2.4 Context

As noted in 4.2.3 there were some patterns in the positions on environmental education of participants from different kinds of contexts. The position outlined here was the orientation most prevalent among research participants from the bio-physical sciences. Other exponents included researchers from

educational and social science departments with a positivist orientation and curriculum developers and funders within government education, conservation and environmental departments. Examples include S3, L2, L3, C1, M4, S7 and most participants at the SAWMA workshop. Given the large number of participants in the latter group, this was the predominant perspective on environmental education to emerge from the study.

The views of many of these participants were at least partly shaped by a strong concern about and commitment to the natural environment, which for a majority of them also constituted the context within which they worked. The majority of interviewees in this group were in senior professional positions.

4.4.2.5 *Comment*

The metaphor *reform* was chosen to describe the position on change reflected in this orientation which illustrates what could be called a 'management for social harmony' perspective. This involves a view of change as the re-ordering of society and nature to a presumed innate and ideal order. From this perspective, just as there are laws presumed to govern nature there are regularities which order or 'form' society (S3). These societal 'laws' are seemingly clear and uncontested or 'given'. [The sociological frameworks of the 'consensus theorists', such as Durkheim and Parsons (see Giddens 1989:705-6, p.725), are of relevance here.] Environmental problems are seen to stem from situations where people fail to obey nature's laws. Examples would be when they overstock their grazing land or when they themselves 'breed' beyond the 'carrying capacity' of the land (SAWMA, L3). To *restore* order we need "environmental and human resource management", to quote the HSRC (1993). There is an assumption that those with (unquestioned) authority and expertise can and should use the presumed objective and neutral information about nature and society which scientific research can and should provide, to make rational management decisions on behalf of society as a whole. Thus social change of a certain kind is desirable, but to be managed in an orderly fashion, utilising 'objective' research information for direction. More desirable than change, it seems, is control over nature; control over society is a means to effect control over nature on behalf of that society. (See 6.2.2 and 7.6 for elaboration on this issue.)

An illustration of this orientation comes from the programme cover of a conference on *Global Change and Social Transformation*, organised by the official South African body for research in the social sciences. The conference was aimed at establishing research priorities for the "management of social change" (HSRC 1993). By depicting a human handling a small and distinctly separate globe Fig. 4.1 reflects the conference organisers' view that man-agement⁹ was the appropriate response to global (including environmental) change.

Popkewitz (1991:19) notes that to approach social change as a process that can be managed by scientists "is to accept the underlying social relations and power that shape and fashion institutional arrangements as natural, normal, and inevitable".

⁹ The root of the word *management* is *manus*, which is the Latin for *hand*.

GLOBAL CHANGE & SOCIAL TRANSFORMATION

Programme and abstracts

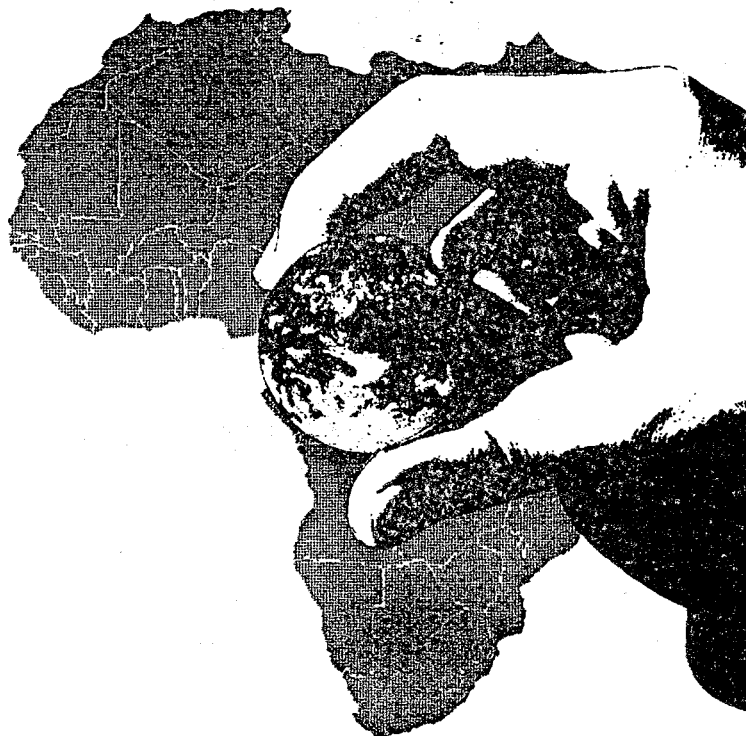


Fig. 4.1: A Perspective on Managing Social and Environmental Change

The changes envisaged are not fundamental to the ways in which society is currently organised; the latter are unquestioned and seen to need to require only greater efficacy (as expressed in S3's view that politics should be taken speedy care of so that people can 'get on with the job' of conservation). This is the second reason for the label 'reform'. I use the term 'reform' in this thesis to denote a semblance of change, what Popkewitz (1984) described as 'change as motion'. It contrasts with transformation which would indicate change of a fundamental or radical nature.

Expert-driven and instrumental, the orientation described here shares a positivist underpinning and other features with the technical interest and empirical-analytic approach to research described by Habermas (1974), Popkewitz (1984), Kemmis *et al.* (1983) and, in the context of environmental education, Robottom & Hart (1993) and Huckle (1993). It draws on behaviourist and cognitive educational psychologies and features the technicist notions of education advocated by science-based, international environmental education agencies such as UNESCO (1993). In some cases (in this study L2, A6) it shared ideological and philosophical strands with the fundamentalist and scientific Christian-National orientation which had dominated perspectives on schooling in South Africa (Ashley 1989) and the former South West Africa (Namibia). Sterling (1993, p.89) refers to "education for management and individual behaviour modification".

I claim in Chapter 6 (6.2.5.1) that this, probably the most prevalent position on research, environmental education and change in southern Africa and the world, particularly within established institutions, is unlikely to be a successful response to the environment crisis. My point will be that this orientation features the characteristics of modernism which have been repeatedly implicated as in fact underpinning and perpetuating the crisis (see 2.2). It tends towards continuing rather than disrupting current patterns of living.

4.4.3 Position II: 'Resolution'

Research and Education for Resolving Practical Problems and Improving the Status Quo - Community Needs and Liberal Education

"Practitioners are the real researchers" (P2).

There seem to be mainly two broad trends in opposition to the 'management for reform' orientation described above, in southern Africa. The first of these is oriented towards resolving problems experienced by 'practitioners' and 'communities' and improving educational and environmental situations.

4.4.3.1 *Change*

Like the management orientation this cluster of opinions also calls for improvements in current situations, also not through radical change, but through solving existing practical problems and doing what is being done, better. Perhaps motivated by a concern about difficulties encountered in the educational and developmental contexts in which they work, they tended to see change as the improvement of (own) practice and of the 'practical' (concrete, obvious) and localised situations. "We need to remedy and improve our situation", is how P2 described the view of change associated with this position. The idea was to work within the existing system to improve practice; as in Position I, the system itself was not questioned. The metaphor of 'resolving' practical problems evokes the image of a headache remedy dissolving in a contained solution.

A key feature of this orientation was the outspoken rejection, but often ambivalent treatment of the perceived 'top-down' approach to education and development of Position I (see 4.4.3.5). These participants argued that the nature of change was to be decided not by experts, but by 'practitioners' and 'communities' (P2, P3, M4). The latter terms, the focus of Position II, were used as follows: "practitioners" referred to those active in formal and non-formal teaching and community development work "on the ground" (P2), specifically as distinct from "experts", "theorists" (P1, P2), "academics" (A4) and "elites" including academic researchers (C3, M2, M3). The term "communities" was widely used to refer to groups of people who shared similar geographic locations, but also a similar socio-economic and educational background (usually poor) and ethnicity (usually people of colour).

The specific problems which needed to be solved had to be identified on the basis of the everyday life or 'practical' experience of these practitioners and the "basic" or "real needs" of the communities (A6). In apparent reaction to Position I's expert-driven model of change (see *Comment* below) these participants emphasised the importance of ordinary people identifying and solving their own problems. They were to do so, however, with the help of a developer or researcher who acted as a "facilitator"

aiming to be 'neutral' and to refrain from imposing own ideals (A6, L4, L5, P1, P2). Here some ambivalence was evident among several exponents of this position. These interviewees also noted the need to 'stimulate' (L4), "nudge" or "teach" (A6) and inform (P1) community members such as teachers or less-educated citizens in need of development; P2 was adamant that even a facilitator should not "lose the reigns up front" (see 4.4.3.5, 6.2.2, 6.2.3 and 6.2.5.3 for an elaboration on this feature of Position II).

4.4.3.2 *Education*

Teachers were also perceived as non-authoritarian "facilitators" (P1, L4) in relation to their students, whose own experiences and existing knowledge were seen by these interviewees as a valuable basis for educational processes (A4, M5). Frequent references to "experiential learning" and "learner-centred" approaches (M5, M6, M7, S8) linked this orientation to the underpinnings of liberal education (Ashley 1989), in which the individual learner represents a seed to be nurtured into full bloom. Notions of liberalism and humanist psychology also featured in an emphasis on the development of "life skills" (S1), the development of "concepts" (L5, S1) and the so-called "affective" dimension of "the whole child" (S1, L4). These educational objectives were seen as a progression from the educational approach of Position I, in that they went beyond the focus on cognitive knowledge, 'facts' and rote learning, and provided a frequently invoked "holistic" education (L1, L2, L4, L5, S1, S2, S8). Environmental education was to help improve education, not through radical transformation but by "infusing" (L5) an 'environmental approach'. The latter often significantly included experiences in nature.

For these reasons, South African educators with a liberal-humanist orientation described environmental education as "simply good education" (L4). In Namibia learner-centred, "activity-based" and "cross-curricular" (M5, M6, M7) approaches to education were core concepts of post-Independence educational renewal (MEC 1993) and environmental education was seen as an important vehicle to introduce and promote them (see Janse van Rensburg 1994).

4.4.3.3 *Research*

In keeping with the emphasis on practice there was a strongly voiced body of opinions that the role of research was primarily the solution of problems encountered 'in practice', by which participants meant the everyday professional activities of educational, field- and development workers. Research was "relevant" and "practical" if it resolved the problems of these 'practitioners', either during the research process itself or through application "at the coalface" immediately thereafter (A4, also P1, P2).

Continuing this theme, several interviewees wanted practitioners to be more or more centrally involved in research. "Practitioners are the real researchers", said one organiser of community- and school club-based projects (which he referred to as "environmental education for the people"). In his view practitioners were in contact with those concrete problems which research needed to address. L1 thought that practitioners would have "a feel" for what they would research and be more able to identify "the major knowledge gaps in their own fields". C5's experience led him to believe that those who should do the research should be "close [to] or within that context", adding that "there

should be somebody who should be an-outsider, but doing it with the local person". His view of researchers and practitioners closely cooperating was shared by V1, P1, P2 and EEASA workshop participants.

Several other reasons were given why it would be meaningful for research to be undertaken by practitioners. Most of these reflected a disillusionment with the nature of current research and with its perceived failure to contribute to practitioners' work. This substantive theme is discussed in Chapter 5 (5.7). It should be noted here however that skepticism about "academic" (S5) or "theoretical" (P1, P2) work featured strongly in the views making up this position.

Several of the participants in this group indicated that they valued academic research, but felt excluded by it (P1, P2, M3). One reason offered for this alienation from academic research was that it did not 'communicate' with practitioners (L5, M3, C4, C5, A4). If research was done by researchers working with practitioners, it had to be communicated in an accessible form (C1, C5, S6, M2), "translated for the really lay man" (A4). C3 and K2 indicated that making academic research accessible in this way was desirable, but not always a simple matter. The sharing of research findings was also perceived in different ways. C5 and S6 regarded ongoing networking around research findings as important, while C1 envisaged a simple one-way dissemination of results. Those who felt most strongly about the issue thought that unless theory 'spoke to' practitioners, it (and theorists) were elitist and of little relevance (P1, P2, S5).

There was a strong lobby for research to improve practice and the priority topics and styles mentioned included

- * programme/project evaluations which would provide information relevant to projects' executants rather than their funders (M6, M5, L1, K1), preferably on an ongoing basis (A4, K1);
- * research for the provision of rigour or discipline (eg. in resource utilisation) in programmes, again for the benefit of the executants or fieldworkers themselves (K1);
- * the design of new school curricula, educational programmes and materials (S1, S8, M7, L4);
- * action research aimed at solving specific problems (P3, K1);
- * research which provided the opportunity for reflection and the information which practitioners need 'to take their next step of action' (M5, L1);
- * needs analyses or rural appraisals aimed at helping communities to "identify" and address their needs (M1).

A final point about research priorities in this position regards the emphasis given to the importance of context. An example is P2's view that different geographical areas would have unique research priorities, and that research had to be specific to an area to be able to address the needs of the practitioners of that area. The view that research priorities were region- and or context-specific was fairly widely held (eg. P2, P3, M3, M6, M7; see also Irwin 1988:3). Some of these interviewees

thought that what needed to be studied in Bophuthatswana or in the north of Namibia (and perhaps the way in which it should be done) differed from what should be studied in Kwa-Zulu/Natal or in southern Namibia. Such differences in research priorities would for some (eg. P2) even occur between different parts of the same region, eg. between Sun City and Ganyisa in the former Bophuthatswana.

4.4.3.4 *Context*

The views elaborated here were expressed fairly widely, but few participants did so consistently. These opinions were most frequently expressed by research participants who were involved in non-formal environmental education in non-governmental organisations and some state conservation bodies, or in formal educational departments at South African universities with a liberal orientation. Most consistent among them were L4, M5, P1, K1 and K2.

The frequent emphasis of the 'practical' and discomfort with the 'theoretical' characterising this position might be due, at least partly, to the fact that several of its exponents worked in non-academic contexts. Those in academic contexts emphasised the constraints of narrowly-defined academic education which did not develop "the whole person" (L4) and of research and development models which negated the inputs of teachers and members of other 'communities'.

In the position outlined here, participants' involvement in environmental education was at times most strongly expressed as a concern for people, either in terms of individual personal development or in terms of improving the lives of those in difficult socio-economic circumstances.

4.4.3.5 *Comment*

Less coherent than the first, this orientation featured multiple interwoven and sometimes contradictory strands. These include anti-authoritarian, anti-intellectual, constructivist and liberal-humanist lines of thought. I tried to capture some of its features in the term 'practical', which interviewees often invoked and which I use in two ways. The first is in accordance with Grundy's (1987) interpretation of the *practical interest* described by Habermas (1972). This interest is towards shared meanings and communications and it was reflected in references to community, community needs, group learning, collaboration between researchers and practitioners and the involvement of teachers in curriculum development (referred to by *inter alia* M1, M5, L4, A6).

The second use of the term 'practical' illustrates some interviewees' 'anti-theoretical / intellectual' orientation. In the repudiation of the theoretical and academic and the emphasis on the abilities and needs of 'the practitioner' one encounters "the rhetoric of a practical knowledge that will improve the life of teachers" (Popkewitz, 1991 p.188) and other practitioners. This is one strand of the unequivocal rejection of research removed from the needs of "the practitioner" in its conception and its application - the stereotyped thesis that "sits on a shelf somewhere" (P2, S3, C1).

There was some ambivalence, however, in the rejection of the expert-and authority-driven approach to education featured here. The reaction against views of education described in the management orientation was often stated in the negative. For example, V1 said that education should be "non-

rote" and "non-authoritarian". She regarded the term "target group" as inappropriate (V1), but did not have a more appropriate replacement. There was a sense that the 'new' discourse of Position II had not always been clearly thought through (see some of the examples of inconsistencies in 6.3).

Also, as noted in 4.4.3.1, the notion of authority providing direction was not always completely abandoned. P1 and P2 explained that situations required that one should at times 'facilitate' and at other times 'lead'. Although P2 rejected "theory ... up there", academic and rhetorical discourse in preference to "environmental education for the people", "on the ground", this did not mean that he (as practitioner) did not want control over educational processes. It was important, he noted, not to "lose the reigns up front".

The discourse of other participants showed intertwining strands of both the 'Restoration of Order' and 'Practical Resolution' orientations, but in ways which clearly reflected an eclectic or even confused mix of ideas, rather than a synthesis of orientations. An example was A6's explanation of his "nurture and nudge" approach to community development, which was riddled with contradictions and P3's declarations on environmental education (see 5.2 and 6.3.2). It seemed that these latter participants were perhaps 'straddling' the two positions, or in the process of shifting from one position to the other, or simply confused. This issue is discussed in Chapter 6 (6.3) for I thought that such inconsistencies in discourse could illuminate attempts to change, or resistance to change, or both, but also that they could point to possible sources of changing discourse.

In general, though, proponents of Position II usually distanced themselves explicitly from the expert-driven stance of the management orientation. Educators and other 'facilitators' had to adopt a neutral stance to situations and to work with and from the needs and perspectives of 'communities'; research should be done by or in close collaboration with practitioners and should be based on their needs and insights into problems. Such views share features with what Popkewitz (1984:139-146) first labelled a Community-problem-solving approach and later (Popkewitz 1991:230) a Popularist approach to research. They share with that movement an assertion that the task of research is "to learn how to talk in ways that is [sic] deemed accessible for teachers" (Popkewitz 1991:233); a call for research to be "anti-elitist" and "functional" (1991:169); and a faith in wisdom or insights of the practitioner at the 'grassroots' level. In Chapter 6 I argue that by focusing exclusively on the so-called practitioner's perspective and on so-called practice divorced from theory, within a narrowly defined community context, this orientation limits the possibilities of re-visioning practice for a sustainable future.

A 'popularist' approach to research was also evident in Position III where it was linked, in contrast to the 'practical solution' orientation, to ideology and social structures constraining practitioners' insights and actions.

4.4.4 Position III: Reconstruction

A Critical Orientation to Research and Education

"Research should mobilise the masses for a hegemonic shift" (A1)

4.4.4.1 Change

The third position shares characteristics with the 'Practical Community Problem-solving' orientation. For example, it also rejects the expert-driven nature of the 'Reform through Management' position. It differs substantially from both the previous positions in that it is based on a more radical view of what meaningful change would entail.

This position represents the opinions of those participants who placed research and education in the context of deep or fundamental structural changes ('transformation', 'reconstruction') within southern African societies. These participants viewed existing social structures as problematic, relating them particularly to racial oppression and concomitant socio-economic and educational inequalities (C2, A1, M2, M3). Thus they called for radical "shifts" (A1) within perceived discriminatory social structures, particularly political and educational systems (A1, M2, M3), but also conservation agencies (A1) and "elitist" (M2, M3) or "insular" environmental organisations (A1).

4.4.4.2 Education and Research

A key concern was to utilise education and research in processes of "empowerment" (A1) and "capacity-building" (S6). Those in perceived need of empowerment and capacity-building included "marginalised" (K3, S6) groups, teachers (A1, C5), black youth (S6) and the so-called "Third World society" (M3) of Namibia and rural Zimbabwe (C2, C5). Knowledge empowered learners to critique and "shift" oppressive structures (A1, M2). Existing knowledge was to be shared more widely, "marginalised" (S6) or indigenous knowledge was to be valued more, and new knowledge was to be developed more democratically (M2, M3, A1).

Thus the notion of empowerment also underpinned calls for broader participation in research. The latter was seen to have an explicitly educative and developmental role (C2, C5, A1), which is why the concepts education and research are discussed here under one heading. As in the 'community problem-solving' orientation there was an aim to address problems through research-in-action; the difference was an explicit emphasis here on dismantling oppressive socio-political structures and ideologies through research and education. These participants would appear to support the view attributed to Karl Marx (Popkewitz 1984), that the task was not merely to describe the world, but to change it. The educator / researcher was seen as an 'agent' for helping the disadvantaged to overcome hegemonic oppression.

Following from the above, participatory (action) research was a popular method in which the partnership between practitioner and researcher was to be an enabling process for the former (L4, C5, S5, S6, P2, M1, C2, A1). This confirmed a widely perceived need to spread the base of those involved in research and to make research projects more than investigations, but educational processes in themselves (C3, C4, C5). Such research styles would embody and promote "participatory

democracy" (A1). Other research methods such as surveys were not excluded by these participants. Expertise was not rejected, but researchers were to put their expertise at the disposal of those who lacked such expertise and to provide the infrastructure for collaborative investigations (A1).

The critical position thus also differs from the 'practical problem-solving' and 'management for reform' orientations in that (through the notion on "praxis", used by A1) it rejects the theory-practice gap set up in positions I and II (see 5.4 for an elaboration). Research and education (theory and practice respectively, from Position II's perspective) were discussed simultaneously, as interrelated and dialectic concepts.

Research was to play a direct role in change. A1 explained, for example, that research should be employed to "shift" existing (education) policy, utilising participatory models which would allow those at "the grassroots" to "engage critically with policy as it is being generated". Involving teachers "collaboratively" in "radical" curriculum change and policy development was seen as important, for such processes were not only "democratic", but also educational and empowering for the participants.

Related opinions on the role of research were:

Research can and should be involved in the process of reconstruction (A1, S6);

Research can be used as a tool to develop a counter-hegemony and "mobilise mass support" (A1, also M2) for 're-dress' and "hegemonic shifts" (A1);

Research can provide environmental statistics to "pressurise government" to address environmental issues (specifically statistics about the degraded rural environment in Namibia to lobby for land redistribution) (M2) and to "mobilise mass support" for environmental issues (A1);

Research can and should inform the democratic development of policy and practice in post-Apartheid South Africa in an ongoing and democratic way (A1).

Priority research styles would be

"empowering" (C3, also A1, P2, L4, S8)

"participatory" (L5, also S5, M2)

"teacher-centred" (S5, also L4)

"interactive" (A6).

4.4.4.3 *Context*

Although the discourse of the 'critical position' often appeared, again a relatively small group of participants expressed these views unambiguously. They were A1, C2, C5, S6, M2 and M3, who hailed from contexts in which they usually worked explicitly for equality, often with strong political affiliations. These contexts were development agencies with social-justice perspectives, two 'progressive' publishing companies and social research and education departments in South African and Zimbabwean universities with critical or socialist orientations. Their environmental concerns were indistinguishable from concerns about the need for socially just education and economic development.

4.4.4.4 *Comment*

This orientation features Habermas' emancipatory interest in research (1972) and shares features with the popularist approach to intellectual enterprise referred to above (4.4.3; Popkewitz 1990); the 'critical position' documented by Popkewitz (1984) for research and by Kemmis *et al.* (1983) for education, as well as the concept of socially critical environmental education described by Fien (1993), Huckle (1993) and Greenall-Gough & Robottom (1993). The southern African orientation seems to differ, however, from the North American and Australian position, in that processes of capacity-building and empowerment are locally seen to hinge crucially on the provision of so-called "basic" knowledge (A1, C2), i.e. 'given', as opposed to emergent or mediated knowledge (see Robottom & Hart 1993).

The term 'empowerment' was fairly loosely used by many participants (with the notable exception of one government employee who thought that it might be too 'loaded' for general use). In the critical orientation however, it was a core concept. I will elaborate on the problems surrounding this concept in Chapter 6 in an exploration of the potential of the critical position on change, research and environmental education to indeed bring about radical transformations.

4.4.5 **Reflexivity and Social Processes of Change**

[Environmental Education] is by nature research-based and theory-driven (A2).

4.4.5.1 *Change, Research and (Environmental) Education*

This last cluster of views presented an emerging perspective in the study. As noted in 4.3.2.4, it was expressed consistently by only two interviewees (A2, A3), while others (C5, S6) occasionally expressed compatible viewpoints. In empirical-analytical research the perspective shared by such a small proportion of informants would not be deemed worthy of discussion. In this study, however, it is the novelty, clarity and coherence of this perspective, its links to contemporary social and educational theory and to productive local practice, rather than the number of respondents espousing it, which leads me to describe it as a significant feature of the studied 'landscape'.

This perspective was characterised by the absence of a number of key features of Positions I - III outlined above. Firstly, it lacked the grand narratives¹⁰ or 'single-mindedness' of the other positions (particularly the 'Critical' and 'Reformist' positions). It featured no claims that research can bring about change. It was the only cluster of views which consistently transcended the utilitarian view of research which was so prominent in the three positions described above (see 4.3.3.5 - 4.3.3.6). There was an assumption that research was not a means to an end, but rather part of an ongoing process (A2) of critical reflection in and on action, theory and social processes.

Knowledge was not only something useful to discover or apply, but also an ongoing collaborative clarification and the capacity to engage with change (A2); further, knowledge itself is a focus for critical reflection. (This is a significant difference from the critical-theory underpinnings of Position

¹⁰ See 2.2 for an interpretation of *grand narrative*.

III with its problematic notion of 'true consciousness', discussed in 6.2.4). There is an interest in "revealing" myths and social conventions (A3) which have become unproductive and in "challenging" existing theory (A2) - what Popkewitz (1991:188) referred to as the "re-making [of] commonsense".

This does not mean that there was no interest in change. Rather than espousing intervention to bring about change, however, there was an emphasis on "developing the capacity for change" (A2). Social processes of change were also regarded as a focus for research and education (A2), at the same time these were seen as broad processes of social transformation through "critical and contextual review and action" (A2). Significantly, environmental education, research and change were conceptualised as dimensions of the same broad process (and hence discussed here under one heading). Thus there was no sharp distinction between environmental education and research, the theory-practice 'gap' of positions I and II did not exist, and neither did the theory-practice dialectic of the "praxis" of position III.

Also, the distinctions between research and change and education and change were more blurred: environmental education was seen as (research-based) processes of change (A2, A3). As reflexive and ongoing processes of social change (A2) environmental education was seen to have a built-in evaluative and research-oriented dimension; by its critical and reflexive 'nature' environmental education was oriented towards "re-search" (A3). Research had come to be seen as inseparable from the educational process, thus proponents advocated research *within* rather than *on* or *for* environmental education (A2; refer back to 4.3.3.5).

The view that environmental education was "by nature theory-driven" (A2) was contested by K2, who pointed out that many environmental educators, both locally and internationally, worked on the basis of 'intuition', focusing on the 'practical' dimension of their programmes and largely ignoring the theoretical (See also 4.4.4 above). Both K2 and A2 believed, however, that every 'practical' action implied some theory. It would seem that in much contemporary environmental education those theoretical underpinnings are not clarified (see eg. 5.2 and 6.3.2.3). A2 argued that research has a role to play as processes of clarification, providing a critique of existing theories within the practice of environmental education and reflection on the historical shaping of that practice.

These participants' view on research priorities was that instead of defining priority research topics or areas one had to identify priority environmental education projects (A2) and then to research those using certain "priority styles" of research (A2, also A1). Priority projects would be those that "embody" certain conceptualisations of environmental education, that are productive (A2, A3) and that have an inherent evaluative orientation (A2). Priority styles of research would be

action-centred (A2, A3) rather than analysis-centred, although "analysis-in-action" would be the most appropriate style (A2)

less rushed, more reflective (C5),

process-oriented (M2) and

driven by theory, at the same time "uncovering" and "challenging" theoretical assumptions (A2).

"Research is there in order for the issues to be in the open, for people to debate ...", noted C5, who also described his work with teacher educators as "not divorced from the research aspect". Other examples which fitted into this cluster were calls for research of an "open-ended" and "reflective" nature, research which would "clarify concepts and processes" and research to set up structures for "on-going dialogue". Quinlan (1993) suggests that social scientists' most important role in environmental impact assessments could be to initiate such dialogue between developers and 'developing communities'.

With regards to views on what education and research can and should accomplish, the perspective here was that social transformation was less likely to flow from individuals' learning about environmental issues in isolation, than to manifest in communities (including teachers, researchers) acting together on a common agenda, engaging with local issues. There was an emphasis on finding out and developing insights in context, more than on taking reified knowledge in. Also, social change was to be studied not from a predictive or engineering perspective, but from an involved and 'enactive' ('doing' change, changing) and historical ('what has shaped change', how are we changing) perspective.

O'Donoghue's (1993b) conceptualisation of environmental education illustrates other features of this perspective on environmental education (see Fig.4.2). It depicts a focus on developing solutions (rather than giving information about problems) and a desire to take (mindful) action rather than to change habits (mindless behaviour). It calls for a recognition of "history" and "context" when engaging with environmental issues. Learning is neither a linear nor an individual process; it is also not context-free. Within action and context, learning takes place in the interacting processes of "encounter" with issues, "dialogue" about those issues and "reflection" upon them. In summary, environmental education is seen as a collaborative and reflexive search for solutions, where reflexivity refers to "critical social processes of experiential review" (O'Donoghue 1993:37).

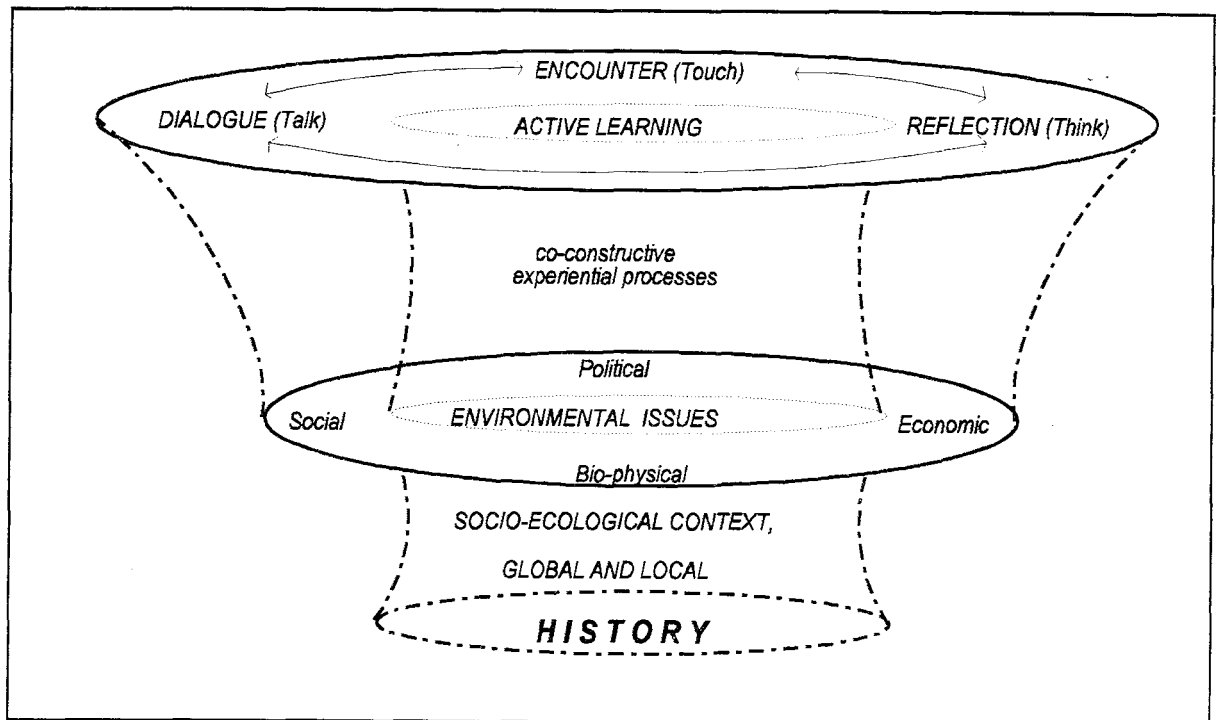


Fig. 4.2: An Emerging Conceptualisation of Environmental Education (O'Donoghue 1993b)

4.4.5.2 *Comment*

The 'reflexive' perspective was, as stated, an emergent one, espoused by a very small group of participants - A2, A3 and on occasion, C5 and S6. There is therefore no discussion on *Context* here.

The second point to note is that I use the label 'reflexivity' for this perspective advisedly. 'Reflexivity' as concept in social theory is used in different ways. A useful pointer is Beck's (1992) distinction between social and personal reflexivity. The latter is not a focus of this study. At a macro-level, Giddens (1994) refers to reflexivity in modernity to emphasise the increasing sense of 'self-awareness' of Western societies. Beck (*ibid*) uses the concept of 'reflexive modernisation' to describe a process in which the myths of modernity are revealed in the same way as some of the superstitions of pre-modern times were exposed by 'unreflexive modernisation'. On a micro level Lather (1991) and Bourdieu (Jenkins 1992) use reflexivity in relation to processes of critical reflection and demystification in research. I use reflexivity interchangeably with 'processes of critical reflection'. These processes of clarifying and revealing ordinarily hidden structures, assumptions and conventions are situated within own action and experience, *at the same time* drawing on a review of historically shaping influences. Thus instead of the critical theorists' focus on macro structure (Position III) and the community facilitators' insistence to seek solutions within micro situations (Position II), there is a constant interplay between multiple macro- and micro-levels. Notions of social epistemology and political economy (as developed by Popkewitz 1991) refer.

A second point to note, as participants themselves did, is that this emerging orientation to environmental education/research is not to be constructed as another position on the map. A3 questioned whether it was indeed a single orientation with "substance"; A2 believed that it had substance, but proposed a transitional nature (see below). In the 'landscape' metaphor, in which the three positions on research, education and change outlined above are depicted as three positions on the map, analogous to say three ecosystems 'on the ground', this perspective could be seen as a crossing of clouds over the landscape. These clouds are as real as the landscape below, of substance albeit a different kind of substance from the ecosystems. The clouds throw a shadow of doubt on the landscape on which they reflect (6.2.5-6.2.7). They have the potential to rain on and 'nourish' the situation, stimulating renewal and productivity. This might be their function, as they pass by. Commenting on an early draft of the thesis A2 cautioned against the creation of "a new band-wagon":

It seems to me that the last category ['Reflexive'] is not really that or a reality yet. It appears to be more like a tentative narrative shift that is illuminating the narrow orientations of the past and the dynamics of a changing SA. It might thus be a transitional tool ...

He observed that if one tried

... to paint the three earlier narratives [Positions I-III] as discourses in struggle on a social landscape of diverse shifts and change in the fabric of SA society ... reflexivity ... becomes ... [potentially] informative and useful for both making sense of this and moving forward ... or beyond ... the limitations / constraining orientations of past perspectives (A2).

The reflexive perspective on research in/and environmental education, as I would call it for purposes of communication, draws on a substantial body of current educational - and social theory. The notion

of reflexivity can be explored in the work of Popkewitz (1991), Bourdieu (Jenkins 1992) and Beck (1992). Authors like Bakhtin (in Wertsch 1991b) and Wertsch (1991a) emphasised the social-situatedness of learning and the importance of dialogue. The influence of complementary post-modern perspectives (rather than postmodernism *per se*) is also discernable in the absence of totalising grand narratives and in the critique of modernist assumptions. This is followed up in Chapter 6 (6.2.6-7).

4.5 DUNES OF MOTION: INCONSISTENCIES AND CONTESTATIONS IN POSITIONS ON ENVIRONMENTAL EDUCATION AND RESEARCH

In summary, I have identified, in the interpretation of the discourse of interviewees and other research participants, four different orientations to environmental education, research and change. All participants' views could be clustered within these four positions. This does not imply that every participant's views were always consistent, however. In several cases an interviewee's discourse was marked by substantial inconsistencies or ambiguities. These inconsistencies were illuminative (see 6.3, 7.3.3). They showed, *inter alia*, that these orientations could not be construed as distinct categories, but rather represented shifting positions or perhaps territories on a map.

These positions were posited early in the study as 'territories', because they appeared to be, to a greater or lesser extent contested. Researchers from positivist and post-positivist research positions, for example, explicitly questioned the relevance of one another's methods. L2 spoke of an 'east-west divide' between universities which espoused what he termed the "qualitative" and quantitative/classic/empirical research approaches (5.3). He personally promoted "the classic quantitative design" for, difficult as it may be, he reasoned, one simply *had to* "test" and "measure" the "affective" dimension of individual human beings. Without such measurement-based results, he believed, we would make no scientific progress.

L4, by contrast, argued that the positivist model (he referred to it as 'scientific research') has never solved any educational or social problems and has in fact in some cases 'deepened' such problems.

Both accused the other 'camp' of following their particular models for reasons of self-interest (5.3, 5.7.2.1). L2 and L4 also 'defended' their positions against a perceived contestation from me and/or others. P1, P2 and P3 launched what could be described as a defensive, non-personal 'attack' on A2 and A3, juxtaposing a 'practical problem-solving' position and the "theorising" (P3) of a 'reflexive' orientation.

One could argue that contestation rather than harmony between different positions tends to be the state of affairs, not only locally, but in environmental education internationally. The so-called paradigm debate at the 1990 NAAEE conference (Mrazek 1993) is an example. (See particularly Robottom 1990.) According to the literature, the diversity of positions in and perspectives on research (Habermas 1972, Robottom & Hart 1993), pedagogy (Kemmis *et al.* 1983; Robottom & Hart 1993), environmental education (Fien 1993, Huckle 1993, O'Donoghue 1993) and change (Popkewitz 1984) reflect deep epistemological and ontological disagreements (Lather 1991).

At the same time, however, at least in this study, some thin but tenacious threads span the (apparent) chasms between these positions (see Chapter 5 and 6.2.5.4).

Related to the latter observation is my second interpretation, that these positions are shifting (i.e. not fixed). This interpretation is based on

1. a personal observation of shifting discourses over the period of the study,
2. research participants' references of such shifts and
3. as mentioned above, inconsistencies in interviewee discourse which seemed to reflect a move between, or at least a mixture of, views reflective of more than one orientation.

While the views of some participants (eg. A1, A2, A3, S3) were (at the time of the study) clearly and consistently situated within particular positions, others' opinions seemed to be situated in, or moving between, at least more than one of the positions. It seemed appropriate to view each research participant's orientation as the coinciding 'knot' of a number of different strands, some of which are contradictory, but the majority of which would be consistent with a particular orientation. This seemed to be the most fitting interpretation for the data, and more appropriate than to 'label' or 'box' participants into discrete 'categories' - as several participants themselves tended to do. For example, in commenting on an earlier version of a summary of the research conclusions L4 tried to locate himself on the 'map of positions' and then declared that he had, since our interview, 'moved on' to the 'next' category (a critical orientation). (At the time of our interview his practice and discourse seemed to reflect a concern to move away from a positivist to an interpretivist position.) Two aspects of his view are important to note. They are the tendency to place oneself in a categorical positions on research and education, and secondly, the perception that one 'progresses' by moving from one 'category' to the next.

To illustrate how such an understanding differs from the one I propose in this study I turn again to the landscape metaphor. It would be appropriate to view the first three 'positions' on research, environmental education and change as shifting patches of characteristic vegetation, perhaps different ecosystems, on the landscape. They can be clearly discerned from each other in that they each have an own character (say savannah, forest, marsh) but the boundaries between them are not always obvious.

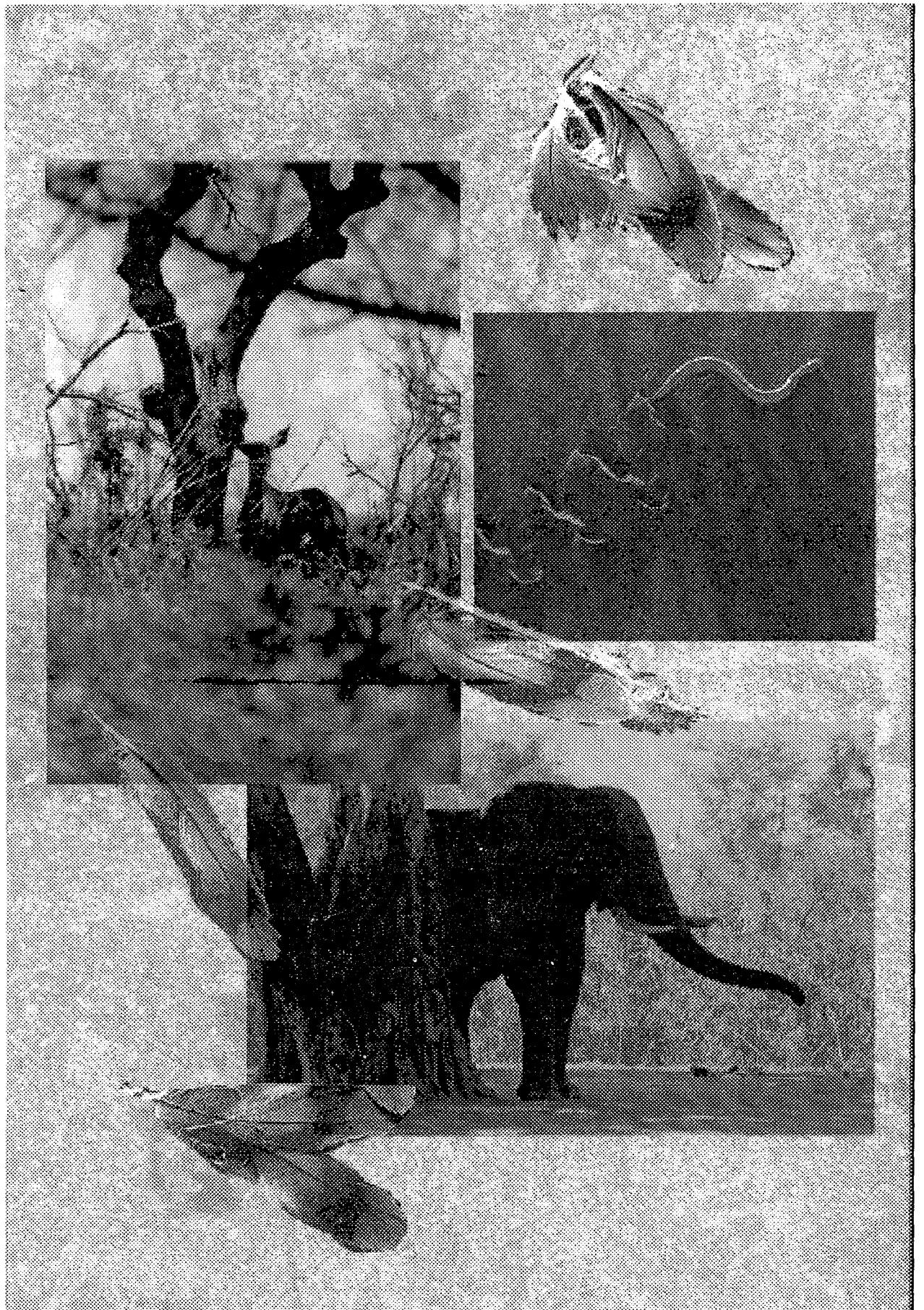
Also, as the climate changes, an ecosystem may change its size or character. During a drought the marshland may shrink, for example. The political-economic changes in southern Africa constitute probably the most significant 'climatic' change affecting shifts in the discourse of participants in this study, favouring the discourse of Position III (as I suggest in (6.1.4.2, 6.3), threatening Position II and pushing Position II in the direction of Position III.

Chapter 6 focuses on these broad shifts, as well as specific inconsistencies or ambiguities in interview discourse which appear to reflect or constitute change (Fairclough 1992). There I explore whether these inconsistencies are manifestations of change or possible sites for future change, or by contrast, whether they might reveal instances of resistance to change.

In Chapter 6 I also propose that the three most common orientations constructed from participants' discourse (and the 'models for change' implicit in them) fall short of the potential to bring about the substantial social change to which many participants in this study seemed to aspire. My reasoning is that recurring modernistic assumptions of the role(s) of research and environmental education in

social change limit that potential.

There is thus another reason for not construing the positions constructed here as discrete categories. They featured ideas which significantly occurred in more than one orientation, albeit perhaps in somewhat different form. Some of these recurring ideas can be closely related to 'models' of change in environmental education and research and are explored in Chapter 6 (6.2.2-6.2.4). Others emerged as new issues and themes within other data (see Chapter 5). These themes can be likened to animals which move within and between different ecosystems. Elephants occur in both forests and savannas; in forests they have relatively smaller tusks. The next chapter introduces and discusses those emerging issues and themes which I drew out of the research data as most significant in terms of the orientation of the study.



CHAPTER 5

EMERGING ISSUES AND INTERPRETATIONS

5.1 INTRODUCTION

In Chapter 4 I drew on results and the international literature to paint a landscape of positions in and perspectives on research in/and environmental education and, intertwined within them, views on change. I proposed that the broad scope of patterns in participants' views on these topics resonated within those of the interacting environmental education community in the region, and I likened these patterns to shifting ecosystems of plant communities.

Just as one would see animals living within and now and then emerging from such ecosystems, I identified within these results (and other data yet to be described) a number of inter-related issues, some of which recurred as themes. These themes and issues were substantive, in that their possible implications appeared to be significant within the research context. Although they were constructed from the research results, the issues and themes were emergent in that they had not been identified as such at the start of the study. In this chapter I describe seven such issues by introducing the results which revealed them and commenting on their possible implications. It seemed productive to follow or at least to point out the following themes and issues in pursuit of a clearer perspective on research priorities:

1. A lack of conceptual clarity on environmental education
2. A lack of clarity on and contestations of research methods and traditions
2. A construed theory-practice divide
3. A 'discourse of difference' in descriptions of research priorities
4. Environmental education as a tool for changing others
5. 'Accumulative' rather than 'transformative' knowledge
6. Illusions about the orientation, and disillusion with the outcomes, of academic research
7. The overt and implicit regulation of knowledge production within social institutions.

Discussions on these issues feed into Chapter 6 which explores the potential of institutionalised research and each of the four orientations described in Chapter 4 to engage with change.

5.2. A LACK OF CONCEPTUAL CLARITY ON ENVIRONMENTAL EDUCATION

5.2.1 Introduction

The study revealed a fairly widespread lack of clarity on the concept 'environmental education'. A rather limited or confused understanding among some participants is illustrated and discussed here as a substantive issue emerging from several sources of data, *including* explicit references to this issue by participants themselves.

5.2.2 Data Sources Revealing the Issue

5.2.2.1 *Direct Claims of Confusion*

For example, a marked proportion of interviewees (L1, L5, A2, K1, P1, P2, M6, M7, S2) announced that they and/or others had difficulties with the meaning of the concept. In response to Item 2 of the interview schedule (Table 3.1) several of them indicated that this was a particular problem area, either in their own professional context (C6, L1, L5, M7, S2, P1) or in the wider environmental education arena.

To quote P1:

We [environmental educators] are not clear about where we are. That is a problem area ... The actual concept of environmental education has not been clarified in people's minds ...

and M7:

I think at this stage there are major problems with the definition of EE and it would be useful if research could first of all shed some light on what exactly the issues are and what approach should be adopted ...

In fact I don't know what people mean by environmental education any more

5.2.2.2 *References to 'Problem Areas'*

Participants also mentioned other problem areas, in response to Item 2 of the interview schedule, which illustrated an uneasiness with the concept of environmental education. These were:

- * a perceived difficulty to put environmental education as espoused in the literature 'into practice'; this was reportedly related to its "holistic" (S2) or "broad" (M6, S2) nature (M6);
- * related difficulties associated with 'implementing' environmental education in the school curriculum (L2, L4, L5, M4, S1);
- * the problem of linking environmental education to development (A1, S5, A6); as A1

expressed it "to mediate the concept of limited resources and the notion of abundance in the context of development";

- * teachers' lack of confidence, know-how and skills in environmental education (K1, P2, S1, L1, L4).

With regards to the latter 'problem area' K1 noted that

[i]n the environmental education community there is ... a widely held perception that teachers are both uninformed and confused [about environmental education].

5.2.2.3 *References to Own View of Environmental Education*

Another source of data pointing to a lack of conceptual clarity was, predictably, responses to Item 1 (Table 3.1) which probed for interviewees' own understanding of the concept of environmental education. Five types of responses were illuminative in this regard:

- * Some interviewees (S2, L1, M6, M7, C2) found it difficult to express their understanding of environmental education, quite unrelated to any inability to express themselves in the language of the interviews. As M6 explained: "I am still boiling over in my mind what environmental education is".
- * Other interviewees (S1, S3, S4, M4) referred to definitions and guidelines in international documents, namely "the IUCN definition", "the Tbilisi principles" and "the [South African] White Paper" [on Environmental Education].

There was usually no explanation or elaboration to accompany these latter references. L5 and M6 expanded on what these references entailed, but their explanations were not particularly clear. M6 summoned up 'the five UNESCO objectives of EE' (awareness, knowledge, attitudes, values, commitment) only to add that he found the "Western concepts" 'values' and 'attitudes' problematic in the Namibian context. My impression was that the authority of these oft-quoted references were invoked by interviewees who were uneasy about this question, or about how I would react to their responses to it.

- * A third response to Item 1 (Table 3.1) which indicated a lack of conceptual clarity revealed inconsistencies in the eclectic 'models' of environmental education described by some interviewees (L5, P3, A6, S5).

To explain the models construed by these interviewees would necessitate more detail than is appropriate here, but one statement by a curriculum researcher could illustrate the point. I quote, adding the emphases:

By empower I mean so that they [adult learners from 'disadvantaged/ developing' communities] develop the understanding and the skills so that they can *act in their own interests* and the interests of their environment ... and the attitudes too, because

sometimes they just don't care, and *you've got to get the attitudes right*, too.

Following the literature on socially critical environmental education (eg. Fien 1993, Greenall Gough & Robottom 1993), the notions of empowerment for independent action on the one hand and externally-driven attitude change on the other hand, seem incompatible.

- * Several participants stated outright that they found Item 1 the most "difficult" question in the interview.

5.2.2.4 *Preparations for Interviews*

Another possible indication that participants grappled with the concept of environmental education is that several of them (eg. P3, S1, S5, K1, L2, L5, A5) prepared themselves for the interviews, on receiving the interview schedule, with written 'position statements' on environmental education. In some cases (P3, S5) these were used in 'mini-lectures' outlining their views on the concept to me, and my impression was that these participants wanted to clarify or at least confirm their positions on environmental education through the interview (see 3.3.2.2).

5.2.2.5 *Inconsistencies in Interview Discourse*

Yet another source of data possibly illustrating conceptual confusion was the contradictions which surfaced in interview discourse. Several interviews were riddled with inconsistencies and ambiguities¹. These occurred both within particular interviews (eg. the quote from L5 above) and between some interviewees' verbally declared views and their actions.

Thus in an interview M6 upheld 'learner-centred' approaches to environmental education, after he had ignored the agendas of participants in an environmental education workshop he ran in what he later described, without prompting, as an authoritarian ("top-down") manner inconsistent with his claims on the nature of environmental education. In response to Item 1, L4, P3 and S4 remarked on the inappropriateness of 'a model for EE'. They seemed to interpret a 'model' as dogmatic or prescriptive, a recipe rather than the conceptual framework which I had in mind when I phrased the question. However, two of these interviewees then proceeded to explain their approach to environmental education in the form of a model (which one of them also taught at a workshop I attended); another had aimed his own research at constructing models for environmental education curricula.

In 6.3.2 I explore some of the many explanations there could be for such inconsistencies. Here I focus on those instances where contradictions seemed to reflect undifferentiated conceptions of environmental education.

¹ For my purposes the terms *inconsistencies* and *ambiguities* indicate viewpoints declared or enacted by a person, that seem to contradict one another; in the case of ambiguities more markedly so than in the case of inconsistencies.

I need to state that I have no motivation to discredit those research participants involved. I therefore hope that my coding system and prudent use of quotations will provide them with the necessary anonymity. However, being anonymous does not take care of the fact that a reader might see participants being 'judged' here by a researcher with whom they had shared opinions in good faith. I am sensitive to this issue and recognise that any of my interpretations (which are based on discourse analysis as outlined by Fairclough 1992) are open to question. I also recognise that some of these contrasting views might reflect paradoxes rather than inconsistencies, but I have been led by the context within which they were expressed², to interpret them as the latter.

- * M6 claimed to be comfortable with the idea that environmental education "meant different things to different people", *yet* he also believed that there was a need to clearly delineate the field of environmental education, mainly for purposes of allocating funds.
- * S2 stated that environmental education had to be a broad, non-reductionist concept, *but* also that such a broad concept was not useful in our society.
- * L5 described environmental education as a means of "modernising" education, *but* also as related to post-modernism, which was in turn related to an "ecocentric perspective"; she then proceeded to report that Africans were more ecocentric than Europeans. (Postmodernism as concept has European origins and is largely confined to Western settings.)
- * Environmental education was described as non-authoritarian, 'simply good [Western liberal] education' by L4, *but* he also claimed that Western education was authoritarian.
- * P3 was aware of but unconcerned about the contradiction in his statements that "process" was more important than "product" in environmental education *and* that environmental education should apply "the science of advertising principles". He also noted that one "can't dictate anything to communities ... it has to be open-ended", *but* "with a big enough bombardment" one can and should "actually make people do things".
- * S8 stated that pupils have to be 'exposed' to the 'process' of environmental education. (Central to the rationale for environmental education as process is the idea of active involvement in that process. The latter is distinct from being 'exposed to' [Afrikaans: *'blootgestel aan'*] which seems to imply distance and passivity.)
- * L4 noted that environmental education was 'nothing new', *but* also described it as a 'stimulus for renewal'. (If the stimulus for renewal has been around for some time, why has the desired renewal not yet taken place? L4 did not seem to think that it has.)
- * A6 explained that the term 'environment' was generally interpreted too narrowly, to exclude social and economic dimensions, hence we needed the term "development

² One of the layers of discourse analysis is the context within which the text originated (see Fairclough 1992).

education", *but* development also referred to the capacity to solve environmental problems. (Thus there was a recognition that both concepts, development and environment, broadly include bio-physical, social and economic dimensions, yet they were treated as discrete fields; throughout the interview there was also ambiguity about the way environmental education and development education were enacted respectively.)

- * Like other interviewees referred to above, M6 stated that the objectives outlined at Tbilisi ("awareness, knowledge, values, attitudes, skills") should guide environmental education *but* he did "not actually go along with them" for values and attitudes were Western concepts inapplicable in Africa, where "the issue [was] survival".

5.2.3 Factors Involved in the Lack of Clarity on Environmental Education

Several of the inconsistencies listed above seemed to reflect interviewees' struggle to reconcile conventional wisdom with 'progressive' ideals which have come to be associated with environmental education. This interpretation is taken up in Chapter 6 (6.3.2) in a discussion of interview discourse revealing and struggling with inconsistencies as possible 'sites of change' or, alternatively, instances of resistance to change (6.3).

What were some of the other possible reasons for difficulties experienced with the concept of environmental education? Interviewees' own explanations included the 'broad nature' of either the question itself (A4) or the concept environmental education (S2) or both (M6). Others related conceptual difficulties to environmental education being a "new" or "novel concept" (P1, P2, M7) or at least new to Africa (P1, M6, M7). M7 thought that environmental education was "just not ready for Africa, or Africa is not ready for a certain brand of EE". Another source of confusion, it was thought, was a widespread tendency to confuse environmental education with "environmental studies", "outdoor education" or "biology" (L1, P1, P2, P3).

For several interviewees, but particularly S2 and P3, a specific conceptual problem was a dilemma arising from viewing environmental education as an object/ subject/ entity/ commodity on the one hand and as a broad, vaguely-defined and, S2 thought, mis-labelled process on the other hand. 'What qualified as environmental education and what not?' was a general question among participants from 'outside' environmental education circles (C2, C4) as well as some participants within (L1, M6). This dilemma is taken up below in a discussion of an interpretation of environmental education which I termed "education as a tool for changing others" (5.6).

All interviewees who broached the topic subscribed to the 'broad process' description of environmental education, for which the term "holistic" was used frequently and rather vaguely (K1, P1, P3, L2, L4, L5). However, several of them experienced problems with using the notion of environmental education as 'process' in practice. They reported that it was difficult to 'sell it to others' (S2), to make decisions about the allocation of resources (M6) or to develop school curricula on the basis of such a vague notion (S8). S2 insisted that he did not want to reify environmental education into a 'thing', but he echoed a view also articulated by P3: that the 'diffuse' and unfocused nature of environmental education as "education for life" made the concept difficult to 'market' and

in fact rendered it impotent, lacking in 'identity', failing to give educators a 'focus' and unable to make an impact. The perennial debate on whether environmental education should be a 'separate subject' or not (brought up by L2 in this study) can be directly linked to this conceptual dilemma, which will be picked up again in 5.6, where I describe a tendency to institutionalise environmental education in the light of these factors.

A group of research participants (A6, P1, P2, P3) also attributed conceptual difficulties with environmental education (and a resultant lack of action) to a powerful discourse in the South African environmental education arena, which they perceived (sometimes with great frustration) as constantly and seemingly arbitrarily changing. They animatedly referred to "academics" (A6), "theorists" (P2) or "EEASA" (members of the Environmental Education Association of Southern Africa, P1) as "playing with words" (P1, P2) or "labels" (P1), involved in "semantics" (P2) and "rhetoric" (P2). (See 4.4.4.3 for a description of the 'Practical Problems' orientation to research and environmental education and 6.1.4.2 where references to the role of 'intellectual trendsetters' is situated in the context of change).

P1 thought that the changing discourse on environmental education was a result of the lack of clarity on the concept. He believed that "very few people seem to know what EE is all about" and in "the academic world", where people are "theorising" and trying to clarify concepts, "there is still a lot of confusion". He explained,

today it's participation, tomorrow it's empowerment, the following day it's different,
it's no longer participation, it's no longer sustainable utilisation, it's something else

As a result of this "theorising", "we kept changing direction, that is why we are unable to take action, we are not clear where we should be going" (P1).

P1 regretted that the "leaders" in the field of environmental education in South Africa happened to be "academics" involved in theoretical pursuits which inhibited practice. Other interviewees (A2, A5, M7, L1), however, regarded clarity in the conceptualisation of environmental education as a research priority.

5.3 LACK OF CLARITY AND CONTESTATIONS IN THE AREA OF RESEARCH METHODOLOGY

Another area in which a lack of conceptual clarity manifested was that of research methodology. A number of interviewees, particularly among those not involved in formalised research, had little to say about aspects of research methodology (covered by Item 4 in Table 3.1). They believed that researchers should make the technical decisions on the most appropriate methods, and that they should base their decisions on criteria such as the need to get the research done as quickly and cost-effectively as possible (A5, S3, A4). These interviewees seemed to view research methods as neutral techniques best left to the domain of experts - a view which illustrates the 'institutionalisation' of research and the social role of researchers (see 6.4).

The views on research methodology among several of the expected 'experts' - those with an academic background and experience in research - at times, however, reflected a rather superficial understanding of the issues involved. I will try to illustrate from the data that this interpretation of these participants' responses is more than a reflection of the fact that I disagreed with their understanding of the literature on research methodology.

In the case of P3, for example, both *the use of terminology and the assumptions* underlying his views were problematic. To begin with, he believed that researchers could choose "empirical or more humanistically orientated research or a blend of the two", as they wished. This statement reflects at least three refutable assumptions: That 'humanistically oriented' (by which he implied non-positivist) research was not empirical; that the word 'empirical' is to be equated with positivist research; and that positivist and non-positivist research traditions were compatible and interchangeable. He rejected a view that "EE research is only compatible with the post-positivist or naturalistic paradigms", regarding it as an "equally invalid and dogmatic" position to those who argue that positivism provides the only valid approach to research. P3 seemed to think that the question about which methods are more appropriate was an "academic" (technical) one, and noted that research decisions should be led by the need to address social change, rather than "any academic criterion". (See 6.4.10.1 for a deconstruction of the notion that methodological choices are merely technical or personal matters.)

It has been convincingly argued (eg. Robottom 1990, Lather 1991) that (1) the choice of research tradition is an ideological (or 'political') one which effects different outcomes and that (2) an eclectic use of positivist and non-positivist research traditions represent an untenable attempt to combine conflicting epistemologies and ontologies (Guba 1990, Lather 1991).

A limited understanding of methodological issues was also reflected in the *discrepancy between some interviewees' discourse and actual practice*. Again P3 provides an illustration. He claimed that action research was a priority research method, because it fitted with his interpretation of "the Tbilisi principles". He described it as an "unbelievably powerful" method, its true essence being its ability to bring about social change. His proclaimed approach to action research was participatory: a community should decide on how to gather data and on which data/knowledge was valid and reliable. His own research based on this approach (detail withheld for the sake of anonymity) however, failed to allow for such agenda-setting by others. Further, he saw "empirical" (equated with positivist) research as useful in that it could "determine" the direction of the change which action research would then bring about. This very limited understanding does not reflect the notion of participatory action research as described in the literature, where research directions are said to be determined by participants' interaction (see eg. Reason 1994, Elden 1981; also 3.2.1 and 3.2.4).

Few interviewees found it possible or useful to discuss the notion of research paradigms (in response to Item 4, Fig.3.1). The question was usually cursorily answered or ignored, or the interviewee declined to comment. *Few of the environmental educators who participated in the study seemed to have a good grasp of either the term paradigm or the 'paradigm debate'* (see Mrazek 1993), which has already come to be treated as dated by educational research methodologists drawing on post-structuralism (eg. Lather 1991:13-15).

In one of the research interviews in which research traditions were discussed in some depth the expressed views had transcended a paradigmatic perspective. From a post-paradigmatic orientation A2 regarded "positivism, interpretivism and critical theory [as] things of the past" and suggested that one could not define one's existing theories and ideology as a paradigm - "only looking back can one see rivers of change in one's work". To him the paradigm debate was only useful to show the 'dialectics' of social life.

Two Namibian interviewees interpreted the concept paradigm in its more general sense of a worldview. Both M6 and M4 associated the term with separate and distinct Western and Africa worldviews (see 5.5) and both called for the development of a special African paradigm for Namibia.

The other interviewees who commented on the notion of paradigms in the context of research priorities focused on a distinction between a positivist and a post-positivist paradigm which they respectively referred to as "the scientific paradigm" or "scientific method" (L4); "the Newtonian view" (P3); "logical-positivist" (L4, K2), "quantitative" (L2, P3, P1), "reductionistic" (L5) or "empirical" (P3) research and on the other hand, "qualitative" (L5), "post-positivist" (P3), "humanistic" (P3), "naturalistic" (P3) or "non-reductionistic" (L5) research. In several cases (P3, L5 in particular) I thought that an *inconsistent use of terminology reflected an undifferentiated understanding of the subject matter*.

This pertained not only to interviewees, but also to other researchers encountered during the study. One revealing occasion was a Post-graduate Research Training and Supervision Workshop organised by the Centre for Science Development (CSD) in South Africa, where a group of established local educational researchers showed little cognisance of research traditions other than the positivist (CSD 1993). The second was a workshop on *Global Change and Social Transformation*, also organised by the HSRC (1993). Here several presenters referred to two philosophically and ideologically distinct research traditions merely as "quantitative versus qualitative research" (L2 did the same in an interview). Upon questioning these researchers indicated that they were not simply using the terms as a short-hand, but as valid and indeed the only known labels for differentiating research traditions. For them the differences between the research traditions lay in the format of the data collected and analysed, and *epistemology and ontology were reduced to the level of technique* (see Lather 1991 on this widespread convention).

Popkewitz wrote about "professionalized incompetence" (1991:11) in the United States, attributing it to the organisation of the educational science arena in that country. This incompetence, he argued, was "more widespread than we realize" and was to be found in

the formulas that are used to write dissertations, in the distinctions of statistics or qualitative methods as research courses rather than as procedures that are part of and understandable in relation to the projects of research. It is in our talk about descriptive research, qualitative versus quantitative, value-neutrality, and the separation of theory from practices, the textual from the social.

Interviewees who recognised gaps in their understanding of concepts such as environmental education or research paradigms reacted differently to the accompanying uncertainty. Some (eg. L1, M7)

wanted *research to provide clarity*. Others (perhaps P1, P2, L2 and A6) appeared defensive and wanted to continue their practices as before without having to rethink their conceptual understanding too often.

The latter view echoes a phrase from the quote from Popkewitz above namely "the separation of theory from practices". This is the next substantive issue to be discussed.

5.4 A THEORY-PRACTICE DIVIDE

A third theme to emerge from the results of this study was the tendency among many participants to distinguish sharply between 'theory' and 'practice'. It should become clear from the discussion below that the conceptualisation of theory and practice as separate entities have implications for conceptualising priority research styles.

The 'separation of theory from practices', as Popkewitz (1991:11) described it, took one of two forms: a perspective that theory was superior in that it preceded and directed practice (eg. S8, SAWMA) and a perspective that practice was superior to theory in that it had greater 'relevance' (eg. P2, C4). The reader will recall the latter set of views from the description of Position II in Chapter 4 (4.4.4). Both perspectives are illustrated below.

The view that theory had to precede practice was part of a widespread conception of research as a 'theoretical' enterprise which informed practice from a privileged, neutral/objective, 'scientific' position outside of practice. Several participants called for research to provide the theory to be 'applied' in practice (eg. K2, S1, S3, S8, M5 and SAWMA attendees). Of note was a particular version of curriculum development proposed by several interviewees from government contexts (M4, S1, S8), in which a theoretical model was developed through research outside of practice, for subsequent implementation in practice. The Afrikaans term *praktykmaking* used by S1 to describe the second stage of this model literally means to turn (theory) into practice(s). The assumption can only be that theory is not (yet) practice, it is conceived of (as) outside the context of practice.

This notion underpins the Research-Design-Develop-Adopt or RDDA (Havelock and Papagianis quoted in O'Donoghue & McNaught 1991; Popkewitz 1984:131-3, 137-8) model for the development of teaching materials, curricula or development projects. The model consists of distinctive phases in which theory is developed in a research stage, followed by the design of an intervention and, hopefully, its implementation in 'practice'. The RDDA model has been criticised for its 'elitist' features by L4, who proposed action research as an alternative which would give the 'users' of theory or the products of theory an opportunity to partake in its development.

Here my concern is, however, with the RDDA model's premise that research (or 'theory') is separate from teaching, development work and other 'practical' activities. Interviewees who promoted versions of RDDA research (S1, S8, M4) in their descriptions of research priorities, seemed to hold a view of theory and practice as two distinctly separate moments in say, a curriculum development process. The same conceptual theory-practice divide might be implicated in the views of those

participants who attributed a perceived research-practice gap to much current research being "irrelevant" (P2, also S3), because it could not be "applied to" (A6) or 'implemented in' (S8) practice (see 5.7.2.2). Current research might indeed lack relevance, but the point here is that this perspective actually sets up the gap which it then questions. By conceptually dividing theory from practices and designing research/ teaching/ curriculum development on the basis of that division, research/ development on the one hand is separated from implementation/ dissemination on the other hand; failure to bring about meaningful changes is then ascribed to the dissemination gap (Robinson 1992) or the failure to communicate. If, however, theory/research is seen as *a dimension within* rather than *a precursor to* practice, a more productive search for reasons 'why educational research [may] fail to solve educational problems' (Robinson 1992) can then be directed away from a constructed rather than actual 'theory-practice' gap (see also 6.4.5 and 6.4.6).

The second perspective discussed here, that practice is more important than theory, surfaced strongly in Position II, described in Chapter 4 (4.4.4). Some of these participants made frequent reference to "practitioners" "on the ground" in direct contrast to "theoreticians" who are "busy with theory ... up there" (P2). They tended to reify 'theory' in a rather disdainful (P2) or intimidated (A6, P1) manner. They explained that too much emphasis was being placed on theory in environmental education circles (S2, L1, P1, P2), so much so that it discouraged initiative and hindered action, for P1 argued that "action-oriented" people were held back by the notion that they had to ask "academics" for their "blessing" before they could proceed with "actual" environmental education. (See also 6.1.4.2 on the 'intellectual pace-setters').

This perspective also conceptually severs 'practice' from its link with the theories which are held by 'practitioners' about their own practice, what Robinson (1992) refers to as "theories of action" or "theory in use". Thus practices are reified, while theory is defined narrowly and relegated to 'loftier' places. I argue in Chapter 6 (6.4.6) that this practice (or theory!) limits one's ability to reflect on one's understanding of practices and to reconceptualise or improve them, for those underlying assumptions and their origins (theory) are neither clarified nor questioned.

In this study, both groups of participants who construed 'theory' and 'practice' as conceptually separate entities expressed an ideal in which practice and theory would inform one another. However, it would seem that by conceiving of the concepts as dualistic, one prevents them from doing so.

The perceived theory-practice division is deconstructed through an understanding that theories are only made manifest in actions/ practices and that all actions/ practices are manifestations of theories, whether they are articulated or not. The separation or boundary between them is thus more apparent than real. When it becomes unproductive, it should be discarded. (See also Janse van Rensburg 1993a). Robinson (1992), drawing on empirical research aimed at solving educators' problems encountered in practice, makes a good case for the notion of "theories-of-action" being a more productive concept in efforts to address such problems.

I will not discuss the tendency to separate theories from practices in any depth, but will touch on this

theme again in discussing the two different perspectives of change (as driven by externally-derived theory or as centred within practice with no acknowledgement of theory) which emerge from the above, in Chapter 6 (6.2.2 and 6.2.3).

5.5 A DISCOURSE OF DIFFERENCE

5.5.1 Introducing the Issue

A further substantive issue within the research results also involves apparent boundaries. These are the boundaries which participants drew to define differences between groups of people; I illustrate below that research to study these differences and to develop ways of dealing with them, was often perceived as a priority. This trend appeared as a 'discourse of difference' among several research participants, i.e. an emphasis on differences between presumed homogenous groups of people and a desire to study these differences. The perceived value of such study was usually the development of better techniques of communicating with or influencing such groups of 'others'.

This discourse is illustrated by an example from a member of the then Council for the Environment's Education Committee (1989), who (independently of this study) listed six research priorities, one of which was the "establishment, through controlled survey, of the attitudes and values held by different age, population and economic groups towards environmental matters". In this study the 'discourse of difference' was particularly prevalent among research participants from South Africa and Namibia (M3, M4, M6, S8, A5, A6, SAWMA). This seemed to be related to perceptions that the 'cultural diversity' in South Africa was a 'unique' feature and even a problem area in environmental education, one about which research was required to provide guidance (S8, A5).

Within this theme, research priorities were related to different cultural, ethnic or socio-economic groups or "communities" (S3, S4, M4, L2, L3, S8, SAWMA). The "underprivileged sector of our society" (SAWMA), "local [Black] people" (P2), the "Third World situation" (in Namibia, M4) or "Third World society" (M3), rural groups, the 'underdeveloped' (S7) or "*agtergeblewenes*" ('those who stayed behind' when others developed economically, S7) were seen as the most important focus for research.

These 'target' groups for research by and large comprised people of colour. From the perspectives of the research participants, whether these participants were 'black' or 'white', these groups constituted 'Others'. By that I mean that none of the participants who called for research 'on' or 'in' such groups actually identified themselves with these groups. Contemporary educational literature refers to the practice of viewing groups or persons as significantly and homogeneously different from a culturally dominant 'norm' (such as 'white', male, educated, urban, Western) as 'othering' (eg. Fine 1994, see also Lather 1994).

5.5.2 Factors Involved in the Choice of 'Difference' as Research Focus

5.5.2.1 *A Perceived Need to 'Deal With' Cultural Difference in Southern Africa*

The point of studying the needs, values, perceptions, culture and so forth (see 4.4.3.5) of these groups of others was related, firstly, to a perceived need for guidelines on how to 'deal with' cultural differences. Several interviewees (P2, M4, M6, S8, A5) mentioned 'difficulties' associated with dealing with ethnic/cultural and other differences in South Africa and Namibia as a problem area in environmental education. Among the reasons for viewing cultural differences as a problem area to be studied might be an opinion that there is "an incredible lack of interest in environmental issues among black people ..." (A6), although this view was also hotly disputed (K2).

5.5.2.2 *A Perceived Need for Different Approaches to Different Contexts*

Secondly, research on differences also relates to a fairly prevalent notion that there should be different "approaches to environmental education" for different contexts (P2, P3, S2, S4; see 4.3.3.5). Some interviewees believed that research priorities would vary between different "ethno-geographic" (M6) regions in South African and Namibia, owing to the different circumstances (M6, M7, P2) or the 'inherent' differences between different ethnic groups (P3). P3 noted that the "needs" in (the former) Bophuthatswana were different from those in Natal (now Kwa-Zulu/Natal): having 'worked with' both these "races" (he was referring to two ethnic groups, BaTswana and AmaZulu) he thought that the "level of education" (elsewhere he replaces this with the term "intelligence") of the one group was higher than that of the other.

5.5.2.3 *Positive Contributions from Diversity*

Information about different perceptions and forms of knowledge was also valued by research participants for reasons unrelated to the desire to influence them. There were references to the need for research to explore the beliefs and insights of others, in order to add to the richness of existing mainstream perspectives, utilising "indigenous wisdom" (A3) and African or traditional values (SAWMA). Here diversity was seen not as a problem, but as a source of new answers to environmental problems. A focus on so-called indigenous wisdom is fairly prevalent in southern Africa, as a recent publication of the (South African) Foundation for Research Development (FRD 1994) shows. The expansion and reconceptualisation of mainstream knowledge through a dialogue with less conventional knowledge streams has been suggested as an important response to the environment crisis (Beck 1992, Hall 1981, Miller 1993, Mtshali 1994). The current focus on indigenous knowledge in southern Africa might in some instances however also reveal strategies to simply "bring on board" (workshop participant, IDRC 1994) with mainstream views, those perceived as currently outside the reach of the "conservation message" (SAWMA).

5.5.2.4 *'Difference' Determines Strategy*

In this study the most prevalently expressed motivation for research into differences between groups was thus the belief that insights into such groups enabled one better to influence them, convince them of a particular viewpoint, address their needs, or work or communicate with them (SAWMA, C3, P2, P3, L1; see 4.3.3.5). The question listed by one group of SAWMA participants as a research priority - "Who is our target group?" (see 4.3.3.5) - might reflect a need to establish who does most damage to the environment, and perhaps also who would be easiest to persuade not to do so). The latter wish at least partly motivates USAID³-sponsored surveys in southern Africa to establish "targets of greatest opportunity" (GreenCOM 1994:7, see also Tyson 1994).

According to my interpretation of these results within the southern African context, much of this discourse is based on assumptions that might be summarised as follows: 'These communities/ groups of others harm the environment⁴. If only they knew what we know or saw things as we do, they would do less damage to the environment', followed by 'If only we knew more about those people, we would understand better how to make them see things our way (and do less damage to the environment)'.

If these are indeed the underpinnings of much of the discourse described here, it would indicate a continuation of a convention of 'blaming the victims' (which Timberlake 1985:12 linked to both "essentially colonial" attitudes and "much environmental thinking today") into a convention of 'studying the victims in order to better educate them'. P3 believed that environmental education was most relevant to rural people, not only because it was here that poverty and degradation were most rife, but also because rural people were often the "recipients" of pollution from elsewhere. This point is picked up below (in 5.6).

5.5.3 **Developmental Theories and the Notion of Difference**

The views I interpret under the label 'discourse of difference' include references to different environmental education strategies for different age groups. Following the Piagetian notion that people learn differently and have different educational needs during universally different life stages, several participants (SAWMA, L2, S4) as well as the Council for the Environment (1989) indicated that it was a priority to study these different age-related needs. Those who explained the rationale said it was to design different teaching strategies for different groups (children of different ages, adults).

³ The United States Agency for International Development.

⁴ Issues often mentioned in connection with these groups (eg. by SAWMA participants) were littering, deforestation, overgrazing and overpopulation.

The utilisation of formal⁵, stage-based development theories to explain the need for different teaching strategies for different age groups warrants some scrutiny. Piaget's cognitive-developmental model has been questioned from philosophical (Phillips 1987) and 'post-formal' (Kincheloe & Steinberg 1993) perspectives, while O'Donoghue (1994) questions "the logic of ages and stages" in an environmental education context. Kincheloe and Steinberg (1993) remind us that unlike Piaget's theory of universal, discrete, hierarchical stages of development predicts, many young children have the ability to think abstractly on occasion. At the same time many adults fail to do so on a regular basis. This negates the surmised universal nature of hypothetico-deductive reasoning, supposedly the most advanced thinking stage. Similarly, Kohlberg's grand narrative of stage-like moral development has been discredited by Gilligan (1982) from a feminist perspective. She questioned the supremacy of his postulated ultimate stage of moral development on ethical and epistemological grounds. Local environmental educators (L2, S4) who take recourse to these theories to explain their work, do not address these questions. The *Song of the Earth Series* (Opie 1992, Opie & Schuil 1993; see also Opie 1990) is a prominent example in the South African context. The popularity of these educational theories, as reflected in this study, might relate to a modernistic search for certainty and simplicity (see 6.2.5 and 6.2.6; also Kincheloe & Steinberg 1993) and step-like teaching procedures (see Cherryholmes 1988). A desire to manage or promote education on the basis of scientific assumptions, as observed in the interview with L2, could also play a role.

There are a number of other assumptions underpinning the 'discourse of difference' which warrant examination in the light of their prevalence in descriptions of research priorities.

5.5.4 Problematic Assumptions within and Outcomes of the 'Discourse of Difference'

5.5.4.1 *The Reification of Difference*

Firstly, there are indeed differences between individuals and between groups who form affiliations in dynamic ways and at multiple levels. However, pre-defining such groupings and presuming them to be stable and homogeneously different on the basis of certain characteristics, are questionable. Can we assume that all rural people have the same kinds of thoughts ('values and attitudes') by virtue of the fact that they are defined as 'rural'? A6 referred to research that has shown that "black communities do not have the same perceptions of the environment as many white communities", an opinion he himself contradicted later in the interview (see 6.3.2). Assumptions that groups of people are consistently different from other groups, because researchers⁶ can assign them to various categories (rural, poor, black, female) are not only naive. The roots of ethnic and other forms of discrimination intertwine with this line of reasoning. The constructed features of the categories

⁵ The term *formal* is used here, following Kincheloe & Steinberg (1993) to denote "an acceptance of a Cartesian-Newtonian mechanistic worldview that is caught in a cause-effect, hypothetico-deductive system of reasoning ... [accepting] an objectified, unpoliticized way of knowing ... emphasizing certainty and prediction" (p.297).

⁶ Popkewitz (1991:227), quoting Bourdieu, refers to researchers as "the supreme classifiers".

become reified as reality: Popkewitz (1991:225) argued that "educational theories ... [which] impose visions, divisions, and distinction onto empirical phenomena ... have the effect of creating the categories as the reality itself".

5.5.4.2 *Assumed Differences Fail to Correspond with Reality*

Secondly, and related, there is reason to question the sharply-drawn distinctions between urban-rural and First/Third world settings. Participants in this study based different environmental education strategies (4.3.3.5), development (A6) and funding (S5) strategies and proposed research designs (SAWMA, S8, M2, M3) on such distinctions. Such designs and the conclusions based on them are problematic in the light of the inextricable links between and fluidity of these settings. Also, conventional definitions for 'urban' and 'rural' based on the provision of services, population densities and the types of economic activity (primary, secondary or tertiary; see Swanevelder *et al.* undated:99) are currently inappropriate in southern Africa. 'Informal' settlements within cities are often without basic services such as electricity and the removal of waste. Unemployed city dwellers are encouraged to engage in primary production (eg. food gardens in Khayalitsha, Cape Town). By contrast, those living far from cities are not infrequently engaged in tertiary economic activities, such as the provision of services (eg. hairdressers and bars in Ondangwa, Northern Namibia). The 'rural' areas in which they live are often more densely populated than towns defined as 'urban' (eg. Maputoland, Kwa-Zulu/Natal v. historically 'white' Karoo towns in South Africa).

The questionable distinction between 'Third World' and 'First World' contexts reflects a particular model of what 'developed' entails and of how development should proceed in those countries described as 'developing'. This model has serious implications for the environment crisis. Many believe that 'First World' modes of development are ecologically unsustainable (Meadows *et al.* 1983, Korten 1992, Trainer 1985). Furthermore, if analyses of environmental problems are based on a sharp First/Third World divide, they fail to recognise the ways in which these contexts are historically and currently linked through a multitude of channels, including colonialism; international politics and trade in, eg., primary resources, hazardous wastes and weapons; and international aid programmes (Barnaby 1988, Ekins 1994, Trainer 1985, Korten 1992).

5.5.4.3 *Superficial Surveillance*

A third aspect of the issue of 'difference' which warrants comment is the quality of the data on assumed shared and distinguishing features of groupings of people, as collected by research surveys. Survey-type studies tend to assign significance to superficial similarities and differences within large population groups (Taylor 1994). They do so, for example, through questionnaires to assess 'attitudes', 'needs' or 'behaviour', on the basis of pre-defined categories and statements made in a particular context, at a particular point in time. These are then construed as characteristic dispositions, ignoring the fact that research 'subjects' are often dynamically reasoning people within influential and changing social contexts.

Taylor (1994) responded to one of a number of international surveyors of the southern African

educational and research landscape, during the period following the "opening up" (M3) of Namibia and South Africa to would-be donors of foreign aid (eg. ECOSA, IDRC, USAID). GreenCOM, an environmental training programme funded by USAID, for example, employs as a first stage "descriptive research to understand target audience characteristics to assist program managers as they design interventions" (USAID 1994:8). This illustrates the desire of donors to survey their "targets of greatest opportunity" (USAID 1994:7) in order to better understand and influence them in a process of "persuasion" which has in this case been labelled "social marketing" (USAID 1994:11; see also Tyson 1994).

5.5.4.4 *Comment*

The desire for knowledge about others in the service of communicating with them about or 'persuading' them of the wisdom of 'our' insights is a crucial issue to confront. It is discussed below with other results which reflect a view of environmental education as a tool to change 'others' (5.6) That discussion also links with the notion of studying and educating the 'victims' of environmental dilemmas.

It needs to be reiterated that this exploration of the discourse of difference is done in recognition of the existence of differences and the value of understanding such differences⁷. There is no reason to argue that people are all the same. However, the very noticeable emphasis on 'difference' in this study, its explication and resultant reification creates the impression that participants saw it as a (the?) key organising dimension of society, *inter alia* determining research priorities. A large proportion of participants focused on differences and on studying them in order to draw ever sharper distinctions between groups of people, with the intent of choosing from or developing a repertoire of strategies to help 'develop' or influence them.

In the global (see Beck 1991:5) and particularly the southern African political and environmental context 'difference' seems a less meaningful orientation than that of "building bridges" between groupings (Taylor 1994:1). The implication would be that researchers need to use their spotlight less to define communities through difference and more to attempt the crossing of conceptual boundaries, to build community through communication.

Dissolving dualisms such as 'First World/Third World', 'scientist /community' may create conceptual space for an "epistemological dialogue" among these dialectically derived or shaped sub-cultures (Beck 1992:5) and for the collaborative, intersubjective clarification and resolution of environmental problems. The alternative is, in the words of Carby (1990:85),

... theories of difference ... [which] leave us fragmented and *divided but equal* in an *inability* to conceive of radical social change (my emphasis).

⁷ In questioning an emphasis on differences between 'them' and 'us' I am not attempting "to turn the Other into the Same" (During 1993:449), i.e. to universalise perspectives and value systems. I am rather questioning the universalising tendency within one-sided attempts to turn 'audiences' and 'targets' to an unquestioned point of view. See During (1993).

The limitations of the discourse of difference to develop meaningful responses to the environmental crisis is picked up below in 5.6 and in Chapter 6 (6.2.5.3).

5.6 EDUCATION AS A TOOL FOR CHANGING OTHERS

5.6.1 Introducing and Illustrating the Issue

The 'discourse of difference' (5.5) relates to another significant theme, a conception seemingly prevalent among participants in this study, that environmental education is a tool for changing 'Others'. Two dimensions of this theme are significant. The first is the predominant focus on Others, introduced above. The second is the 'objectification' of environmental education as tool rather than process. The problematic nature of these ideas is discussed here with references to the data to show the presence of the theme within the study.

First, I recount a recent incident which provided a particularly clear illustration of the conception of environmental education as a tool for changing others.

I regularly visit a near-by environmental education centre and have been diligently using the colourful recycling bins outside the kitchen: a red bin for glass, blue for tins and green for left-over food. One day it occurred to me to ask after the possibility of recycling tins, for I was unaware of any facility to do so in the vicinity. The teacher responsible for the centre then told me that he was not aware of any such facility either, and that in fact he did not recycle any of the waste. After children and other users separated the waste, the staff dumped it all together on a rubbish dump somewhere out of sight of the centre. The recycling bins were only there 'to educate the children', he said. I was struck by the ambiguity of the situation, but my colleague did not see the inconsistency between his desire to teach children the importance of recycling and his apparent lack of personal responsibility for recycling the centre's waste.

If one wanted to respond constructively to the environmental crisis one would surely view both recycling and environmental education as possibly important elements of a broad social process of responding to that crisis. By regarding environmental education about recycling as more important than the actual act of recycling, my colleague was seemingly putting all emphasis on changing Others' thinking and actions and none on addressing the crisis through his own actions. It would seem that, in that instance, environmental education was for him not part of a process of responding to environmental issues, but a tool to encourage others to respond. The questions which arise include whether such a perspective reflects a desire to respond to the environment crisis, or a desire to 'do' environmental education, and what the latter means without the former. Environmental Education *itself* becomes the objective; this is one aspect of the notion of the 'objectification' of the concept.

Although this example is particularly striking, there was much in the data from this study to indicate that the teacher at this environmental education centre was not alone in his views. For example, numerous professional gatherings are currently being organised in southern Africa to discuss how the participants can manage or bring about social change (see eg. HSRC 1993), with little reference to

their own contributions to either the causes or the solutions of socio-ecological problems. With reference to environmental management conferences he has attended, L3 expressed concern about a lack of sensitivity among participants to ways in which they could personally respond to environmental issues, by sharing transport to the event, using less water and electricity, and so on.

The conception of environmental education as a tool to apply in bringing about change among Others was most prevalent in the 'Management' orientation described in chapter 4 (4.4.2). It was reflected in references to "target" groups to which "messages" needed to be "transferred", "communicated" or "delivered" (SAWMA, S3, S8; see also GreenCOM 1994). These groups were defined by features ("socio-economic", "cultural", "ethnic", "population"/race; SAWMA, P3, M4, M6, M7; see also Council for the Environment 1989) which set them aside from the speakers (see also 5.5, 6.2.5.3). The messages were derived from the activities (scientific, research, education) within the centre from which these speakers planned to manage social change and the environmental crisis (eg. HSRC 1993) - messages aimed at changing the behaviour or attitudes of these groups in such a way that they will implement, support or follow those centrally-derived management plans "to affect a positive environmentally related behavioural change in a selected and defined target group" (Council for the Environment 1989). The orientation of the participants clustered in Position I was thus instrumental and aimed at the engineering of change in various groups of Others, drawing on scientific and educational research and expertise to do so.

However, this theme also occurred, although more subtly, in the discourses of Facilitation and Empowerment (Positions II and III, 4.4.3 and 4.4.4). The facilitator stands outside the situation in which change is to come about. People do not facilitate themselves. The facilitator's expressed desire to remain neutral (L2, P1, A6; see Table 4.2) and to stimulate, but not unduly intervene in, the learning or development of students or the "needs" of communities, imply that the learning/development is intended only for The Other. Similarly, the participatory researcher works from a centre for the empowerment of those perceived to be on a periphery. Popkewitz (1991:236) notes that "implicit in the notion of empowerment is that power is something given by those who have power"; the word em-power literally means "to give (someone) the power ... to do something" (Longman 1987). Although the empowerment-discourse of the critical position (see 4.4.4 and 6.2.4 on 'Position III') puts an overt emphasis on the need for collaborative enquiry which would empower all participants (A1, C2), the question of what the researcher/developer would be empowered for has not been addressed by any research participant who supported this particular position; nor is it often addressed as such in the education literature on critical theory⁸.

Whereas the critical orientation emphasises the need for change the concept of change seems to be used, to quote Malone (pers. comm. 1994), far more often as a noun than as a verb! To use change predominantly as a noun is to say (from a critical position), 'We need/demand change' in reference to oppressive structures and hegemonies. It is to negate the change agents' (researchers', developers', educators') location in and contributions to these structures or hegemonies. To use change more often

⁸ Popkewitz (1991:230-9) describes the 'populist rhetoric' as a strategy to maintain the privileged position of intellectuals. See 6.4.11.

as a verb would be to say 'We change' or 'We can, should or want to change' in recognition of the dynamic and significant contributions researchers and those with whom they work make to and in social structures.

The observation that the theme of 'education for others' re-appears in various forms in different orientations illustrates its prevalence. In Chapter 6 I argue that this perspective has its roots in modernist views of change which underpin most of the orientations to environmental education and research described in this study.

The conception of environmental education as a tool for changing others features prominently in the international literature on environmental education. A United Nations publication on environmental education (UNESCO-UNEP 1993:3) states that "... the resolution ... of global change issues depends largely upon behaviour changes in humans brought about by proper education" and describes environmental education as "a major vehicle for imparting global change instruction ...". The frequently-quoted *World Conservation Strategy* (IUCN 1980) declared that "[u]ltimately, the behaviour of entire societies towards the biosphere must be transformed ...". Stated in the passive voice, this declaration is clear about whose behaviour should change, but quiet about those who are to define and stimulate such change. In discourse analysis (Fairclough 1992) it is as important to study what is *not* being said, than it is to analyse what is being said. Significantly, the WCS does not say in the active voice that 'We, all members of all societies, need to change *our* behaviour towards the biosphere'!

The instrumental perspective outlined above needs to be complemented and extended with the notion of environmental education as "... an on-going process of change which does not necessarily come from the outside ... , [one which is] more 'long-term and building' rather than 'develop and implement' ... an engagement ..." (A2, also A3, C5).

According to interviewees A2, A3 and C5 and Taylor (1994) environmental education as a social process (rather than tool or object) involves networking (rather than targeting), collaborative interaction (rather than expert-driven implementation), responsiveness, contingency and constant critical reflection rather than "predetermined measures to determine and monitor change" (Council for the Environment 1989) along an assumed linear and rationally managed path. The former are the views espoused in the 'reflexive' perspective outlined in 4.3.2.4 and 4.4.5.

5.6.2 Problematic Assumptions Within and Outcomes of Environmental Education as 'Tool for Changing Others'

5.6.2.1 Introduction

There is a range of interwoven assumptions and orientations within the theme of environmental education as tool for changing others, which warrant scrutiny. These include:

- * The division set up between 'us' (educators, scientists, other experts) and

'them'/Others and the assumption that "we know and they don't" (A3)

- * The manner in which others are approached in the educational endeavour, as "targets" (SAWMA, Council for the Environment 1989)
- * The assumption that marginal communities or 'victims' of environmental problems are the key audiences for education
- * The assumption that solutions to environmental issues are best developed by certain types of experts (scientists as narrowly defined, and educators); related to the assumption that even if others are to be consulted or involved in trying to address environmental problems, experts should do the steering (as managers, facilitators or change agents)
- * References to 'behaviour change' (eg. S3, SAWMA, Council for the Environment 1989) which do not seem to imply wilful actions; and assumptions that such change takes place in a linear fashion through increased awareness, changed values and attitudes (L3, S1, SAWMA)
- * Modernist assumptions that change can be directed, engineered or facilitated through scientific management, empowerment or capacity building
- * The assumption that environmental education is a tool with which to work such changes and the related construal of environmental education as an object.

The following are problematic issues within the list of assumptions held up for question above.

5.6.2.2 *Target Groups*

Firstly, the notion of 'target groups' to refer to others perceived to be in need of environmental education, although used by several research participants (particularly SAWMA workshop attendees; also Council for the Environment 1989) has been questioned for some time in environmental education circles, to the extent that an interviewee from Lesotho noted that it was not appropriate to use the term any more. (She was however unable to replace 'target groups' with a more appropriate concept.)

Taylor (1994) outlines the problem with viewing others as 'targets' for education. In commenting on an item in a questionnaire circulated by the European Research Centre on Environmental Education and Development - "*What are the target groups of the network?*" - he argues:

... a "target group" outlook ... is very limiting and potentially alienating. It assumes all sorts of things about education processes including the fact that knowledge is a process of transfer from us to them. The assumption that a network can have a target is nonsense. A network is just that - collaborative activity to benefit all participants. Not [sic] a social engineering activity by some to cause change in others. That

networks are, or should be, developed for target groups is flawed. The more we learn about the processes of EE the more we realise how much we need to be educated, as well as the people we work with, and become cautious of the arrogance of target groups etc. Them and Us is divisive and we need to build bridges through EE, especially now [emphasis in original].

A second feature of the theme of environmental education as instrument for changing others is the assumption that "marginal" communities (S6) or 'victims' of environmental problems are primary audiences for environmental education (P3).

5.6.2.3 *Marginal Communities*

There is no doubt that those with the least education, resources and political power bear the brunt of environmental risks (Beck 1992) and there is no reason to deprive them of education that will help them to address their life situations. However, it is questionable to what extent information to the least powerful individuals, *sans* a concomitant increase in their control over environmental resources, can advance sustainable living. The origins, motives underpinning and effects of a predominant focus on such people as audiences for 'environmental messages', are worthy of investigation.

Environmental problems such as soil erosion, deforestation, littering, overgrazing and most controversially, overpopulation, are often attributed to the poor and poorly educated. Whereas those with meagre resources are undoubtedly implicated in the further degradation of such resources, a focus on the relatively powerless as perpetrators of environmental issues also effectively deviates attention from more powerful groups who can be linked quite directly to the causes of other environmental risks, such as industrial pollution and land degradation by government-sponsored commercial farming (Cooper 1991). Such a focus is akin to a supermarket chain organising clean-up competitions for youngsters who are unlikely to ask questions about how the items of litter they are encouraged to collect get to be around in the first place. Exposing these aspects of latter-day environmental education efforts might be what Huckle (1991:43) had in mind when he noted that

... much environmental education is part of the problem rather than the solution. ...
It is based on inadequate theory and practice yet receives increasing support from powerful elites who must manage the global ecological crisis in their own interests.

5.6.2.4 *Scientists Alone should Define Solutions*

Another assumption to question is that solutions to environmental issues are best developed by narrowly defined groups of experts. To question this assumption is not to negate the valuable contribution to our understanding of environmental risks provided by scientists (Beck 1992). However, positivistic science tends to focus very narrowly on discipline-bound and de-contextually reified problems (Beck 1992, Popkewitz 1991) and is thus not suited to describe the complexity of environmental issues (Beck 1992:59). Furthermore, leaving the task of defining 'positive environmental behaviour' (Council for the Environment 1989) or 'appropriate behaviour change goals' (UNESCO-UNEP 1993, Hungerford *et al.* 1980, Hungerford & Volk 1990) entirely to one particular societal group (in these cases environmental / educational scientists) cannot be an acceptable practice

in a democracy (see Robottom 1990, Popkewitz 1991), no matter how compelled these groups may be by their statistics and visions to provide direction for the rest of society.

Research participants (eg. L3, K1) reported that the new political regime in South Africa is causing scientists and para-statal conservation agencies to rethink what is often referred to as their "elitist" orientation (L4), that is, a tendency to define the kinds of insights sought in decisions about research, environmental management and development, very narrowly. L3 (along with S4, K1) explained that "the terms of reference" for South African scientists have changed with a changing political dispensation, probably through changing criteria for financial and political support to future scientific and development endeavours (see 6.1.4.2). A new concern about the 'relevance' of scientific projects seems to have resulted in a reproduction of an international trend to 'democratise' prevailing discourses (Fairclough 1992:201-7). Interviewees A6, P1, P3, S8, C2, L4, M1, M2, M4 and M5 referred to a perceived need to 'broaden participation' and 'consultation' in conservation, development and educational arenas.

Such 'democratisation' would be an important development if it meant that solutions to environmental issues would be sought and conceptualised more broadly. It would enlarge the space for the collaborative development of more adequate solutions to environmental issues, as proposed by authors such as Beck (1992), Hall (1981), Miller (1993) and Quinlan (1993). The inter-epistemological dialogue between societal groupings referred to in Beck (1992:5) might be more likely to develop transformative, rather than accumulative knowledge (see Field 1991) and more conducive to the shaping of solutions from a conceptual framework different from the one within which the underpinnings of the problems have been conceived.

However, features of the current discourse of democratisation in southern Africa, as encountered in this study, leads one to question its transformative potential.

Firstly, the desire to consult or involve others in efforts to address environmental problems was often accompanied by an implicit belief that experts should steer the direction of the process, as either 'scientific' managers, 'outside' facilitators or critical change agents. The nature of such solutions would thus most likely still be determined largely by one (the initiating) group. This would be related not only to the predominant power-relations in the situation, but also to the strongly prevailing assumptions of scientism and modernism (which are likely to be shared by both the experts and others) that conventional science knows best and that conventional models of development constitute the most appropriate responses to economic problems.

Secondly, even within orientations which explicitly called for environmental educators/researchers to work collaboratively and non-directionally (eg. from P1, L5), facilitators or critical change agents were working to bring about change in some group of Others, while exempting themselves from processes of change.

Thirdly, the results of this study indicated that some scientists' motivation to participate in a more democratic discourse was not to engage non-scientists in the co-construction of solutions, but to "bring

them on board" (participant in IDRC conference, 1994), i.e. as a strategy to make them feel part of the problem-identification and subsequent development of solutions. A similar example is the notion of 'ownership'. An interviewee from Lesotho underscored that more and more often 'broadly representative' groups of people are gathered together to lend credibility to a project or undertaking, or to develop a feeling of ownership in that undertaking. The rationale is that these new 'owners' of projects would either support them or use their products (in the case of, say, teaching materials) or at least refrain from lobbying against them (for example, in the case of protecting land for conservation purposes).

In these kinds of situations, some of which were observed during the study, it seemed that the trend towards 'democratisation' within the prevailing discourse was more strategic than substantial. The apparent strategy is to gain or maintain power by masking uni-lateral agendas in a political economy where such agendas are strongly discredited (see 2.3 and 6.1.4.2). Fairclough (1992:50) quotes Foucault (1981:86) to point out that:

Power is ... "tolerable only on condition that it masks a substantial part of itself. Its success is proportional to its ability to hide its own mechanisms".

The power referred to here is not the power of forceful domination or coercion. "Modern power" (Fairclough 1992:50) works through incorporation. It is "productive" in the sense that it shapes social identities (Popkewitz 1991:31) and "retools" (Fairclough 1992:50) those who are subject to it to fit in with particular institutions. SAWMA participants' references to "capacity building" among new community leaders in a changing South Africa, as a research priority, had echoes of 'retooling' these individuals to fit in with grand plans for the orderly management of society and resources (see 4.4.2, 'Position I'). Co-opting people to feel that a project initiated by a particular institution (such as the scientific resource management/ conservation lobby) is also their project, or that they are 'on board' the same ship as that group, could be seen as (1) a fairly thinly veiled strategy to retain the power to manage those others and steer the ship according to one's own vision and (2) a necessary responsive orientation to maintain institutional prominence and position.

5.6.2.5 *Knowledge as Accumulation*

Besides being a perpetuation of existing inequalities with regards to the power to set agendas, and a form of social engineering, viewing environmental education as education exclusively meant for Others is also constricting our responses to the environmental crisis. Those of us who research and teach about the environmental crisis are as much a part of the problem and the solution as others and therefore need to learn as much, as pointed out above (Taylor 1994). Orr (1990) had more wise words in this regard:

It is worth noting that this [global environmental degradation] is not solely the work of ignorant people ... It is, rather, largely the results of work by people with BAs, BSs, LLBs, MBAs and PhDs. ... More of the same kind of education only will compound our problems. ... It is not education that will save us, but education of a certain kind.

Orr calls on environmental educators to re-conceptualise education and what counts as valuable knowledge. The view of knowledge evident in the frequent references to 'environmental messages' (SAWMA) implies progress through the incremental accumulation of information (S3) and concepts (S1). The notion of accumulative knowledge is linked to progress as the addition of more (of the same kind of) facts and ideas. The role of research is to discover or develop this form of knowledge and education is to 'transfer', 'deliver' or share it (see 6.2.5).

From a reflexive perspective education *also* significantly involves a re-searching for meaning and better understanding (Beck 1992:5, Doll 1989, Kincheloe & Steinberg 1993, Lather 1991); what Doll (1989) referred to as 'transformative' knowledge. Better understanding is developed by the critical⁹ exploration of existing patterns of thinking and doing and their appropriateness in the light of, eg. the environmental crisis. Often it might involve the deconstruction and/or 'un-learning' of conventional wisdom, as opposed to uncritically building on existing knowledge. The conventions which need to be opened for scrutiny would include positivistic notions of science and the scientific method (Beck 1992, Popkewitz 1991), "technoscientific" models of development (Lyotard 1985:49) and existing educational theories (see eg. Cherryholmes 1988, Kincheloe & Steinberg 1993; also 6.2.6 and 6.2.7).

5.6.2.6 Behaviourism

The educational theory underpinning the version of the theme of Education as a Tool for Changing Others in Position I (4.4.2) is behaviourism. This was reflected in references (eg. by S3, SAWMA participants) to behaviour change in others which did not seem to involve wilful action on the part of those in need of the change. Behaviourism could also be related to these participants' assumptions about how change takes place. A popular notion is that behaviour change can be caused in a linear fashion by first 'raising' 'levels' of awareness and 'increasing' knowledge (*kennisvermeerdering*, S1), followed by changing attitudes (L5, M4) and values (S1) and finally, rational changes in behaviour (S3, L3, SAWMA participants). This has been described as the "traditional" "behaviour change system" by Hungerford and Volk (1990:3). The latter authors, who have been criticised for their adherence to behavioural models of environmental education (Robottom 1990) acknowledge that research has failed to provide empirical evidence to substantiate this linear and causal sequence. The notions of causality and rationality however persist in the more elaborate models for behaviour change proposed (GreenCOM 1994:11, Hungerford & Volk 1990:5, Opie 1990).

5.6.3 Comment on the Need for Broader Participation in Addressing the Crisis

Behaviourist learning theory is one version of the modernist assumption that change can be directed in a controlled and rational fashion. Proposals that rational change can be caused by facilitation (P1), empowerment (A1) and/or capacity building (SAWMA, S6) are not behaviourist, but also modernist. These views on change are discussed in Chapter 6 (6.2.5.1, 6.2.5.2). Here it will suffice to note Popkewitz's assertion that

⁹ *Critical* implies "showing connections and causes which are hidden; it also implies intervention ... " (Fairclough 1992:9).

[c]entral to [these notions of] change is the expert who defines the situation and manipulates the clients/groups to acquiesce in the predefined decision or path (1984:149).

This involves the next questionable assumption within the theme under discussion, that knowledge about and solutions for the environmental crisis are best developed by narrowly defined experts. As Beck (1992), Hall (1981), Miller (1993), Quinlan (1993) and others argued the complexity of the environmental crisis require ongoing dialogue among (or involving the perspectives of) social and natural scientists, philosophers, experts from a diversity of areas (eg. farmers, home makers, teachers, health workers) and other ordinary people. Through ongoing conversations, enquiries and actions around shared agendas and real problems, real solutions might be shaped. This is the reflexive perspective of collaborative learning through dialogue, grounded encounters and shared reflection (see Figure 4.1; also Beck 1992:5, A2 and A3). Practising education/research from a reflexive position is to recognise that the learning is for both teachers and learners, and that both these roles might be played inter-changeably by the parties involved.

The latter does not represent an argument for learner- or community-centred processes which might deny the need for direction and mediation by teachers, developers and others with worthwhile insights and expertise. Whereas learner/community-centred approaches have been espoused by several participants in this study (including A6, P1, P3, L4, M5, M7), most of them have cautioned that these can be 'taken too far' (P1, P3, also A2). The argument is that the environment crisis seems complex and its underpinnings pervasive enough to require the response of all global citizens, and that an educational response which simply involves groups of narrowly-defined experts passing their definitions of problems and solutions on to others in a technicist manner, appears both inadequate and dangerous. Firstly, it is undemocratic (Popkewitz 1991). Secondly, as the quote by Orr cautions, it would be prudent to note that the technologies and systems which have been implicated as root causes of the environmental crisis have largely been developed by the most scientifically educated amongst us. Beck (1992:59) goes so far as to suggest that

[a]s they are constituted - with their overspecialized division of labour, their concentration on methodology and theory ... the sciences are *entirely incapable* of reacting adequately to civilizational risks, since they are prominently involved in the origin and growth of those very risks (emphasis in the original).

In the next two chapters I will provide grounds for a position that science, while aimed at 'progress', is more often than not based on conventions which encourage the continuation rather than transformation of current forms of knowledge. This challenges the notion of environmental education as a tool with which those 'in charge' need to work such changes in others.

5.6.4 Conceptualising Environmental Education as Object: Conceptual and Strategic Factors

Conceptions of 'Environmental Education' as an 'entity' within a struggle for ascendancy is emerging as a particularly limiting response to the crisis. I now turn to this dimension of the theme of

environmental education as tool for changing others - the conceptualisation of the idea as object.

The first issue described in this chapter (section 5.2) was a number of research participants' struggle with the concept of environmental education. The lack of conceptual clarity which they reported centred particularly around the notions of

- * environmental education as entity or 'object' (a "thing" (S3), subject or discipline (L2, S4), pedagogical science (S4, M4), field of enquiry or curriculum development (S1, S8, M4), body of knowledge (L1) or enterprise (P3, S2) and
- * environmental education as process (see 4.3.2.4, 4.4.5).

Perhaps a majority of participants treated environmental education as an object. Their reasons seemed to be either conceptual or strategic or both. Conceptual reasons for treating environmental education as an object rather than a process could be linked to (1) modern societies' materialistic tendency to conceptualise what is symbolised as object, (2) entrenched reductionistic thinking styles (evidenced in interviews with M6, S2, L1) and (3) the frequent but unclarified use of the catchphrase 'holistic' to describe the nature of environmental education (P1, L4, L5, M6, K1, K2). Failing to differentiate the qualitative differences in the notions of education as process and as object, some participants equated 'process' with 'broad' (M6, S2), 'broad aims' (P1) or being 'broadly acceptable' (M6), the concomitant methodology being the 'broad approach' (L5, see also Clacherty 1993). With no clear links to the Gestalt origins of the notion of 'holism', 'holistic' environmental education was also equated with liberal notions of 'education for life' (S2) or 'affective' (L2, L4, L5, S1, S8) 'education for the 'whole child' ('cognitive as well as affective', see Column II Table 4.2). 'Process' was frequently interpreted as 'on-going', with reference to the first Tbilisi principle of education as a 'life-long process'.

Much of the confusion described in 5.2 arose as a result of some interviewees' interpretation of environmental education as 'all-encompassing'. Interviewees such as P3, M6 and S2 wanted to delineate environmental education as something with discrete boundaries. They explained that such a delineation would be for strategic reasons: M6 (who also claimed that environmental education can be interpreted differently by different people involved in the activity) explained that clear boundaries for the concept would facilitate the allocation of funding to projects. S2 and P3 thought that environmental education would only be widely perceived as important, particularly among the business community (S2), if it could be 'sold' as a clearly defined and appropriately labelled 'package'. The notion of a 'process' seemed conceptually more correct, they noted, but was simply too broad and vague (S2). They rightly believed that a vague notion would not be powerful, but for strategic reasons which seemed to lack conceptual clarity¹⁰. (See 6.3.2.1 for examples of the contradictions in these interviewees' discussions of the topic.)

¹⁰ As noted in 5.2, the same dilemma featured in seemingly circular debates about whether environmental education should be a separate subject or an 'approach' "infused" (L5) into the entire school curriculum. I do not explore this issue in this thesis.

5.6.5 Institutionalisation Around the 'Object'

Thus, with research participants like M6, P3, S3, A6 and L2 indicating that it was difficult to establish credibility and ascertain financial resources if one could not delineate and distinguish one's profession/ expertise and demonstrate its unique contribution, environmental education comes to be treated strategically as an object or entity. Such a strategy makes it easier to establish a 'corporate identity' for the concept (S2) and no doubt also to establish a professional niche for oneself, as reflected in interviews with A6 and M6.

Such arguments have paved the evolution of existing disciplines like sociology (Fisher pers. comm. 1993) and of school subjects (Goodson 1987) whose proponents reasoned that unless they turned their area of interest into an easily recognisable and clearly delineated academic field, it would not gather the necessary credibility and resources.

These arguments also carry the seeds of actions to set environmental education up as an enterprise in its own right, 'institutionalising' it in such a way that more effort might eventually be expended on promoting environmental education than in actual educational responses to the environmental crisis. Environmental Education, rather than responding to our growing understanding of the crisis, becomes the objective, the other point to the phrase 'objectifying environmental education'.

It was perhaps for this reason that A2 expressed the hope that the 'institutionalisation' of environmental education at Rhodes University, through the establishment of a post-graduate programme and research Chair, would refrain from reifying research and becoming counter-productive.

Those who stand to benefit most from the institutionalisation of environmental education are those of us who can carve a social niche with our expertise in the 'field' of environmental education. Also, a situation in which most efforts are spent on 'setting up' or 'selling' environmental education rather than doing it would suit groups such as government or business in instances when they might prefer to support educational efforts which do not challenge them significantly to change their own conduct in order to minimize environmental risks (see Huckle 1991). Such a situation could for that very reason also result in disappointingly few results other than creating professional opportunities and the impression that the environmental crisis is being addressed by educators. Ironically, this would run counter to the expressed concern among research participants that environmental education should be a significant response to current problems.

Research is another activity which, according to the results of this study, is widely required to bring about significant changes (see 4.3.3.3, 4.3.3.4). In the following section I discuss this expectation which might in some sense be, as I propose in Chapter 6 (6.6.4.2, 6.4.8), an illusion. Section 5.7 also lists examples of ways in which participants were disillusioned with current research and its outcomes, particularly academic research. In the clarification of research orientations and priorities which emerged from the exploration of these themes, I propose the following: that, just as with environmental education, the institutionalisation of research as procedural science within formal

contexts might limit its potential to contribute to change. This idea, too, is taken further in Chapter 6 (6.4.9-10).

5.7 ILLUSION AND DISILLUSION: COMMENTS ON FORMALISED RESEARCH

5.7.1 Introduction: Considerations for re-thinking formal research

5.7.1.1 *Valuing Transformative Knowledge*

This study highlighted several reasons for re-thinking the nature of formal research¹¹. Firstly, the international academic arena currently features signs of or calls for an epistemological shift in which knowledge would be viewed as 'transformative' and not *only* 'accumulative' (see eg. Docherty 1993, Doll 1989, Kincheloe & Steinberg 1993, Lather 1991; also 5.2). In this study participants from Position I (4.4.2) in particular viewed knowledge exclusively as accumulative, i.e. new knowledge is that which fits in with and builds on to existing knowledge. (The term *kennisvermeerdering* in S3's discourse - literally the self-multiplication of knowledge, as in the parable about Jesus multiplying the fishes and loaves - was helpful in revealing this.) Extended to the theme of environmental education as tool for changing Others, it implies that by increasing others' knowledge to match our own ('transferring messages', 'delivering' knowledge with the 'vehicle' of education) we will prompt and enable them to change their behaviour. Post-structural and postmodern perspectives (Doll 1989, Kincheloe & Steinberg 1993, Lather 1991) introduce the broadening idea of transformative knowledge which helps us to re-think those conventions (part of existing knowledge) which, according to Capra (1982), Merchant (1983), Schumacher (1974), Shiva (1988) and others, underpin the environmental crisis.

5.7.1.2 *Access to and Relevance Within Academia*

In southern Africa calls for an epistemological shift run parallel with calls for broader access to tertiary education and greater relevance of academic processes and products for the African situation (Morrow 1994). These calls involved a need to rethink the nature of academic research (in this case research for degree purposes) in universities 'in and for Africa'. They have stimulated efforts to improve black students' entry into and performance in academic research (see for example CSD 1993). Predictably these calls have raised concerns about the lowering of academic standards (referred to by Carolus 1994, for example). Others (in this study K2, A2) responded to such calls that research as it is practised at university was 'an essentially Western notion' to which those wanting to train as academic researchers, should subscribe. In the first section of this chapter I showed that

¹¹ I use the label *formal research* to refer to formally documented and structured projects which are usually undertaken for contractual or academic purposes. *Academic research* is that form of formal research which involves studies undertaken through academic institutions, often for degree purposes. By employing the term '*formalised*' research I try to emphasise the fact that most examples of research encountered during this study followed the conventions associated with formal research, eg. particular research designs and reporting styles.

this study revealed an undifferentiated theoretical understanding in both environmental education and research methodology among research participants and others (academics) encountered during the study. I would therefore argue, as did Carolus (1994), that there is a need to in fact *improve* intellectual¹² standards, certainly in the case of research in/and environmental education.

5.7.1.3 Formal Research Fails to 'Deliver'

A third set of reasons for re-thinking the nature of formal research relates to its perceived failure to produce desired outcomes. These reasons were introduced by several participants in this study, particularly in discussions on research priorities and to a lesser extent, on problem areas in environmental education.

As results quoted in 4.3.3 indicated many research participants were of the opinion that research activities had a role in processes of environmental and educational management (S1, S2, S3, S8, C2, SAWMA), development (M4, M6, S1, V1) and change (P2, P3, A1, L4). P2 summarised many participants' views when he stated that "we need to remedy and improve our situation at this point in time", but that only "the right kind of research" had a role to play in that endeavour. Several interviewees stated that much or at least some of the research projects they were aware of failed to contribute to environmental management (S3, C1) and development (A5), environmental education practice (A4, L1, L4, C1, C4, C5, P2), the advancement of 'science' (L2) or significant change (L4, K1). Current practices in and outcomes of formal research were questioned from a variety of perspectives; the major areas of concern were its relevance, style and accessibility. Academic research in particular was widely questioned, to the extent that some interviewees argued that priority styles of research, which in this case would fulfil an assigned role of 'bringing about' change or 'improvement' would be less 'academia-centred' (V1, P3, A4, L1).

The fairly widespread disillusionment with academic research among participants in this study is illustrated below. The disillusionment stemmed from, but did not seem to quell, the belief that research was indeed designed and able to make the desired contributions, an observation which will be addressed in Chapter 6, in the exploration of the potential for change within research activities.

My focus is on academic-style or formalised research, for two reasons. Firstly, it was the form of research most frequently encountered and recalled by research participants, even those who recognised that research does not necessarily have to take place in academic or other institutional settings. Secondly, it is the form of research which my students and I are engaged in and about which we hence most obviously require clarity.

¹² Popkewitz (1991:218) uses the term intellectual to refer to a person involved in the "knowledge-producing occupations"; I use it similarly to reflect the institutional and social position of those who produce knowledge, and not normative criteria about wisdom and insight.

5.7.2 Requests for Change: The Style, Relevance and Accessibility of Formalised Research

5.7.2.1 *Style*

Interviewees from both academic and non-academic contexts (eg. P2, L4, L5, C4, A4) expressed much frustration with the style¹³ of the academic research they encountered. Their comments usually, but not specifically, pertained to positivist approaches to research, as I will illustrate below.

Their views were off-set by a handful of researchers (K2, L2, L3) who defended existing research styles. L2 and L3 argued from a positivist perspective that 'the scientific' research methodology involved imperfect (L3) but "the best available" (L2) methods for producing valid and reliable knowledge. K2 believed that most conventional research made an adequate contribution to the development of knowledge and that those who questioned it were usually non-academics who were either uninformed about, or had ulterior motives for questioning, aspects of academic research.

This interviewee did however question the reductionist orientation of positivist research. Along with C1, C4 and M6, K2 wanted research to look at "the bigger picture" as opposed to "irrelevant" detail (for which M6 used the metaphor "the ticks on an elephant's backside"). Situating research priorities in a socio-political context, M6 claimed that research which was narrowly construed and very focused from the outset could "no longer be afforded"; it did not have the responsiveness to situations required to 'bring about change'. C4 noted that much of the research which she encountered addressed topics which were relevant to her work, but that the reductionistic approach to the topics failed to provide her with the broad picture of the situation which she required. She described the style of most research reports as "flat", by which she meant both one-dimensional and unexciting.

A different point with regards to the style of academic research was a desire to see an action component in research projects. Several interviewees (notably A3, L4, P3, M6) thought that an "action-based" orientation would contribute better to 'bringing about change' than current research did. They called for wider use of the "action research" approach (L4, M6, P3, S6) or for "on-going" "action-based" research processes (K1, A2, A3). A3 argued that this study would fail to engage participants actively, due to the absence of an action component. (See comment on this aspect in Chapter 7 (7.5).

Some of these interviewees lay the blame for what they perceived as the failure of much current

¹³ The term research *style* was introduced into the study by A2. I follow Longman (1987) in using it to refer to the "typical and general manner of doing" research. A more involved term is research *approach* which I use to refer to an (epistemological and ideological) orientation to research which results in certain choices, eg. style and methods used. By *methods* I refer to plans for using a set of techniques to gather empirical evidence; examples are action research methods or surveys. *Techniques* are tools for data collection, eg. interviews and questionnaires. A research *methodology* is the theory of knowledge and the interpretive framework which guides a particular project and decisions re. all of the above (see Harding 1983). (Methodology is also used elsewhere to refer to the study of methods.)

research to produce meaningful outcomes, at the door of its underlying methodology: "positivist" research (P3) or "the scientific approach" (L4) could not "create changes" (P3). L4 and M6 hoped that non-positivist approaches to research would overcome the current situation in which, they claimed, the research process often benefitted no-one besides researchers. L4 surmised that what he termed 'scientific' researchers were adamant to retain their own position (against post-positivist), because (I translate and add the emphasis):

the only people benefitting from scientific research [in the educational arena] are the researchers themselves. It's not the cause, the problem or the children - not at all - it's not the poor teacher. Nobody benefits in the long term. In the long term it's the publication list of the researcher.

It is clear that certain research approaches and methodologies are questioned because of a perceived lack of relevance in the outcomes they produce.

5.7.2.2 *Relevance*

Interviewees suggested that, in order to make a "contribution" (A4) to the issues important to them, research needed to be more relevant than it currently was (S5, A4). Several participants described research priorities in terms of studies that are "relevant" - to the South African context (A5), the political and developmental agenda in the region (A1, A5, M6), or, as noted in Chapter 4 (4.3.3.4 and 4.4.3), to practitioners' problems (P2, A6).

Questions about 'relevance' were most frequently levelled at academic research specifically. S3, eg., doubted the value of much of the research completed by researchers working on academic projects in affiliation with his own organisation. 'At the end of the day', he pondered, 'after 10, 12 years of study, from Honours to Doctorate' one could ask "So what?". Usually these studies came up with new findings, he conceded, 'one knew more about something, but did that actually contribute to better management?' In P2's opinion academic research often dealt with "irrelevant issues", it was "up there" while the need was for research that could be "implemented on the ground". These views underpinned the arguments for research that would be more 'practical' (S8), "applied" (P3), 'product-oriented' (S5) and "more pragmatic" (S6).

The relevance of academic research was also questioned in C4's opinion of academic researchers as people with theories ... they go out and do funny little things that nobody else really understands, and ... you know, it's *very much for themselves* ... so I suppose anybody that's not involved in that sees it as sort of ... even *unnecessary* ...? (emphases added)

A perceived lack of relevance was further illustrated in an interview with A4, who criticised questionnaire-based studies he had been involved in as follows:

I really got so sick of people using my time to get bloody PhD's *that I couldn't use* ... It really used to make me angry ... the sort of questionnaire survey types of things. I'm very happy to spend time with you face to face because I know you're investing the same amount of time, but ... you get these copious amounts of pages to fill in ... and all it was [doing] was capturing the data that exists in this [his]

project on somebody else's behalf. And then they do the same all over the country, get themselves a PhD, and *you couldn't use it, because all it told you was what you knew* (emphases added).

It is important to note that neither C4 nor A4 dismissed all research as irrelevant. C4 valued the evaluation research she had been personally involved in, but for the process which was stimulating and educational for herself and her staff, rather than for the formal results. Similarly A6 valued the ongoing evaluative research at his work place, particularly for the staff training opportunities it afforded. Thus whereas some styles or aspects of research were questioned, others were valued. I elaborate on these valued dimensions and styles of research in Chapter 7 where I reflect on the value of my own study and on future directions for environmental education research in southern Africa.

A4's statement concerning 'useless' research outcomes quoted above referred to those results which were indeed disseminated to him; he claimed that results from externally conducted studies he responded to were often not returned to him. A4 described both the inapplicability and inaccessibility of research as a problem area in environmental education, a professional issue which he used to find very frustrating and which caused him to think that it was very sensible to investigate research priorities, as I was doing.

5.7.2.3 Accessibility

"The way in which we communicate research [was] ridiculous", said L5. As a researcher she argued that research was written up in a format "inaccessible" to all but other academics, and that the time "wasted" on thick reports and theses "sitting on shelves" should rather be used on more accessible and hence more widely read publications.

Her view was echoed by C4 who wondered whether academic researchers really wanted people to read their work, for in her view they did not present it in an "inviting" way; and C5 who noted that those research reports by University of Zimbabwe students which did make it to the local libraries ... are in heavy languages, and impressive, just full of perhaps professional jargon, which .. if they are no longer students, they are not likely to read.

C5 also recounted problems with the dissemination of research reports. He alleged that it was more likely for him to come across reports on research done in Zimbabwe outside of the country, than within. P2 also referred to a perceived difficulty to physically access research results. Making the point that research should be implemented "right away" (see 4.4.3) he entreated that research should not be hidden in "a thesis that is lying in Pretoria University, that you have to go through a lot of red tapes [sic] to get access to". Another would-be user of research results referred to researchers who failed to share their results with those from whom they have collected them, as "anal-retentive" (C1).

I was struck by just how remote some non-academic interviewees perceived the body of 'academic' knowledge to be when a development worker (M3) described "non-academic" research as a priority above academic research for the reason that non-academic researchers did not have (physical or conceptual) access to the body of knowledge produced by academic research, whereas the latter could

draw on non-academic research results.

The issue of accessibility pertains not only to the density of the language or poor distribution of results. The style of thinking inherent in academic research might also serve to exclude non-academics from participating in the development of knowledge (see Hall 1981 for an elaboration of this idea). One interviewee who raised this issue was uncertain as to whether she could contribute to my study or articulate her views in an 'appropriate' manner: After scanning the interview schedule (Fig.3.1) she noted that she seldom reflected on the topics I wanted to discuss "in those [academic, theoretical, analytical?] terms".

- I work in developmental education, but I never actually stop to think. What I think is what I live. ... Maybe some people think in words, some people think in pictures, ... people think in different ways. I haven't spent a lot of time trying to be academic about what we do! ... It doesn't mean that I don't have views, I have very ... I think strong views about things, but ... maybe I've never been asked to verbalise them! (C4).

Other interviewees, too (V1, L1, C5) were uncertain about their ability to contribute to the study. This could be explained at least partly, it seems, by several participants' view of academic research as being rather obscure and exclusivist.

In summary, a theme of discontent with the nature and outcomes of academic research runs through the results of this study. Some of the issues raised - requests for different research approaches and reporting styles - are addressed in 5.7.3 below, where I turn to the milieu of formal research and the way in which these situations regulate research styles.

5.7.3 The Regulation of Research and Knowledge Production

5.7.3.1 *Reported Pressures to Conform*

As illustrated above several participants (eg. C5, L4, L5, M6) called strongly for changes to academic-style projects to allow for research which would be more successful at answering management questions (S3), solving 'practical' problems (P2) or addressing substantive change (L4, P3). Yet, significantly, three researchers (L3, L5, C5) also noted that they had experienced pressures to keep within the guidelines of a particular (in this case empirical-analytical) research methodology.

One researcher who had described "positivistic" research as "useless for environmental education" (L5) explained why she had based her previous project on just such a methodology. At the time "the [non-positivist] approaches that one has come to recognise as important to environmental education" were still very new, she claimed, the "quantitative approach" was the acceptable one in the institution in which she worked and "if I wanted to get my ... degree it was ... a good idea to use it". Another interviewee explained how he had to design his research in such a way that he could "sell" his project to heads of research institutions who were "still dominated by natural scientist thinking" (L3). He used an empirical-analytical (what he termed "scientific") methodology, because he had to "deal in the currency which [these senior scientists] would understand".

Another 'institution' mentioned for influencing research styles was the funding agency. C5 described how researchers were sometimes constrained to use methods which they disliked owing to the "horrendous" timetables set for projects by their funders. "[Q]uantitative research" was regarded as more time- and cost-effective by funding agencies, and this was the methodological approach they tended to encourage. C5 thought that these pressures led to less valuable research:

... Garbage in, garbage out ... [A]t times the conclusions you give might not be as good as you ... wanted, because you were in a hurry. ... We know the donors ... they want the figures, they are interested in the figures .. how many millions of [an educational resource for children] have been distributed ... We are more interested in how the children understand it ... (C5).

C5's view that quantitative data were less meaningful than qualitative data, also held by researchers like L4 and L5, was opposed by others (L2, L3, A5). This methodological contestation has been introduced in 5.3.

Here it needs to be noted that the above results point to ways in which academic and other institutions can regulate research activities and thus the production of knowledge through formal research. This is the focus of the next section.

5.7.3.2 *Institutional Pathways for the Regulation of Knowledge Production*

Here I draw on research results and on Popkewitz' work on knowledge production (1984; 1991) to illustrate that, and how, academic institutions and funding bodies shape and regulate research activities and styles, and how this regulation influences the knowledge produced by researchers. I end the chapter by noting that (1) institutional regulation of research activities could be an important constraint on conceptualising new research styles and methodologies in the context of change and (2) there is a need to re-think the assumption that formal research can indeed solve environmental educational issues in an instrumental manner. These issues form a substantial part of the discussions in Chapter 6 (6.4, particularly 6.4.8).

A first observation to draw from the above is that research questions, styles, methods and techniques are not simply the personal or technical choice of researchers, as some participants (P3, S3) had indicated (5.3). The quotes from L3, L5 and C5 above illustrate that researchers are strongly influenced by factors external to the situation being studied, when choosing a particular methodology. A few participants also believed that such methodological choices have important effects and are thus of more than technical concern: M3 declared, in arguing for culturally-appropriate research methods in Namibia, that "the method determines the outcome" of research. Popkewitz (1991:21) noted that

the stress on procedures of science leads many to consider only those questions and problems that confirm to its procedure rather than to having methods and procedures respond to and develop from those theoretical interests.

Thus assumptions which give credit to only certain methods limit the scope of research questions and outcomes.

External influences on research could include institutional agendas. Two interviewees (A2, L2) commented on an institutional agenda driving this particular study, for example. A2 spoke of the establishment of the Chair of Environmental Education in the context of the "institutionalisation of EE" (see 5.6). L2 thought that an undertaking to investigate research priorities was part of a quest to establish Rhodes University as a 'centre of excellence' in the field of environmental education, a positioning for territory in what he saw as an increasingly competitive professional context. He referred to "a lot of 'politic-ing' in EE in South Africa going on at the moment, particularly at tertiary level", which he perceived as becoming more acute as "people's jobs and funding resources are being trimmed back in terms of what priorities are". This explained to him "where people are coming from who are anxious to create little empires for themselves". L2 explained that he did not need to engage in such strategising, because of the freedom which ensued from a non-institutional income.

I did not agree with L2 that a positioning for professional space (credibility and resources) was a significant intention for my own study (see 2.1 and Ch7). I did think, however, that strategies involving the 'objectification' of environmental education described by other research participants (5.6), and institution-building around the concept 'development education' (see 6.1.4.2 for an introduction of this notion), involved such a rationale. L2's views also alerted me to the strategic dimensions of research projects, and placed me on the look-out for ways in which the institution in which I was working have been shaping my study. I return to these shortly.

Namibian and Zimbabwean interviewees made no reference to my 'institutional agenda', but several of these participants (C2, C3, M1, M3) were concerned about the setting of research agendas by donors of development aid and consultants from Western Europe and North America - "those with the money and the expertise" (M3, also C2). *The interests of international aid agencies* seemed to run alongside and to intertwine with those of local academics in Namibia and Zimbabwe. In the 'developing' world international interests might play at least as important a role in shaping research as the interests of national governments and the corporate community in the United States, the latter being the situation being described by Popkewitz (1984) in his study of the social functions of educational researchers.

An established Zimbabwean researcher (C2) recognised that

[research] agendas are set by external agencies, funding agencies ... this is very true. There is a form of ... academic and environmental neo-colonialism ... which ... is, I think, obliquely at least, perhaps not always intentionally, but I think sometimes intentionally ... still holding the real reigns of power, which is the setting of agendas and the controlling of research budgets, in the hands of the people that have the money. Of course the people that have the money are by and large the European and North American states, and that's one we battle with all the time.

C2 advised that not all aid agencies should be 'tarred with the same brush', for "there are certain international organisations who are very supportive of our own concern to build up indigenous top-level expertise".

A Namibian employee of an international aid agency had a less positive view. He was angry at the fact that international donors with the resources to do so were commissioning and doing much of the research in the country, along with 'defining the priorities'. M3 regretted that Namibia had "opened up to aid", for he suspected "hidden agendas" to control the country's development; in his experience aid was "seldom given for altruistic purposes".

Along with M2, M3 thought that Namibians should learn to do research themselves. Both resented the "eurocentric approach" to research which foreign researchers utilised, partly because they regarded it as unsuitable for Namibia, resulting in inappropriate materials or projects and antagonism from Africans. A lack of understanding of local cultures and languages played a major role in the misinterpretation of research results, they cautioned, and "sampling by numbers" (M3) were inappropriate among communities who generally mistrusted research projects. M2 would have preferred that research in Namibia be done by local 'non-governmental organisations' and in the absence of the necessary "manpower", infrastructure and government support, by consultants from elsewhere in southern Africa rather than Europe and North America, as is currently the case.

I now turn to focus on *specific ways in which academic institutions regulate research activities*, as revealed by the results of and incidents during this study, and the literature consulted.

A first and obvious way in which academic institutions shape research styles is through *the guidance of senior researchers* to junior colleagues. An example of an academic guiding body encountered in this study was the Humanities Higher Degrees Committee (HHDC) at my own institution, to which students submit research proposals before embarking on their projects. Two members of this committee referred my own proposal back with questions about the design (refer to 3.2.2). What precisely would the "framework" I was intending to develop entail, was one of the questions they asked, and how would I know whether interviewees were telling me the truth? I explained the implications of an emergent research design, and of a (non-positivist) methodology which did not recognise particular data collections technique as tools to unearth 'The Truth'.

My proposal was eventually accepted, but the incident revealed the potential for the regulation by senior academics of the kinds of research being done in a particular institution. I felt confident enough to defend my non-positivist methodology against the questions perhaps asked from a positivist perspective. However, I have observed that most of my own students look to me for very specific criteria for conceptualising and designing their research proposals - for reasons which include the need to have them screened by the HHDC.

The power of senior academics to shape research styles also lies in their chosen *criteria for rewarding what counts as good research*. In a sample of three of the Masters students whose education research I have 'supervised' I note that: K1 obtained a distinction for his project, but he has not followed it up in any way in the administrative position he was promoted to on its completion. K4 was not awarded as good a mark from the academic examiners, but received a nomination for 'citizen of the year' in his home town and a national award from his professional association for his research. S9's thesis suffered from inadequate typing and editing skills which prevented him from working through

conceptual issues. Thus there were no formal recognitions of excellence other than the degree. However, he seemed to find the learning-by-researching stimulating and has since completion started working on a paper to develop some of the emerging issues further.

Another colleague's Masters research was rated as an important local and even international contribution (detail withheld for the sake of anonymity). Two academic examiners judged the thesis and research. One examiner awarded a distinction based on a judgement of the quality and impact of the research itself, the other referred the thesis back and refused a distinction on the basis of the poor quality of editing of the thesis.

I included these vignettes to illustrate that there are multiple criteria which could be applied to judge academic research, but that some are favoured above others. Criteria are necessary, but it is also necessary to review them from time to time. What should Master's research students of our time learn? Is there a balance to be found between learning how to do exciting research with the potential to be of benefit to more people than just the researcher, and how to write up a project according to agreed-upon standards? The case of the Master's project which failed to attain a distinction because the poor quality of the written report counted more than the impact of the study highlights the importance of the dissertation (the document which a student is required to submit for evaluation) during the academic assessment of research. Against this one can juxtapose the observation of several interviewees, that research dissertations are not widely read outside academic circles. In my own experience they are also not that frequently read within academic circles. (L5 lamented the need to overlay a dissertation with journal articles in the hope of finding an audience.) A dissertation seems to be conceived of as a reference work rather than a communication medium. It is on this reference work rather than on the quality or impact of the research process, that a research-student is judged. This indicates the valuing of a certain kind of knowledge (accumulative, perhaps reified) within academic institutions, the worth of which was questioned by several research participants, as indicated above and in Chapter 6 (5.7.2.2, 6.4.3).

Apart from the relative emphasis on the written research report, *the conventions of academic discourse* related to the report itself might have several interrelated influences on the shaping of knowledge through academic research, as follows. In reviewing the case studies reported above and in working with students who often struggled with expressing their learning through and about research in an accepted academic discourse, I was inclined to think that the conventions of the academic style prevented many students (particularly English-second-language users) from participating and excelling in academic research. Interviewees A1, S7 and P3 shared this view. C5's reference to "neo-colonialism" in the research context strengthened my early perception (see Janse van Rensburg 1993b) that 'linguistic imperialism' (see Phillipson 1992) presented instances of "gatekeeping" (S6) in southern African universities, where the most highly awarded research reports are written in a meticulously edited style, most frequently in English, and in a particular academic genre.

I presented these interpretations in a discussion document (Appendix 2), upon which K2 commented that research reports had little value unless they were written up clearly and carefully. This I agreed

with. Yet as I was engaged in teaching a 'formal research' discourse to would-be researchers, I was also aware of how some academic conventions rubbed uncomfortably against some students' understanding of the situations they studied and their ways of expressing that knowledge. I came to see how what I was doing went beyond teaching them how to write in clear formal English and how to reference the texts they read. Learning the language of academic research comprises an institutional induction into particular methodological and epistemological conventions and modalities.

If I told a student-researcher to use the passive voice and avoid the first pronoun, I would be teaching her that it is appropriate to imply (and think) that she had very little to do with the research results. If I taught her to structure the report in a linear sequence, with 'theory' and 'data' neatly separated, she would be learning that the research process is best presented as having smoothly followed a plan which resulted in a set of conclusions with no help from the theory (McWilliam 1993). Technical rules have their own messages: Popkewitz (1991:223-4) uses the American Psychology Association's (APA) style of referencing to illustrate how the adoption of a particular technical convention is a way of internalising the assumptions of the science itself, its behavioural norms and visions embodied "into styles of writing and the construction of educational problems" (p.224).

In one way it is a truism that clear communication is a prerequisite for a good thesis, but the simplicity of this statement evaporates when one recognises the multiple levels on which texts are written and read (see eg. Fairclough 1992). Conceiving of different audiences for one's writing create different conceptions of clarity and appropriate editing.

Participants in this study envisaged a range of audiences for research reports. First, there was a minority view that theses (should) exclusively communicate with other academics and hence required a particular "scientific" or technical discourse (L2, S4). Many more participants (P2, L1, L4, L5, C4, C5, A4) strongly opposed the above view, arguing that research should 'speak' - perhaps especially - to 'non-academics'. This perspective, resonating with what Popkewitz (1991:230) described as "taking the intellectual to the people" has been introduced in Chapter 4 (4.3.3). It is discussed further in Chapter 6 (6.4.7) where I suggest that requests for a language which resonates easily with practitioners' understanding of the world may make for easier reading, but can prevent the desired new practices from developing. In making that suggestion I draw *inter alia* on Elias' notion of symbols (such as language) as constituting both a means of communication and a means of orientation (Elias 1982).

A third set of audiences for research reports are the funders of the research, or the funders of the projects the research might be evaluating. These parties clearly influence the style in which the research is presented and designed. In this study funding bodies were portrayed (by C5, S5, L2, M6) as particularly interested in quantitative presentations of data.

A fourth example of an audience for research reports was introduced by S6, who referred to researchers who seemed to be communicating almost exclusively, through their theses, with the literature, other academics whose theories they were engaging. He found this 'dialogue between authors' not particularly useful.

In the fifth place, A2 contended that the first task of a research report was to communicate (with) the ideas involved. Based on this perspective, which seems consistent with a reflexive orientation to research, a researcher's writing should in the first place promote conceptual clarity. This requires rigour to remain consistent with its theoretical framework and the empirical observations in which it is grounded.

5.8 CONCLUDING COMMENT

This chapter has introduced several issues and themes of significance in exploring links between priority research and change. The final theme involved the possibilities for the regulation of research through institutional interests and conventions. From a reflexive perspective, researchers should be mindful of rather than bound by the conventions of academic reporting, which they may or may not find appropriate to employ, and of the institutional agendas shaping their work.

Without such reflexivity in the academic and scientific arena, existing conventions may limit the possibilities of envisaging the different kinds of research which might address (and transcend) the disillusionment with academic research illustrated above.

If (in this case formal) research is indeed (intended as) a means of informing, 'implementing', 'creating' or stimulating change, as members of the environmental education community implied, such research needs the potential to engage with 'change'. However, if the research, its methodology and the form of its outcomes are largely determined by unquestioned conventions of academic institutions, the needs of funders and the visions of external consultants, the possibility of its informing and stimulating change beyond the interests of these powerful social sectors would seem very slim. Through research conventions institutions illustrate, exercise and engage social power in multiple ways. This issue is discussed in the next chapter, where the potential for change in research institutions is explored, with reference to the links between knowledge production, power and Enlightenment ideals.



CHAPTER 6

POWER AND POTENTIAL IN MODERN CONCEPTIONS OF CHANGE AND RESEARCH

Our conceptions of change are practices that establish priorities and positions for individuals in social relations (Popkewitz, 1991:2)

[An exploration of] the confrontation between breaks and continuity of social change [would require attention to] the relation of knowledge and power that structures our perceptions and organizes our social practices (Popkewitz 1991:1).

6.1 'CHANGE' AS A LENS AND A FOCUS FOR ANALYSIS

6.1.1 Introduction

To continue with the analogy of this document as a range of portrayals of a landscape, this chapter can be likened to a satellite image which has been taken with a specific aim in mind, namely to reveal potential and limitations within the studied landscape. Satellite images can demonstrate areas of growth and areas of degradation, eg. high biomass production or spreading desertification. In this chapter I explore the potential and limitations of different orientations to education and research with regards to 'significant change', i.e. change which will prove to be a significant response to the environmental crisis in an educational context. I review different conceptions of ways to bring about change which underpin the positions on environmental education and research described in Chapter 4. The conventions of 'institutionalised' research (see 5.7.1, 5.7.3) is an important area to explore in the context of potential change. In the process of discussing these aspects I refer to other substantive issues outlined in Chapters 4 and 5, particularly instrumental views of research, the 'theory-practice' divide and the notion of 'othering'.

The chapter consists of four parts. In the second part (6.2, following this introduction) I draw on the data to describe *three perspectives on bringing about change* which, I contend, were implicit within the first three positions on environmental education / research described in Chapter 4 (4.4.2-4). I propose that what appeared as 'models of change' - through management, facilitation and empowerment, respectively - have common features stemming from the modern perspective of change within which they are conceived. Rationalist, instrumental, expert-driven notions of change limit their potential to sprout significantly different directions.

In the third part of the chapter the focus is on *inconsistencies in interview discourse* (6.3; see also 4.2.3 and 4.5) as possible signs of change or resistance to change. With reference to various

influences shaping shifts in discourse in the southern African context I conclude that change may be stimulated, be feigned and become manifest in multiple ways and that inconsistencies in the discursive data provide examples of all of these,

In the final part of the chapter I focus on *research as an institution*, that is an endeavour based on conventions that are seldom critically considered in everyday practice. Noting participants' requests for more 'useful' research and altered research styles (6.4.2; see also 4.4.3.4 and 5.7) and exploring proposed alterations, I move to propose a re-examining of the notion of 'useful research'. Limitations to change are identified in scientific and political arenas, where knowledge and power are tied up in methodological conventions and economics. I conclude that a prevailing reification of research, as is the case within the arena of environmental education, stifles its potential as a significant process of change.

This first part of the chapter (6.1.2-6.1.5) *introduces research results* which will be drawn upon, along with the discussions of Chapters 4 and 5, for these deliberations (see Fig.3.1). It also explains my choice of 'change' as the major lens for analysis applied in the study. The decision was based on both the chosen framework of the study (a context of change which represented 'the topography' of the landscape) and the prevalence of references to change in the data ('elements of the landscape'), as follows:

In Chapter 2 I outlined the context of social change which framed and shaped the study. It comprises regional and global environmental, epistemological and political changes which appeared relevant in the light of their centrality in my personal/professional life. To work in the arena of education with a focus on the environment in southern Africa in the early nineties, is to be very aware of the issue of change. Most significantly, a focus on change also befits a conception of environmental education as a process of (O'Donoghue 1993, 1994) and a focus for social change (Fien 1993, Huckle 1993, Robottom & Hart 1993, O'Donoghue 1993).

In this study a number of respondents referred spontaneously to educational and other arenas of social change and several of them linked research priorities to change. Not surprisingly, however, there were different views on the nature of the change required as well as on ways to get there. This I illustrate below (in 6.1.2-6.2.5). Two participants also made the point (6.1.3) that one has to clarify what is meant by change. In the following sections I

- * give an indication of the range of references to change in the data, which included, significantly, links between change and research priorities (6.1.2, 6.1.4),
- * briefly outline meanings of the term 'change' as encountered in this study (6.1.3),
- * show that research participants shared an awareness of a context of social change, with references to data which also illustrate some of the discursive changes in environmental education in southern Africa and a range of influences that appear to have shaped such trends (6.1.4), and
- * note those individuals who questioned a focus on change (6.1.5).

6.1.2 The Range of Responses Relating to Change

Through the interpretive lens I chose, references to change appeared to be central to the discourse of many research participants, particularly those from South Africa and Namibia. These references included statements on:

- an urgent need for change, in political, educational, developmental and environmental contexts (eg. P2, P3, A1, A5, M2, S8); P2 seemed to summarise many other participants' views when he claimed that environmental educators "need to remedy and improve our situation at this point in time" and that 'the right kind of research' had a role to play in that respect;

- the necessity of environmental education/research taking cognisance of socio-political change (A1, A5, M6);

- a need for research to study change ('the process of social change, and how it comes about' - K1, also A2, A5);

- the management of change and the role of research in informing that process (S3, L2, SAWMA, HSRC);

- a need for changes in research styles (see 5.7.2.1) to render research more 'useful', particularly to 'practitioners' (P2, L4, L5);

- the need for research to inform, guide, support, stimulate, "create" (P3) or bring about change (M2, A1, A2, A5, K1, A2, A3, S1, S2, S8, L3, L4, SAWMA).

Research linked to change was perceived by several interviewees as a research priority. Asked if he saw social change as a function of research, P3 responded "What else is research for?"; research was "to inform people about their world [towards] ... better processes". The notion of change - and no doubt what 'better' entailed - was however interpreted in several different ways, as Chapter 4 (4.4.2-5) began to illustrate.

6.1.3 Change: Meanings of the Term

When the concept 'change' was introduced as the critical lens in this study in an early discussion document (Janse van Rensburg 1993, see Appendix 2) the point was made by two participants commenting on that document (K2, S7) that the concept itself is far from simple and in need of clarification (K2). 'Change' could be interpreted in many different ways, S7 cautioned, and how would I deal with the fact that different research participants conceived of it differently, when I made a judgement on research priorities? S7 suggested that I should clearly define the direction of change I proposed. Both these respondents were wary of promoting 'change for its own sake'. I return to these points below (6.1.5). Here I will only confirm that participants interpreted change differently. Chapter 4 showed that they related change *inter alia* to reform (eg. S3), the adoption of innovations and interventions including new curricula (eg. C1, S1), improvements in practical situations (eg. P2), greater clarity and understanding (eg. A2, A5), political (A1) and personal (P3) transformations and hegemonic shifts (A1). These conceptions are discussed below (6.2). Suffice it to point out here that the different interpretations (and the grounds on which they were also similar) presented not a

problem for analysis, as S7 thought, but the substance, given the reflexive orientation of the study (see 3.7.2.3).

I do, however, need to clarify my own interpretation of change. For that I draw, as I will frequently do in this chapter, on the work of Popkewitz (1981, 1984, 1991) who studied the historical and contemporary developments in educational research and reform from a social-epistemological perspective which I find particularly useful.

In Chapter 2 (2.2) I proposed that the environmental crisis was underpinned by particular conceptual and political patterns. In the light of that understanding I am cautious of accepting the adoption of interventions and projects which do not enable overtly different ways of thinking about and acting in situations, as significant change. Such adoptions I would term reform (see 4.4.2), which I see as a process of re-ordering elements within a situation which in essential ways remain the same. I contrast this with transformation as substantial or significant change (see 6.2.6).

Popkewitz describes change in contrast with continuity: in juxtaposing the present with the past educational theorists can identify breaks as well as continuities (Popkewitz 1991:219); the breaks represent educational 'change'. He emphasises the *conceptual and political* dimensions of educational change by referring to them as "ruptures in ... epistemological and institutional practices". He also cautions that change should not be viewed as a "singular monolithic entity" (1991:29). The patterns in which educational change occur appear to be "plural and unstable" (p.29), characterised by various interacting layers of institutional conduct which involve contradictions, tensions and conflicts. Like fibres in a thread, practices and discourses overlap or discontinue. This is reflected, for example, in contradictory statements on the nature of environmental education and research (see 5.2, 5.3 and 6.3.2).

Thus change in an educational context, and particularly in relation to environmental education, does not necessarily or only relate to changes in activities and policies, but significantly to

what is constituted as the knowledge of the world, and how that knowledge shifts and is modified as a result of changes in the social practices in which cognition occurs (Popkewitz 1991:30).

This is of particular relevance in a study focusing on research in and for a context of change. Political change and socio-ecological dilemmas require the emergence of 'new' ways of thinking about the world, what Doll (1989) called 'transformative' knowledge. This chapter reflects and explores directions of 'new' knowledge (by reflecting on shifts in discourse) and recommendations for 'new' ways in which to develop knowledge (research priorities) and how these shape and are shaped by social practices, particularly those of research within institutions.

In the next section I present data to illustrate participants' involvement with multiple levels of change, which at the same time depicts features of the context of environmental education in southern Africa during the study period. I then highlight three features of this context which seemed particularly relevant in stimulating and shaping change.

6.1.4 Involvements in Change and Influences of and on Change

6.1.4.1 *Participants' involvements in multiple layers of change*

The trends which I observed during this study were by and large changes in discourse, shifts in the way people were talking about their ideals in and understanding of environmental education and research. This is no doubt related to the fact that my analysis focused on interview, workshop and documentary discourse and only peripherally on the observation of actual activities. However, it might also be that discursive changes are a first or most noticeable sign of change (see 6.3).

The prevalence of references to change is not surprising. Firstly, most research participants worked in either environmental education (22 interviewees and some 25 workshop participants) or in environmental management or - science (three of the remaining 16 interviewees and about 100 workshop participants). A concern about the environmental crisis, apparently shared by these participants, is an obvious reason to be interested in social change. Secondly, several of those who worked with or within the schooling systems of all the countries surveyed recounted a dire need to improve the quality of formal education (eg. K1, V1, M5, A1). Thirdly, many research participants (eg. S3, M7, L4, P2, S5, S6, A1, A2, S8, C2, M2, M3, M4) referred to political changes, notably in South Africa and Namibia, and perceived them as relevant to environmental education. Finally, several interviewees (L2, L3, L4, P2, C2, M2, L5, S1, K1) showed at least a superficial awareness of international and local trends in educational research methodologies.

The results thus show that research participants were also aware of the trends and shifts which I saw as important dimensions of the context of this study, relating them to their work in environmental education. Those who seemingly preferred to ignore these trends in directing their work and research (L2, L3, S4) were in the minority (6.1.5).

International discursive trends in the arenas of educational research, pedagogy and development were reflected in participants' references to:

- * shifts in research 'paradigms' (L2, L3, L4, L5, P1, P3; see also 5.3) and the prominence of participatory and action research (A1, L4, L5, P3)
- * the merits of 'progressive' educational approaches which included constructivist methodologies, a "holistic" or "integrated" orientation, "learner-centred", "issue-based" and "cross-curricular" strategies and teacher-based curriculum development (L4, L5, M4, M5, M7, P3, S8, V1, K1, A1, A6);
- * 'community-based' development and conservation models in which 'parks-neighbour relations' and "capacity-building" had become popular strategies (P2, M1, C1, C2, S5, S6, A6, SAWMA).

These respective ideas were contrasted with: social science methods which tried to emulate natural science methods; authoritarian, teacher-centred approaches to teaching which emphasised 'rote' learning; and 'top-down', expert-driven strategies for development, conservation and environmental

management. They represented fairly recent ideas for most participants, some of whom described new trends only in terms of what they were opposed to. An example would be a description of progressive teaching as "non-rote" and "non-authoritarian" and directed at others who were "not target groups" (V1).

I do not intend to describe or discuss these trends in detail. My intention here is to rather explore some of the influences involved in bringing about these shifts in what many participants have come to espouse as the best ways in which to do research, teaching, conservation and development. These shaping influences included politics (and its twin, economics) in southern Africa, international funders and consultants, the institutions in which participants were situated and prominent members of the environmental education community.

6.1.4.2 *Shaping influences of and on change*

As noted above, the "patterns of thought" (Popkewitz 1991:5) observed in this study intertwined with international discourses on research, education and development. However, they were also inextricably linked to local socio-political circumstances:

At the time of the study Namibia was in its first years of majority rule (having obtained independence from the South African government in 1990, see 2.3). Virtually all Namibian interviewees referred to the legacy of past inequities under Apartheid rule. Comments abounded about the "two societies" in the country, 'black and white', 'European and African', a perceived dichotomy between them and the need for environmental educators and researchers to be sensitive and pro-active about that situation (M2, M3, M4, M6, M7). Reports of negative attitudes towards education among black youth (M2, M3), negative attitudes towards "top-down" development - and conservation initiatives (M2, M3) and towards "white elitist" conservation organisations (M2) were all related to the legacy of minority rule.

Although Zimbabwe became independent from a minority government in 1980, research interviews here also raised references to a colonial past. Efforts to improve formal education and an 'underdeveloped' economy and environment were frequently alluded to.

The year in which data collection began (1992) was characterised by a dramatic transition towards democracy in South Africa. This process triggered, and was evident in, a widespread multiplicity of activities aimed at social and educational change. Data presented below reflects examples of such changes in the environmental education arena in the country.

The observation that *politics* was influencing the arena of environmental education was illustrated by two South African interviewees (L2, L3) who explained that some of their colleagues were being "forced" by the changing situation in the country and its influence on the institutions they worked in to re-shape their practice (research, conservation) in order to do what would be perceived (in the wider community or by a new government) as of more relevance in a new society.

This introduces the observation that various *institutions* might have had an important role in shaping participants' views on and responses to change. Although not confined to them, responses to political change was in this study particularly visible in institutions linked to the previous South African regime, namely the government *and* large local corporations. These institutions were state and para-statal education and environment departments, national and provincial conservation agencies, research institutions and both government and corporate funders. (This observation followed from Coding 3, Fig.3.1). I will first report references to change related to participants' professional contexts in government-linked settings, before moving to relevant statements by funders.

References to political pressure on institutions to change were common among South African interviewees from government conservation and education departments: The statement "*Ons weet dit moes kom*" ('We know this had to come', in broad allusion to political change and its implications) was made more than once. These participants seemed to regard political change as a necessary development (with varying degrees of enthusiasm!). However, there were also signs that proposed changes in government institutions involved the levels of policy and discourse, but not practice (see 6.3.2). In 1992 local interviewees noted that their colleagues in education departments had adopted a 'wait and see', 'marking-the-pace' attitude in the period preceding the instatement of a new government (in 1994). Some interviewees appeared unaware of any inconsistencies; others who called for 'significant' change were frustrated by a perceived lack of 'real' change (see my reference to an interview with K1, below).

There were, however, also several developments in education and conservation spheres in anticipation of the political change in South Africa. The then Department of National Education (DNE), which up to then had never been involved in curriculum development, produced the *Education Renewal Strategy* (DNE 1991) in order to 'set the standard' for a first non-racial education department's new national curriculum (S1). According to one interviewee the then Department of Education and Culture (DEC)¹ extended their circle of curriculum consultants to include, for the first time, 'experts' from outside the Department. Curriculum consultation was seen as becoming 'much more open' (S1) or transparent and participatory. S1 also reported that DNE employees were keen to address perceived antagonisms and accusations of 'slackness', to show, for example, that they were making a contribution to environmental education and that they were doing so in a consultative manner. A trend towards broader consultation was however more visible in the environment department, before and particularly after the instatement of the government. Another development in direct response to the 'new dispensation' was the attempt to convert a provincial education department's *veld* schools from centres for the teaching of Christian-National values exclusively to white youth, to (racially and ideologically) 'open' environmental education centres (S1, S8). The reason given was that 'we [employees of government education departments] know it can't carry on like this² in a new

¹ Responsible for the education of 'white' children under the Apartheid government.

² *Veldskole* were widely regarded as strongly oriented towards the inculcation of Christian-National values among Afrikaner youth. (See Ashley 1989 for a description of Christian-National education as one of three prominent ideological orientations in education in South Africa.)

dispensation'.

The arena of government-based conservation also featured political developments in response to 'changing times' (S3). This I observed throughout the region: in South Africa, Namibia and Zimbabwe there were references to shifts away from a preservationist, 'top-down' and centrist approach, to a development- and people-conscious approach (K1, S3, M6, C1, C2). One concrete development involved amendments to the South African National Parks Act which now allow for conservation or 'ecosystem management' (S3) to be run concurrently with 'the new dimension of local population involvement'. Some believed that such changes were in the interest of effectiveness; MacDonald (SANF 1993:20) writes

... in all fields of conservation it is much more desirable to have a bottom-up rather than a top-down approach if the eventual conservation result is to be optimal.

An interviewee in this study had more cynical views on why government-linked conservation bodies have started to emphasise the involvement of the 'communities' now described as 'neighbours' to the land they managed. L3 attributed this development to questions about the relevance of 'protected areas' in a new regime. Whereas previously the scientific management of natural resources was not seen as a concern of the general population, now "people mattered" to conservationists (L3); if official conservation bodies were to continue managing protected land the benefits of such areas would have to be "seen to" outweigh their costs (L3). This presented a shift in the "terms of reference" for conservationists. L3 claimed that they now had to "justify their existence".

L3's interpretation of the situation cast light on the disposition of S3. The latter described the changes in his organisation as significant shifts in keeping with political changes which he deemed necessary. However, he was also impatient for political transition to be 'dealt with' as soon as possible so that conservationists could 'get on with the job' of managing natural resources 'on behalf of society'. In contrast to the espoused changes and in keeping with the prevailing orientation in his organisation, conservation was in his view neither a political nor a democratic activity. Political change presented as a necessary hurdle to overcome, rather than an opportunity to embrace.

There were other indications that developments in government and para-statal bodies entailed only fairly superficial shifts, evident mainly in policy and other rhetorical forms of discourse. K1 expressed frustration with an apparent resistance to change in the terrain of practice, in what he perceived as 'monolithic' and 'hierarchical' institutions which included the para-statal conservation body in which he worked:

I see in our own organisation, it develops over the years a culture of its own ... let's call it a bureaucratic culture; one also finds this in schools. This thing is incredibly strong, you know, I've just seen again, with all the [political] changes that we have, in the long run it [the existing organisational culture] still wins. Because it starts becoming people's own interest to keep it as it is.

This interviewee, who has also been a school teacher, referred to "the prevailing ethos ...[in] the

formal education sector in South Africa" as being "particularly resistant to innovation and change". In his view "legislation and bureaucracy" were preventing governmental organisations from being "flexible" enough to "fully explore and react to changing trends and needs in environmental education".

It would thus seem that whereas institutional settings provide incentives to (some forms of) change, they might also prevent (other forms of) change. The issue of institutional responses to change is explored further in a discussion of inconsistencies in interview discourse (6.3).

Another influence on change in environmental education could be the 'trendsetting' by *local and international funders and consultants*. In South Africa for example S5 emphasised the importance of 'community-' and 'development'-oriented projects as opposed to expert-driven, 'elitist' and more 'esoteric' projects. A second local funder (S8) referred to a trend towards regarding more 'practical' as opposed to 'theoretical' projects as priorities for funding. These statements were indicative of funding policies and - strategies which mirrored the general discursive shifts and democratisation process in South Africa (see 6.3.2).

While reflecting socio-political and discursive shifts, funding bodies could in their turn also shape discourse. Thus the influence of international funders and consultants was evident in interviews with participants from Namibia, Zimbabwe and Lesotho, who worked closely with such parties (see eg. 3.7.2.1). Links between international funders and southern African educators ranged from funding for single, specific projects to extensive inter-governmental alliances. The current Namibian government, for instance, has historical and contractual links with northern European aid agencies that were closely involved in developing aspects of that country's educational reform (see MEC 1993 and Janse van Rensburg 1994).

The far-reaching effects of such contractual engagements are vividly illustrated in the new Namibian government's decision to implement the recommendation of a group of international consultants to declare English as official language (Phillipson 1992). Following this decision English became the medium of instruction in schools (MEC 1993:63-66). This now presents a major problem in the process of educational reform (Janse van Rensburg 1994) in a country where fewer than 20% of teachers spoke English at the time of Independence (Phillipson 1992). Any other language policy in this multi-lingual society would have raised problems. This highlights the significant role of foreign consultants in such consequential decisions, a role which in this particular instance has been described as a case study of 'linguistic imperialism' (Phillipson 1992).

The 'foreign influence' was not always taken for granted, though. A Namibian working for an international agency funding research and development in that country regretted the strong international influence which followed the institution of a democratic government (see 5.7.3, 6.3.2).

In this study the influence of funders also seemed problematic in other respects: There appeared to be a lack of thinking through the changes proposed by some funders (see some of the inconsistencies reflected in 6.3, particularly 6.3.2.2). I also observed an instance of a reluctance to allow those being

influenced by their policies to think through such changes. I attended a workshop (details withheld) in which the (Western) funder's consultant was vigorously promoting constructivist approaches to teaching, but refusing questions which would allow (African) participants to examine the underpinnings of such approaches. His rationale was that these participants (teachers) were not "ready" to engage in "theoretical" discussions.

The *environmental education community in South Africa* in particular, formed yet another context which suggested certain kinds of changes to its members. Many of these changes could also be linked to socio-political imperatives. For example, A1 implored fellow environmental educators to "engage with" the problems of "reconstruction". Similar points were made by S5, S6, A5 and M6. This call seems to have been taken up by the South African-based organisers of the 1994 workshop and conference of the Environmental Education of Southern Africa (EEASA) who chose the theme *Realising the South African dream: The role of environmental education and development in the new South Africa* (EEASA 1994).

There were several calls for various professional practices to be more appropriate to and learn from the African context (M2, M3, M4, M7, M8, L5, P2; also see 5.5.2.3). These calls appertained to combining or replacing "individualistic", "management-oriented" approaches with more "ecocentric", less individualistic and "postmodern" approaches (L5, but see reference to L5 in 6.3); recognising the worth of "indigenous" / "African" / "traditional" knowledge (C2, SAWMA, P2, M7) and values (C3, M2); incorporating "pre-colonial practices" into Western science (M2, also SAWMA); and considering "traditional" teaching styles (P3). (In 6.3 I question the notion of such a traditional teaching style, at least in modern southern Africa, in the light of contradictory comments by P3.) At times these views were not clearly conceptualised and offered only at the level of rhetoric which had not been carefully thought through.

A notable feature of the environmental education situation in South Africa was the perceived shifts in orientation of some prominent members of the environmental education community (introduced in 5.2.3 and 5.4). Some interviewees interpreted the discourse of these "powerful personalities" as rhetoric (as discussed in 6.3). The discourse of the environmental education community in general also featured discursive shifts; examples of 'newspeak' included 'holistic' (referred to in 5.2), 'facilitation', 'empowerment', 'development', 'capacity building' and 'the community'. These terms were at times used in an undifferentiated manner and members of EEASA have suggested that they be explored as part of the theme of its annual conference in 1995 (*Progress and Paradox*, see EEASA 1995).

Finally, interviewees also mentioned *educational developments* as a feature of the present environmental education landscape. They noted a shift from an emphasis on "outdoor" and "scientific" education (L1, S1) and the teaching of ecology, to a 'broader' conception of environmental education which placed more emphasis on the social dimension of the environment crisis and hence incorporated issues of development (S5, A5, A1). The realisation of this trend was not without problems. For example, some who espoused this conceptual development also maintained that there was a need for separate 'development education' (See section 5.2). This shift reflected

international trends in environmental education (see 2.2), but was probably also shaped by a strong emphasis on socio-economic growth in the region. A1 remarked that "development [was] the agenda in South Africa". The broad shift in the conceptualisation of environmental education, from a focus on wildlife and conservation to one on people and development, was intertwined with pedagogical developments. For several interviewees (M6, K1, V1, L4, L5, P2, S8, S1) a major contribution of environmental education to schooling was the encouragement of teachers to embrace "experiential", "active" or "critical" learning and issue- and concept-based, learner-centred, cross-curricular approaches to teaching (see also Clacherty 1993; Janse van Rensburg 1994; Naidoo *et al.* 1990).

6.1.5 Not All Participants Embraced Change

As reported more than once above, some environmental educators' involvement in change appeared to be confined to the rhetorical level. The observation of this phenomenon is taken up in the discussion on inconsistent discourse (6.3). Examples might include those interviewees (S2, S3) who saw political change as a hurdle which others should get over so that 'the real work' of conservation or environmental education could continue, much the same as before. Yet other interviewees (L2, S4) chose to ignore socio-political change; one participant indicated that he was fortunately free of institutional factors forcing him to respond to socio-political developments.

My decision to focus on change in this study did not go unchallenged, either. As noted in 6.1.3 two of the participants who reviewed the discussion document describing the notion of change as analytic lens (Janse van Rensburg 1993, Appendix 2) cautioned that such a focus could easily be construed as a quest for change 'for its own sake' (K2, S7) and that one needed to specify what was meant by change (K2), why it was deemed an issue and what the directions for proposed changes were (S7). I believe that my clarification of the chosen research framework (see 3.2.5) and my interpretation of the notion of change (6.1.3) address some of these concerns. However, my task is to describe and comment on changes and opinions about change; not to direct, but to clarify existing directions and to explore their potential, as I now intend to do in the rest of this chapter.

6.2 MODELS FOR CHANGE

"... change models ... are designed to conserve"
(Popkewitz 1984:151)

6.2.1 Introduction

In Chapter 4 (4.4.2-4.4.5) I outlined four perspectives on environmental education and research apparent in the study, noting that they were accompanied by particular views of what change entails: Reform ('Position I'), the improvement or Resolution of practical problems (Position II), Reconstruction (Position III), and Reflexive processes. The first three perspectives on change seemed to involve particular *models* of how the advocated change was to be brought about. On the following

pages I outline and critically review the three models of change which I discerned in the data. I go on to argue that they have shortcomings which restrict their potential for change and which are linked to the recurring concept of change as a modernist phenomenon. I then explore the 'reflexive' perspective on change emergent in the data, noting that it was more tentative and less instrumental than 'models' of change.

6.2.2 Managing Change: The Centre-to-Periphery Model

The first set of views on change to be drawn from the data correspond to a reform-based orientation to environmental education and research, the 'management for social change' position outlined in 4.4.2.

From this position participants thought that change could be brought about -

- through the "transfer" or "communication" of scientifically derived information, knowledge or "messages" about environmental issues, to the public and particular groups (SAWMA, M8);

- by advertising (P2) or "selling ideas" (V1) regarding the environmental crisis and ways in which to respond to it;

- through changing others' (as opposed to own) perspectives (C2), behaviour (M3, SAWMA), worldviews (M7) or "mindsets" (P3);

- through "brainwashing" children to care for the environment, in order to break "the cycle" of environmental neglect (A6);

- on the basis of research-derived, technical information on 'how to' make the necessary changes (SAWMA; see 4.3.3.5)

- through research, implementation of interventions and feedback on its adoption (S1, S8); expert curriculum innovation (S1, L2) and resource development (L2);

- expertise in developing educational strategies (S8);

- through expert-derived interventions with a semblance of participation (C1, A6).

These results reflect an approach to change that is interventionist³, technicist⁴, rationalist and expert-driven.

³ An *interventionist* approach to development or education involves interrupt and steering a situation from a position perceived as *outside* that situation, in a direction determined from the outside.

⁴ I see *technicism* as an unquestioning belief in the value of technique and technology (i.e. knowledge dealing with scientific and industrial methods) in dealing with challenging situations.

The model for bringing about change to which they relate pivots on decisions made and directions set by scientific and educational experts, leading to interventions, innovations, campaigns and curricula which are to be implemented as effectively and efficiently as possible, with technical guidance. The process is to be driven by expertise derived from scientific research. Central to this view of change is the notion that if the expert's understanding of issues were shared by others, a harmonious co-existence would ensue.

In the 'change through reform' position identified in this study (4.4.2) there was evidence of a view of change to re-establish an assumed order which had been disrupted by irrational or uninformed actions (political mayhem, the environmental crisis). Participants with this orientation (eg. S3, L3) thought that the situation would be rectified by rational behaviour change when people were given the necessary knowledge and skills, as provided by science and educational techniques.

Whereas social change seemed to have been accepted as inevitable and desirable there was also evidence for a wish to manage such change through rational deliberations and control. Such a desire was obvious at the HSRC conference on "the management of social change" which focused on ways to 'handle' (see Fig. 4.1) the earth and society from the central, privileged position of scientific researchers.

As the quotes above show, participants in this cluster aimed to 'engineer' society in order to reach their pre-defined objectives. Those with a conservation, natural resource management or agricultural extension background espoused a model of change based on communications theories in which information, if transferred effectively, rationally leads to behaviour change (see eg. Duvel 1987). Formal education representatives and government officials interviewed tended to adopt the classic RDDA model of change. This is based on four successive stages namely the research, design, dissemination and - hopefully - adoption of an intervention (Popkewitz 1984:131-9).

Since the key role of a central authority from whence change is to be initiated and directed is taken for granted, Popkewitz (1984) calls this orientation the centre-to-periphery model of change. He related it to a "positivist claim to ... social progress" (Popkewitz 1991:228), a claim that social progress can be brought about 'positively' or with certainty "through the application of rational investigation and planning". The authoritative knowledge which plays such a key role in directing management and change is regarded as neutrally descriptive. Many contemporary educational researchers (eg. Lather 1991, Popkewitz 1991, Reason & Rowan 1981, Robottom & Hart 1993) would regard such a view as "analytically and historically untenable" (Popkewitz 1991:229).

I noted above that the RDDA model of change was prevalent amongst government education departments, but also para-statal conservation and development agencies in South and southern Africa. This is not surprising, for it has been the dominant international strategy for education-related reform and development in recent years (Popkewitz 1984, 1991).

Perhaps the more significant observation was a discourse which signalled a wish to move away from this model. The professed support for a "community-based" (L5) or decentralised approach (see

6.2.3) was sometimes characterised by some ambivalence, however. This was evident in statements that change can be brought about by a *combination* of "(authoritative) teaching and (non-authoritative) facilitation" (A6: also P1, P2, P3, L4); or by *either* a slow participative process from "grassroots" upwards, changing society's world view eventually *or* a faster, "almost deterministic" process (P2). Most openly ambiguous was A6's model of development as a mixture of "nurture and nudging", the nurturing explained as steering the community towards decisions which are more appropriate in the opinion of the change/ development agent.

The motivation for (albeit ambivalent) attempts to move away from 'top-down' models of communication and development could be at least partly ascribed to the association, in South Africa and Namibia, of this model with the practices of authoritarian regimes. Some participants from South African government - and other relatively conservative institutions (eg. Afrikaans universities) regarded the RDDA approach as 'politically incorrect'. Hence there was much talk of 'grassroots' approaches and 'involving the community', the latter concept having become a label for disadvantaged groups perceived to have been marginalised in the past. L4 explained his call for action research as priority research method by referring to its 'more politically appropriate' nature. Other participants pointed to the history of the government's "technicist", "authoritarian", "centred" and "structured" interventions (A2) and their low success rate (A1, A2); this prompted calls for participatory curriculum development (A1, L4). "Passing down policy" (A1) was seen as a limited development strategy.

The RDDA model has also been publicly criticised in local environmental education circles by O'Donoghue & McNaught (1991) and internationally by Robottom & Hart (1993). These authors linked it to 'top-down' development and behaviourist assumptions and 'transmission' modes of teaching, respectively.

Popkewitz (1987) linked centre-to-periphery models of change to an empirical-analytic approach to research and to positivism - that which claims "certainty in contrast to the undecided ... the-exact in contrast to the indefinite ... " (Habermas 1972:74). The model also reflects a "technical interest" (Habermas 1972:309) which is

grounded in the need of the species to reproduce both itself and those aspects of human society which are deemed to be of most worth. To achieve this purpose, persons have a basic orientation towards controlling and managing the environment (Grundy 1987:11).

The point that the desire for control can be linked to the drive for self-preservation and the preservation of that which is deemed worthwhile in society, is useful. It not only extends a widespread perception that this model of change reflects arrogance and 'elitism' (L4, L5), but also adds to the illumination of the limitations of this model in terms of bringing about significant change.

A desire for control on the basis of 'certain' knowledge is evident in a rule-based orientation towards research (expressed eg. by L2, L3) and the predominantly instrumental perspective on research revealed at the SAWMA workshop in particular (results reflected in 4.3.3.5). As Shymansky and Kyle (1992:762) argue:

Control is achieved through rule-following actions based upon empirically grounded laws. A primary concern is with the product or outcome [of research] ...

A desire to manage, control or 'order' both the natural and social environment, based on law-like rules and strategies informed by 'certain' knowledge, forms the basis for a model which conserves rather than transforms. Popkewitz (1984) argues convincingly that the RDDA model has not been designed to bring about the kind of change reminiscent of the 'real' or 'radical' changes so many participants called for. Although a critique of centre-to-periphery approaches to change should not be interpreted as an argument that change should never be initiated or directed from a so-called centre, and although it needs to be pointed out that there are different versions of RDDA models, there is no doubt that the limitations of an RDDA approach to developing and implementing innovations which are to fit in with the *status quo* restrict its value in responding to the environmental crisis.

6.2.3 The Community Problem-Solving Model of Change

This cluster of views is the first of two models described here which reflect a desire to 'democratise' change (see Popkewitz 1984:139 and 6.2.4).

In the "populist tradition" of the 19th century, social and political institutions were to be made "responsive to their local and grass-roots constituencies"; the aim of "the revolt against expert knowledge, government, and bureaucracy was to *democratically transform* institutions by denying power to elites" (Popkewitz 1991:170). The discourse of P1, P2 and A6 among others (4.4.3) illustrates this perspective on change well. In the context of a perceived urgency to establish and promote "ee for the people" in as many spheres of life as possible and "to level the ground" P2 stated that "the theorists ... are not involved on the ground" and the practitioners were "the real researchers", that research was to be for the immediate situation, readily implemented to solve practical problems. Participants in this group reported that change would come about not by "theorising" (which makes us constantly change direction and unable to take action - P1), but through action research involving practitioners (L4, P2).

These were examples of "community-based" (L5), "grassroots" (P3) or decentralised models of change (see Popkewitz 1984:139-146), oriented towards problem-solving by those who experience the problems, eg. teachers or disadvantaged communities. Here the promise was progress through "knowledge that is immediate, local and helpful" (Popkewitz 1991:230). The idea was furthermore that 'needs' and directions for change should be identified by practitioners/ communities, and experts should act only as neutral facilitators to help them bring about those changes. The necessary changes were to be identified by and within communities, and the community problem-solving approach focused only on those practical problems which seem obviously suitable to be tackled by such communities. As such it is closely related to the practical interest associated with the 'Resolving Practical Problems' approach to research (4.4.3) with its emphasis on consensus among 'communities'. (It also departs here from the critical orientation, on which Popkewitz based his description of the populist tradition, in that there is less of a sense of wanting to 'transform' systems.)

This view of change and how it is to come about can be related to what Habermas (1972) called a 'practical interest'. Practical interests are aimed at interpretative understanding, not for technical aims, but to facilitate interaction with the world, by helping one make judgements about the 'right' (practical) action within a particular environment. In contrast to the previous model of change it is grounded in the need to live in and as a part of the world, not to be pitted against it (Grundy 1987:13). Negotiation and consensus making are important features of practical interests (Shymansky & Kyle 1992:72).

Shymansky and Kyle (1992:72) also point out that "[a] curriculum with an emphasis on practical interests is often based on constructivism and emphasizes learning with understanding ..." This model of change could be linked to Constructivist and Interpretative perspectives on education and research (see Table 4.2), evident in the promotion of learner-centred teaching and teacher-centred curriculum development, both of which reflect the rejection of the authoritarian stance of Position I which was a key feature of this model.

The emphasis on community decision-making overcomes some of the weaknesses of Model I, but there are limitations to this model for bringing about change. These relate to (1) the passive role of the facilitator, (2) the fact that the root causes of many community problems lie outside of the narrowly defined boundaries of the practical problems usually addressed, (3) the ability to realise and question that it is usually "the opinions of the powerful in the society" around which consensus is formed (Grundy 1987:17) and (4) the conceptual 'practice-theory' gap which was discussed in 5.5.

Participants in this study who have extended the rhetoric of the model into actual practice encountered the first limitation, that of the passive facilitator. P1, P2, P3 and L4 reported that their experience has led them to adopt a model with both "top-down" and "bottom-up" elements; when working with educationally impoverished people in particular, the educators/ developers /change agents cannot be passive facilitators, they argued. They needed to make a more active contribution to the problem situation (L4, P3).

A decentralised approach was also described and practised by M1, C1, C2 and C3, in communal resource development programmes. One of these programmes illustrated the second limitation of this model of change, namely the lack of a platform from which to see or move beyond the practicalities of complex situations, to address fundamental structural constraints (Popkewitz 1984:145-6). An example from this study came from Zimbabwean programme developers who had been attempting to involve women in decentralised decision-making processes. However, the male-dominated communities in which the projects were situated prevented that from happening. Women had to ask men's permission to voice or act on their own opinions. The community-based approach had no way of addressing this issue, which was seen as a problem by 'outside' researchers and developers involved in the programme, but not necessarily by the 'insiders', at least not in any way in which they seem to be able to address the problem:

The women are really the custodians and the users of these resources, and without ... their participation, they are likely to lose a very big chunk of the whole element of natural resource use. The problem is that the gender analysis is always being

articulated by elites like you, but doesn't go down to - *the very people who should be talking about gender is the very rural community ...* (C3).

According to the community problem-solving model, the facilitators were not to intervene in the situation (but see also 6.2.4 below, for it is doubtful whether they could be seen as 'outside' the situation).

The concern that an unexamined community consensus on problems "can be false when powerful interests are participating in the meaning-making and agreement process" (Grundy 1987:17) also relates to the above. This criticism has been levelled against this model of change by critical theorists, who espouse the notion of a 'false consciousness'.

6.2.4 The Critical Model of Change

The third cluster to be drawn from the data contains the views on how change could be realised which proposed "empowerment", "transformation" and "participatory", "collaborative" and "action research" as highly desirable strategies for bringing about change (eg. A1, M2, M3, P3, S6). Change would be brought about by

"shifting" existing (education) policy (A1);

"radical", "fundamental" curriculum change (P3);

education policy development in a "participatory (as opposed to structural) democracy" - "engaging critically with policy as it is being generated" (A1);

"mobilisation" of "the masses" (A1, M2, M3)

empowering teachers, curriculum change "along with teacher development" (A1, C5);

widening the "research base" to create a "counter-hegemony" (A1; elements of this perspective also in discourse and practice of C5, A2, A3, S6);

empowerment of marginalised groups, institutional capacity building (C2, C3, S6);

participatory and educational processes of research and development (C2, S6, A1, M2, M3).

This discourse is associated with the critical sciences (Popkewitz 1984:44-50) and, in southern Africa, Freirean liberation pedagogics (Ashley 1989). As such it relates to the Reconstruction view of the role of research (4.4.4) with which it shares an emancipatory interest.

The aim of an emancipatory interest is the liberation, particularly of those perceived to be relatively powerless, from dogma, coercion and deceit (Grundy 1987:17), also termed 'false consciousness', from those perceived to be more powerful. Empowerment refers to "the ability of individuals and groups to take control of their own lives in autonomous and responsible ways" (Grundy 1987:19).

Another central concept is that of praxis, which refers to a reciprocal relationship between self-reflection and action:

The constitutive elements of praxis are action and reflection. Freire claims "... men's activity consists of action and reflection: it is praxis ... and as praxis it requires theory to illuminate it. Men's activity is theory and practice; it is reflection and action" (1972 ...). Praxis does not entail a linear relationship between theory and practice in that the former determines the latter; rather it is a reflexive relationship in which each builds upon the other. "The act of knowing involves a dialectical movement which goes from action to reflection and from reflection upon action to a new action" (1972 ...)

Grundy (1987:104-5).

The 'critical model of change' is often regarded as the most progressive amongst the three outlined here (the discourse of A1, M2, M3, L4, L5, P3 refers, as well as recent publications in the environmental education arena, such as Fien 1993, Huckle 1993 and Robottom & Hart 1993). The notion of praxis strives to overcome the theory-practice gap so evident in Positions I and II (4.4.2-4.4.3). The focus on ideological and structural constraints on practice is a further advance on the limitations of those positions. The critical sciences, internationally, are concerned with challenging the present as "self-evident and undisputed, considering that the seeming inevitability of the present is historically constructed" (Popkewitz 1991:231). They reject authoritarianism and the 'top-down' development of Model 1.

However, some of the critical sciences share with positivism the Enlightenment ideal in which reason and rationality are upheld as the means to bring about social amelioration. The difference is that they reject the 'disinterest' or neutral stance of the positivist sciences; critical theorists are explicitly concerned with merging "the project of a critical science with the tasks of social transformation" (Popkewitz 1991:238). This gives rise to "'the knot of genuine tensions and contradictions that are endemic' to an academy that seeks to combine activism and scholarship" (Popkewitz 1991:238-9, quoting Fraser 1989:1). These tensions were encountered by Quinlan (1993) in development projects in Lesotho.

The limitations of the critical position on change lie in the problematic nature of some of its key concepts as described in the international literature, namely 'true consciousness', empowerment and rationality. The researcher plays a key role in the process of enlightenment or liberation from false consciousness, but one could challenge the existence of such a privileged position in the defining of what counts as true consciousness. Habermas' own definition of truth (1972:63) is less than helpful. He suggested that

what it means for a statement to be true is that it would be one on which all agents would agree if they were to discuss all of human experience in absolutely free and uncoerced circumstances for an indefinite period of time.

The notion of empowerment, a core concept in a model of change based on critical theories, implies that power is a commodity that can be given by those who have it (Popkewitz 1991). An alternative view (Popkewitz 1991:30) is that "power circulates". To illustrate this point and as a base for discussions below, I draw on an incomplete and unpublished case study of empowerment in environmental education.

Violet Mthembu, an M.Ed. student at Rhodes University, during 1993 researched the potential of environmental education to contribute to improvements in the quality of the lives of women living in an informal settlement ("squatter camps" colloquially) near Soweto in South Africa. The participants in her study were amongst those stereotyped as perhaps the most powerless in South African society. African women, illiterate, unemployed and owning no property, they appear to be living a hand-to-mouth existence in their make-shift shacks, surrounded by filth and violence.

Thus there are many groups working at social amelioration amongst these women. In the "blocks" where Mthembu's research participants stayed, a church group ran a development project aimed at capacity-building and empowerment. The idea was that the teaching of skills such as candle-making, sewing and gardening would help squatters to become self-sustaining. The project included a soup kitchen which was run, as a strategy towards empowerment, by a small committee of squatter women themselves. It was from the purse of this soup kitchen committee that the chairwoman one day absconded with R800 cash. When this woman, for whom we can use the alias MaSithole, returned to the area some weeks later and the dust had settled about the affair, it transpired that she had used the money to cap one of her teeth with gold. This was, from the perspective of Ms Mthembu and no doubt of the church group, not a rational decision. The theft jeopardised MaSithole's chances for further training. More irrational than stealing, however, was the decision to buy a gold-capped tooth, when the purchase of a sewing machine would have 'empowered' her for life. Ms Mthembu explained that such a tooth was a symbol of status among poor urban black communities, the equivalent of an expensive German car among other communities. Thus MaSithole was 'empowering' herself by subverting the system and acquiring something which would give her status and a different form of power than the church had in mind.

Further investigation of the circumstances of the squatter women revealed that they had a less ephemeral existence than is often imagined. Complex social structures organised their neighbourhoods, much care often went into the maintenance of shacks, some of which boasted gardens, and most surprisingly, many women had actually *chosen* to move to the settlements, leaving behind the accommodation and authority of parents or harsh employers. For some women living as squatters is hence a sign of resistance, of 'empowering' themselves.

Several of the participants in Mthembu's study took what little power they had not by joining the systems set up for their development, but by exploiting them. An example was MaDube, who refused to take employment as a cleaner with a friend of Ms Mthembu's, because the friend needed her to work on Tuesdays and Thursdays and on Thursdays MaDube had to meet the church group in order to receive her food parcel.

This case study illustrates some of the problems inherent in the simplistic treatment of the notion of

empowerment so prevalent among interviewees in this study, and indeed with the notion itself. It illustrates that there are different interpretations of power (eg. the church's and MaSithole's) and that power is not consistently located in a particular structure or site. When the church group teaches MaSithole what they value, the power is with them; when she steals their money power rests at least fleetingly with her. If the police arrested her some (fairly unproductive) power would circulate to the church group; if the squatter camp's solidarity of silence against intruders, ruthlessly enforced by an 'army' of comrades, prevented the police to find MaSithole, power would return to her. It also suggests that power is exercised, rather than received.

Popkewitz (1991) explains two dimensions of the concept of power. The first is that of groups or individuals which exercise power over others. Through social, economic, cultural and political transformations these groups articulate their interests; they also demand to regulate pedagogical practices, in order to teach the values and content which they regard as important. Perhaps the most striking example from the southern African context are the past Apartheid and colonial regimes inculcating Africans with Western values and knowledge, including the notion that it is appropriate for Africans to be the labourers of Westerners (see the quote from the Namibian Ministry of Education and Culture in 2.3).

Studying power from this perspective is to identify the "placeholders who prevent progress and others who are resisting or lying in wait to place the world correctly on its feet" (Popkewitz 1991:222). This is the view of power as dichotomy: the state and church has power, black women are powerless. The dualism of empowered/disempowered or oppressor/oppressed loses sight of the subtle ways in which power circulates, operating in multiple sites and through the actions and practices of individuals within many sub-cultures, through "multiple agendas within social factions of movements" and "a multiplicity of relations ... within and among groups at any one time" (p.222). The danger of the perspective of a seemingly dichotomous world - so easily construed in southern Africa contexts with their overarching definitions of racial and to a lesser extent economic oppression - is that it produces homogenous 'others' (*ibid*), reifying The Marginalised, Women and The Community, to name a few (see 6.2.5.3).

"A second notion of power concerns its *effects* as it circulates through institutional practices and the discourses of daily life" (Popkewitz 1991:23). Here "power is embodied in the ways that individuals construct boundaries for themselves ... and envision possibilities" (Popkewitz 1991:223). In this sense, power is relational and regional; it "is intricately bound to the rules, standards, and styles of reasoning by which individuals speak, think, and act in producing their everyday world" (*ibid*).

Popkewitz (1991:5) builds this understanding of power on (1) the work of Bourdieu, who provides the idea of "the social space in which epistemologies operate and of the patterns of social relations that constitute the field of social power ... power as relational ..." and (2) the work of Foucault, which "enables us to consider the relation of knowledge and power". Knowledge is closely related to power, but not in a simplistic manner. Following Foucault (cited in Popkewitz 1991:30) "power is embodied in the manner in which people gain knowledge and use the knowledge to intervene in social affairs". To illustrate, K1 was unable to use his knowledge of the vested interests which

constrained change in his own organisation (K2) and hence felt powerless. His own readiness to act (for he was in a managerial position) might have been constrained by the 'institutional thinking' within his organisation.

This discussion serves as useful background to the following exploration of the limitations of the models of change arising from this study (6.2.5) and their modernist underpinnings (6.3).

6.2.5 Critique of Observed Models of Change

6.2.5.1 Comments and summary

Popkewitz (1984, 1991) developed a critique of all three these models as only able to bring about reform or the notion of change. In fact he argued that they are designed to "conserve" (Popkewitz 1984:151).

In 1984 he ascribed the failure of models based on positivist or interpretivist philosophies to these underpinnings. From a critical perspective he argued that neither of these two "styles of thought" have ever brought about change, for they "... misappropriate those [positivist and interpretivist] sciences in ways that enable social order and stability to become paramount" (Popkewitz 1984:130), thus preventing the educational change evidently sought. Popkewitz claimed that most existing research studies, being based on these 'styles of thought', simply contribute to "motion" within systems. Although he valued the contributions of the critical sciences, he also questioned the critical model of change in later works (see 6.2.5). The latter critique was based on problematic assumptions which recurred throughout the three models (6.2.5.4).

However, Popkewitz also questioned the idea that change can be brought about by applying a model. In his view change can only be described after the event, as discontinuities, disruptions or breaks (after Foucault) in practice and discourse - a view that was shared by participants espousing a reflexive perspective on change (see 6.2.7).

To illustrate recurring themes in the three models of change and to lead into a discussion of their modernist underpinnings, a brief summary of positions follows.

The first model, that of managing social change towards the restoration of order, might have some application in situations where simple but less well-known solutions to particular problems exist. With most environmental issues, however, the solutions are all but simple. They need to be developed through dialogue and interaction (Beck 1992, Quinlan 1993) between scientists, other ordinary people and other specialists (see 5.6.2.4). The record of 'top-down' or RDDA (O'Donoghue & McNaught 1991, Popkewitz 1984) solutions and interventions is less than satisfactory, and in southern Africa reactions against this authoritarian (and perhaps naively arrogant) approach has been linked to reactions against oppressive political regimes and elitist environmental organisations (eg. by M2, M3, A2).

The literature points to integral features of this model of change as reasons why it is unlikely to result in anything more than the semblance of reform. Firstly, the empirical-analytic model of research on which it draws has design features which allow it only to describe and predict the expected (Popkewitz 1984). Furthermore, the modernist assumptions of rational and technical control towards a presumed harmonious order in both nature and society are questionable (Doll 1989). Quantum physics, chaos theory and related postmodern perspectives on education describe a universe in which constant and unexpected change and uncertainty have displaced notions of order and stability (*ibid*). Knowledge, including knowledge of the environment crisis, is increasingly seen as socially constructed, contingent and temporal rather than given, neutral and a-historical (Lather 1991).

The second model, aimed at resolving practical problems in the context of 'democratic' change, tries explicitly to overcome some of these weaknesses. It does so by (theoretically) de-centring the expert to become a more-or-less peripheral facilitator, and handing over the identification of problems and solutions to so-called "communities" of learners. The strength of this orientation lies in the valuing of the learners. One of its limitations had been noted by Popkewitz (1984, pp.139-146) who claimed that the change brought about by research aimed simply at solving practical problems tended to be mere superficial reform, "change as motion within a system" (p.174). Such projects, he argued, did not transcend the immediate practical problems and community sphere and did not recognise those constraints on action which had wider and deeper systemic roots. Robinson (1992) similarly claims that educational research is unable to bring about meaningful educational change unless it fails to question and transform the "action theories" of practitioners. Field (1991, p.72), clearly arguing for a more critical position, states that "popular wisdom" is inadequate to generate sufficient understanding to bring about change, "unless it is combined with the kinds of theoretical insights and analytical skills that are not taught through oppression".

A critical model of change explicitly addresses the so-called 'false consciousness' of conventional thinking. Critical theories have, however, also come under increasing scrutiny, from a postmodern perspective in particular. The limitations of the reconstructivist model for change include assumptions of individual autonomy and the rationalist and structuralist underpinnings of most critical theories. These have the potential to subvert the realisation of transformatory ideals (Kohli 1991, Nielsen 1992). Quinlan (1993) is one of several southern African researchers, some of whom participated in this study, who experienced either difficulties with actualising these aims in practice, or contradictions in the twin roles of group leader/research initiator on the one hand and 'facilitator for empowerment' on the other. Popkewitz (1991, pp.236-237) highlights problems with the notion of 'empowerment', some of which were discussed above (6.2.4). These problems include the assumption that a researcher can empower others to redefine their experiences through the development of 'enlightening' knowledge, linked to an indirectly utilitarian epistemology and realist ontology which critical theorists usually claim to reject (see Lather 1991). In addition, and again in contrast to critical theorists' claims, the researcher as 'change agent' might not be all that different from the researcher as 'expert' (6.2.5.4). Despite the differences in discourse and strategy this orientation therefore shares some of the modernistic ideals of the management orientation, and might for similar reasons fail to bring about the 'root' changes which its proponents aspire to.

6.2.5.2 *Assumptions of rationality*

The notion of rationality underpinned all perspectives on bringing about change described above. There were advocates of rational behaviour change (eg. L3, S3), of the rationality of communities' or practitioners' wisdom (P2) and of emancipation through rational responses to an increasing awareness of 'false consciousness'.

The narrow interpretation of rational actions is illustrated in the case study above, where MaSithole's behaviour appeared irrational to Ms Mthembu. The modern-day notion of rationality is based on a particular form of reasoning (Docherty 1992:13-14) and hence limiting in their scope.

The assumption that change can be brought about in a rational fashion also needs to be questioned in the light of the unintended outcomes which characterised most attempts at reform. Only a few participants in this study mentioned the possibility of negative unintended outcomes and then usually in response to a prompt. It was conceded for example that, in an apparently successful communal resource development programme, the entry into a cash community caused an "accentuated social differentiation" between communities (C2), an exacerbation of gender-related inequalities and "political competition" for resources (C3).

6.2.5.3 *Researchers as Outsiders with regards to reified groups of 'Others'*

In all three models of change described above, researchers were viewed as outsiders to groups of 'others'. These others included the target groups in Model I, the practitioners in Model II and even the 'disadvantaged' teachers or 'marginalised' communities referred to in Model III. Researchers claimed such communities as equal participants in democratic research and development processes, but the special position which researchers' expertise in research methodology, for example, afforded them, could not be overlooked. It was indeed acknowledged by participants, for example by A1 and C2.

One of the problems with this orientation (see also 5.5, 5.6 and 6.2.5.4) is that the groups of 'others' for or on whom research is being done, become reified. They come to be seen as what Popkewitz (1991) referred to as 'global' groups. Examples in the southern African context would be whites and blacks, urban and rural. The homogenisation and reification of these groups was particularly evident in Namibia and South Africa (see 5.5). By this I mean that rural black people, eg., were seen as a 'group' with internal similarities which defined them as such and with inherent differences which distinguished them 'naturally' from other 'groups' (a view which was reflected in the interview with S3, referred to in 4.4.2).

Popkewitz (1991:234) argues that societies are not made up of homogenous and clearly distinct groups, but of "multiple groups of people who are historically defined and who do not have the same internal agendas or liberation commitments". This explains the often-expressed difficulty of environmental educators who want to work with 'communities' to identify the 'representatives' of or spokesperson for such communities. In the southern African context a case could perhaps be made

for large groupings which are indeed homogenous in important ways, related to ways in which people had been classified and treated on the basis of their race. The current strong support for one political party, in both Namibia and South Africa, provide some support for such a suggestion. However, the practice of defining 'disempowered' or 'underdeveloped' groups as "The Community", "Women" or "Teachers" is problematic.

Popkewitz (1991) suggests that this discourse can be seen as a strategy on the part of researchers working as critical change agents. To tie oneself "to something which has no empirical specificity [such as 'the community'] is a strategy to gain social space for the critical academic" (p.234). That this is a very appropriate strategy in the current context of political change in southern Africa is clear (see 6.1.4).

Based on my own experiences I am convinced that 'progressive' researchers' desire to work for the 'disadvantaged' is often based on deep concerns to serve society, particularly those members who are worse off than themselves. The *problematique* of this situation needs to be recognised, however. The tensions between advocacy and academic roles have already been mentioned briefly (6.2.5.1). One such tension lies in the educational orientation of many participatory and emancipatory research projects. Popkewitz (1991:235) points out that pedagogy is "a form of social regulation that imposes distinctions, visions, and practices" and that the "skepticism" of scholarship is thus removed in the "populist" version of research: "The populist collapse of science into a concern for programs for 'others' loses the critical edge of science" (p. 237).

There are other tensions: In strategies such as participatory action research a researcher becomes, in the words of Bourdieu (1989:109), some "fellow traveller" to others' interests in

a situation which leads [intellectuals] to feel solidarity with any and all the dominated, despite the fact that, being in possession of one of the major means of domination, cultural capital, they partake of the dominant order (Popkewitz 1991:242).

Furthermore, the boundaries for researchers between doing what appears to be moral and presenting oneself as the holder of morality, are very thin, as is the line between helping others and using that morality to carve one's own niche (see below). Hall (1981) noted that participatory action researchers sometimes appropriate the funds received on behalf of the disadvantaged they claim to work for, for themselves. The occurrence of this issue in the South African context was raised by A2.

6.2.5.4 Researchers as experts

Following on the above, Popkewitz (1991:232) argues that the anti-intellectualism or anti-elitism of 'populist' movements has been picked up by critical scientists, who reformulated the distrust of certain types of expertise into a view of the intellectual as 'agent' for helping disempowered groups, such as teachers or other communities. It also posits knowledge as something functional, promising 'empowerment' and offering a "practical, seemingly non-expert knowledge about the reconstruction of teaching" (p.232).

In his view, this "positioning of the popularist, in fact, supports the status quo of the intellectual" (Popkewitz 1991:232). "The offer of better ways [more participatory, democratic] to produce progress reestablishes the legitimacy of the particular intellectual as an authority in moral matters" (p.232). Researchers come to "exercise a collective critical consciousness for the oppressed", "to alleviate oppression through moving toward some new and better universal good". There are two key points: (1) this central authority of the researcher is usually hidden in the rhetoric of neutral facilitation or participatory empowerment and (2) it means that even in those models of change in overt opposition to the authoritarian 'management' model of change, the expert researcher plays a central role.

6.2.5:5 *Recurring themes within different orientations to change*

The above issues - researchers as influential outsiders and the reification of others in attempts at rational change - illustrate the recurrence of modernist themes in the change models described above. In the southern African situation at least it would appear that discourses which gain popularity in response to perceived inadequacies in established positions do not replace each other, but to a large extent only provide different expressions for values, ideas and strategies which actually retain core characteristics.

O'Donoghue (pers. comm. 1994) supports the observation of the re-emergence of notions in different discourses and elaborates as follows on

... the idea that within a social discourse the 'symbolic capital'⁵ of the passed tends to be shed in some cases but is more-often-than-not reshaped within a complex web of ideas. What this provides is a cautionary orientation which illuminates how many of the past orientations carry the baggage of the others but in differing orientations and within contesting political sociologies. ... [These orientations] are alive and well in South Africa and keen to change their spots as they locate within the shifting political economies of the region.

This observation challenges the notion of different 'paradigms' (empirical-analytical, interpretivist, critical) entirely replacing one another (see 5.3 and 6.3.2). It also makes it increasingly clear that attempts at reform fit very well into processes of social regulation. I argue below that despite changes in discourse, orientations tend to stay the same in important ways, thus limiting their potential to engage significant change; I relate this to their modernist origins.

In the following few pages it would be important to mind that it is these *modernistic* assumptions and the ways in which we interpret and apply them which are challenged below. To assume (as Kastenholz & Erdmann 1994 do) that it is *modernity* being blamed for 'causing' the environmental crisis or our failure to respond successfully to it, is to misunderstand the critique. As in Beck's (1992) work on 'reflexive modernisation', my thesis is that our interpretations of the ideals of

⁵*Symbolic or cultural capital* is a concept developed by Bourdieu (Jenkins 1992) to indicate the culturally-linked, overt and implicit knowledge and orientations with which a person enters and engages in a situation.

modernity and our particular attempts at accomplishing them, underpin and perpetuate socio-ecological problems.

6.2.6 Change as a Modernist Phenomenon

Strong relationships between socio-educational change and research have been postulated by many participants, albeit on the basis of different models of change and positions on research. This fits in with what has been described as a phenomenon of modernity, the linking of social science with progress and the central role therein of the researcher (see 6.4.10.2). However, the actual contribution of research in educational change has also been questioned. Such questions have been raised by participants in this study, but also internationally (see 6.4.4). Robinson (1992), Shymansky and Kyle (1993) and many participants argued that research needs to be done differently in order to bring about change. Popkewitz (1991) argues that we need to examine the assumption that research is to bring about change.

Postmodern perspectives challenge our understanding of what change is and how it comes about. Doll argues that the "modern view towards change" is largely conservative, in that it is committed to change within certain well-defined parameters, but "fearful of it lest change break those parameters" (1989:249). "[C]hange which is associated with chaos, complexity, confusion and uncertainty", he adds, "is not a part of modernist thinking". In the 20th century most of us tend to espouse a Newtonian perspective, and "[i]n Newton's ideal universe, stability, not change, was the desired goal" (Doll 1989:249).

The modernist view is that change (like knowledge production, see 5.6.2.4) is incremental, cumulative (and hence tied to previous structures) and to be controlled or 'managed' for rationally reasoned progress. This is why, Popkewitz (1984) argued, theories of change are more concerned with explaining stability and harmony. In contrast is the sudden and unpredictable change described by quantum physics and postmodernism.

In *Order out of Chaos* Prigogine and Stengers (1984:214) write: "Where classical science used to emphasize permanence, we now find change and evolution ..." and Doll (1989:243) comments:

With this quote we see our vision of the universe turning from the simple, stable, eternal one of Newtonian modernism to the complex, chaotic, finite one of post-modernism.

Lucas (1985:165 in Doll 1989:243) noted that it has taken time for the philosophical implications of quantum physics and Einstein's relativity theory to begin to "reverberate through other knowledge domains". Modern science⁶ has been unfolding a "new image of reality", calling for "a radical

⁶ Here implying latter-day science, i.e. the scientific models and interpretations which developed after the influence of quantum physics and chaos theory on Newtonian science. See Capra (1982) for an account of this influence and Beck (1992) for a description of the related notion of 'reflexive science'.

revision of how the world and human consciousness itself is to be comprehended".

Education is one of the knowledge domains in which much of the conventional and academic thinking in the field is still based on a Newtonian perspective. Thus harmony is the ideal goal and "disturbance is not viewed as a key, necessary, or desirable ingredient". The "postulate of simplicity" is still a basic principle in educational theory (Doll 1989:243). Yet reputable physicists and philosophers argue that the emerging science of complexity describes reality more aptly than does simplicity. Modern science has ushered in a move away from the notion that "harmony, order, uniformity" is the norm, towards an acceptance of complexity as prevailing state of affairs. "Complexity assumes reality to be web-like with multiple interacting forces" and observers as in- rather than outside the web (Doll 1989:247).

Doll refers to a crucial distinction between "transformatory" and "accumulative" change. The former represents a change in view, perspective and methodology, involving "*internal reorganization*" through *interaction*. The latter implies *external control* of direction (as in the management of social transformation, targeted messages or empowerment through capacity building; see 5.6). Transformatory change recognises, encompasses and allows for indecision and indeterminacy. The emphasis shifts to

... a process of development rather than a body of knowledge ..., ends become beacons guiding this process, and the course [of learning] itself transforms the indeterminate into the determinate (Doll 1989:250, my emphases).

6.2.7 The Contribution of Reflexivity

An emerging perspective in this study, which I labelled 'reflexive', did indeed reveal another approach to educational change (see 4.3.2.4, 4.4.5). In this approach there was little reference to the direction of change. Process rather than product was emphasised, as well as "organic" rather than "institutionalised" projects. It was noted that the "research style" was more important than the specific topics to be addressed. One important style was a theory-driven approach which looked for a "theoretical axe to grind" (A2), for critical reflection on the theoretical underpinnings of our conventions and practices was deemed crucial. Furthermore, the formal research enterprise was not seen as a tool to bring about change. Indeed, research was not strongly separated from environmental education at all. Environmental education projects had to be reflective or 're-search'-oriented by nature, so informing "better thinking and ways of doing" (A2, also A3).

A critically reflexive orientation to research may provide an opening for significant change as opposed to mere motion, if its goal is to demystify the patterns of knowledge and social conditions that shape our practical activities (Popkewitz 1984:45, McKinley *et al.* 1992). The potential of reflexivity - of 're-making the commonsense' (Popkewitz 1991) - lies in the orientation towards critically reviewing and revealing collective patterns that organise social life. Such processes might allow us to "poke holes in the causality that organizes our behaviours" (Popkewitz 1991:16). Critique, Popkewitz

notes, "can open new systems of possibility for our collective and individual lives" (1991:16). Making systems of control such as regulation, normalisation, exclusion, discrimination and exploitation visible does not necessarily bring enlightenment and rational change, as critical theorists argue, but it does render such systems potentially resistible and open to change. Points of weakness in the 'regimes of truth' can identify potential sites of transformation (Popkewitz 1991:44).

This emerging orientation to engaging with change is more tentative than 'the models' described above. Change is seen to be embodied in processes of productive action around a shared agenda (A2, S6), the co-construction of meaning (A3) and socially critical and historical reflection (A2). There are no assumptions of rationality (A3), no separation between the action and the research (A2) and a recognition of the likelihood of unintended outcomes (A3). Reflection on practice (C5) and reflexive action (A2, A3) were important features of environmental education as responsive process of change.

These few participants were purposeful when they spoke about change in terms of aiming for "sustainable living" (A2) and the development of both "tools for change" (A2) and "the capacity for change" (A2). However, they neither specified universal goals or definite end-points, nor postulated rational behaviour change in response to planned interventions or developments. The focus was on collaboratively developing capabilities (tools, resources, action competencies) to deal with and encourage change, in local contexts. The depiction of environmental education from a 'reflexive' perspective (Fig. 4.2) shows the importance given to (social and private) reflection, dialogue and interaction (see also 4.4.5) as a crucible⁷ for transformation, as opposed to the direction of Others from an 'outside' to effect change. This is complemented by Doll's (1989) description of transformative change (see 6.2.6).

An interest in sites of change is part of this exploration of the potential of different orientations to research, environmental education and change, within the study of research priorities in a context of change. Whereas the above explored the potential of an emergent but coherent reflexive perspective, as well as three orientations which could be associated with internationally described 'models' of change, the following section focuses on examples of inconsistent and ambiguous discourse as possible sites of change.

6.3 INCONSISTENCIES IN THE DISCOURSE: SITES OF CHANGE?

6.3.1 Introduction

In Chapter 4, where I described four 'clusters' of views on research and environmental education related to four sets of views on change, I noted that although many participants clearly espoused one or the other set of views in favour of others, these clusters could not be seen as discrete categories

⁷ Drawing on the Wordperfect 5.1 Thesaurus I use the notion of a *crucible* to indicate both a container or vessel and a trial or test.

or 'paradigms'. One reason for that assertion was the occurrence of inconsistencies and ambiguities⁸ in interviewee discourse, or between statements made in interviews and actual observed practice (see 4.5). These inconsistencies were a substantive feature of the data (see 3.7.2.2) and I now return to them in a further exploration. My aim is not to resolve ambiguities, but to reveal them and to explore relationships with change.

If interviewees espoused a 'critical' orientation to environmental education, research and change, yet their activities seemed to reflect a 'behaviourist' orientation, did that indicate that they were 'progressing' from a behaviourist to a critical orientation? This was the explanation given by L4 and L5 when they described their professional development in environmental education. Or did it indicate that interviewees were espousing positions perceived as more progressive while still entrenched in 'older' ones now deemed inappropriate? In Chapters 3 and 4 (3.7.2.2, 4.3.2.3, 4.4.3.5) I surmised that such inconsistencies indicated that participants were 'straddling' different research paradigms. As I will illustrate below, my growing understanding was that these inconsistencies challenged the notion of setting up clusters which could be interpreted as 'paradigms', to begin with.

In this discussion I make frequent use of the data involving participants' references to and involvements in change and the possible influences shaping shifts in discourse (recounted in 6.1.4). The data had indicated that a range of influences - local and international donors, government policy, institutional contexts and perceived changes in others' discourse - were probably involved in shaping discursive shifts. The data furthermore suggested that this shaping took place in non-linear ways. For example, while funders like S8 seemed to be changing their discourse in response to political changes, would-be users of funding were also adjusting their project proposals to the language which seemed to reflect current perceptions of relevance in order to fit in with funders' changing discourse.

I came to see the limitations of looking for simple links between inconsistencies and change, for I started to recognise what Popkewitz (1991) described as multiple social layers interacting in a complex manner in processes which simultaneously or alternately reflected, stimulated and shaped change. In studying social change it thus seems more appropriate to focus, not on identifying linear causal relationships, but on understanding

how tradition and transformations interact through processes of social production and reproduction ... a confrontation between rupture from the past and what seems stable and 'natural' in our social life (Popkewitz 1991:1).

Interactions between tradition and transformations take place at "the multiple layers of social affairs - from the organization of institutions [to the] perceptions and experiences by which individuals act" (Popkewitz 1991:2). Some of these layers are explored below in section 6.4.9, on research as an institution, within institutions.

⁸ As noted before (Section 3.7.2.2) I use the terms *inconsistencies* and *ambiguities* to indicate viewpoints or positions declared or enacted by a person, that seem to contradict one another; in the case of ambiguities more notably so than in the case of inconsistencies.

6.3.2 Examples of Inconsistencies and Possible Explanations

6.3.2.1 *Illustrating and interpreting inconsistencies*

Data analysis (Codings 1 and 2, Fig. 3.1) showed inconsistencies in the data emerging from interviews and observations. Some of these results have been discussed in reference to a lack of clarity on the concept of environmental education and on concepts in research methodology (5.2, 5.3).

Contradictions did not occur in all interviews. They were more prevalent in 10 interviews, in some of which they were so marked that they seemed like the single most important feature of the interview. It is this frequency of occurrence in some interviews, as well as a wish to not misrepresent the results as particularly smooth and consistent (3.7.2.2) that prompted me to investigate this issue further. This was despite my reluctance to focus too strongly on what might be some interviewees' limited understandings of issues or concepts.

A degree of inconsistency between speakers' practice and what they propose verbally is often easily explained on circumstantial grounds. Many situations in our life-worlds are interspersed with ambiguities. Apparent contradictions could reflect a situation which is indeed ambiguous, as in L4's claim that although 'the scientific approach' to research could be implicated in some educational problems, it was also the basis of his success as researcher.

There are however also several other explanations for the discrepancies observed in this study. These include:

1. Some participants' failure to consider their opinions clearly, or to clarify or understand the underpinnings of those opinions.
2. A struggle to reconcile conventional concepts ('tradition') with ideals which have come to be associated with environmental education ('transformation').
3. The use of current rhetoric only for the sake of its popularity or 'political correctness' (L4)
4. The use of current rhetoric as strategy, to describe arrangements which were in the interviewee's personal/professional interest.

Examples from interviews which might illustrate such instances are listed below. I include an indication of the kind of explanation I thought would be most fitting, given my understanding of the context within which statements were made and discourse analysis using techniques described by Fairclough (1992). Note that most of the inconsistencies within interviews appeared, according to my interpretation, to be related to a lack of conceptual clarity (explanation 1). This issue is discussed in 5.2 and 5.3, although the surmised lack of clarity was probably not entirely distinct from other explanations for inconsistent discourse.

- * As discussed in 5.6, M6 believed there was a need to clearly delineate the field of environmental education. (Such a delineation would expedite the allocation of funding to projects.). He also claimed, on the other hand, to be comfortable with the (to my mind contradictory) idea that environmental education "meant different things to different people" (Possible example of explanations 1,2 and 4).
- * Related to the above contradiction was S2's belief that environmental education '*had to be*' a broad, 'holistic', non-reductionist concept ("education for life"), counteracted by his statement that such a broad concept was *not useful* in our society (1,2; emphases added).
- * Environmental education was described as non-authoritarian, 'simply good [Western liberal] education' by L4, who inconsistently claimed that Western education was 'authoritarian' (1,2).
- * L3 announced that his approach to environmental education was "unashamedly" behaviouristic, in that he wanted to change others' behaviour, but he also claimed that environmental educators cannot assume that they "know best" (1,4).
- * P3 was aware of, but unconcerned about, the contradiction in his statements that in environmental education "process" was on the one hand more important than "product" and on the other hand, it should apply the "science of advertising principles" (2, 3, 4).
- * Related to the above was the contradiction in P3's statements that "You can't dictate anything to communities ... it has to be open-ended" and "With a big enough bombardment" one can and should "actually make people do things" (2).
- * S8 claimed that pupils should be 'exposed' ("*blootgestel*") to the 'process' of environmental education (1,2; also see 5.2).
- * L4 noted that environmental education was 'nothing new', but also described it as a 'stimulus for renewal' (1,2,4; also see 5.2).
- * P3's description of environmental education as "non-paternalistic" seemed inconsistent with his claim that his organisation spent a lot on "actually upgrading *our* [a particular ethnic group of] people" (emphasis added - 2,3,4).
- * Along similar lines, P3 reported that a certain ethnic group believed that "authority is king"; they did not recognise their "civil rights" to affect change; building their self-image and inspiring them to see that they can actually challenge the system was part of environmental education, and hence he and his colleagues in environmental education sometimes felt like "activists". However, he also reported that they did not

try "to meddle" with people's "traditional culture" (2, 3).

- * S5 believed that environmental education should teach sustainable living and appropriate development, but regarded low-cost teaching resources as of inferior value because of their appearance (1,4).
- * One fairly prominent author in the local environmental education community stated that the term "environment" implied both social and ecological components, but because this is not widely realised, the argument went, the label of environmental education should be changed to "socio-environmental" education (1,2).
- * Another interviewee, also explaining that the term environment was generally interpreted too narrowly, as excluding social and economic dimensions which it actually included, argued that we therefore needed the term 'development education'. However, he indicated that 'development' in its turn included the capacity to solve environmental problems. There was a recognition that both concepts, development and environment, broadly included bio-physical, social and economic dimensions, yet they were treated as discrete professional fields. The interview discourse was peppered with several other ambiguities in examples of how they are to be enacted (2,4).
- * M6 stated that the objectives outlined at the Tbilisi Conference (UNESCO 1978) - awareness, knowledge, values, attitudes, skills - should guide environmental education, but then checked himself to say that he did "not actually go along with them", for values and attitudes were Western concepts inapplicable in Africa, where the issue was survival (1,2,3).
- * In response to an interview question another author conceded that the concepts values, attitudes and knowledge "run together" [i.e. were so closely related that it was hard to separate them], but that he also found it useful to distinguish between them in an education programme. Similarly, he based his work on certain cognitive developmental stages while acknowledging that they were not an accurate reflection of reality (1,4).
- * A6 reported the need for attitude surveys, stating that there were many existing attitude surveys which showed that "black communities do not have the same perceptions of the environment as many white communities". Yet he also noted that "every thinking adult in this country" (emphasis added) probably wanted clean air, water and sanitation; when I questioned him about this possible contradiction he noted that perhaps attitudes did not differ that much after all and that they had been "mis-researched" (1, 2).
- * In the 'community development' context A6 expressed the opinion that those

'communities' with a lack of experience did not know what their needs were and hence needed to be shown a vision of "how things could change"; in the same interview, he also stated that people probably knew how to change and only lacked the motivation (3,4).

- * P3 reported a trend towards practices more appropriate for the African context (see 5.5.2.3, also 6.1.4.2) included a consideration of "traditional" teaching styles. At the same time, he lamented the way in which particularly black teachers taught in schools throughout the region, described in the interview as "authoritarian", "text-book-bound" and promoting "rote learning". The notion of the existence of such a traditional teaching style, at least in modern southern Africa, might thus be questioned (3).
- * L5 noted that "reductionistic" research was inappropriate for environmental education, *inter alia* because it was "inflexible", for it required rigour (implying that post-positivist research did not require rigour; 1, 2; see also 5.3).
- * A6 reported being influenced at a workshop he attended, by references to "democracy" and joint agenda-setting which would involve "the community" in research. He seemed to support this view, claiming that his earlier research "should have been more interactive". He also stated, however, that "at my age I have an agenda of my own".

In summary, these inconsistencies seemed to reflect a poor understanding of or poor ability to enact new approaches, combined with a desire to engage (with) new discourses yet maintain own 'agendas'. I now return to the multiple possible influences on these shifts in discourse which had been introduced above (see 6.1.4) for a more extensive discussion in an exploration of patterns of change.

6.3.2.2 *Three key arenas of influence*

The first influence to recall is the 'institutionalised' *socio-political change* associated with democratisation, noted in Chapter 2 (2.3) and in 6.1.4 above. Several interviewees (K1, L2, L3, L4, S1, S3, S8) reported that state-linked organisations in South Africa experienced internal or external pressure to undergo or show evidence of change commensurate with political developments and their perceived implications. Taking on the discourse of new (more democratic, less authoritarian) approaches to education, development and research emerged as a common strategy to initiate change or to deal with pressure to change. Examples were the discourse of child-centred, skill-centred, experiential learning to replace authoritarian transmission teaching, or teacher-centred curriculum development (see Table 4.2. This study also revealed that actual practice often lagged behind (or never reflected) the rhetoric.

A colleague from what was at the time an 'independent homeland' (see 2.3) provided an example. She was involved in the development of a new curriculum to be proposed to South Africa's new

'government of national unity'. This curriculum was being developed in conjunction with the Department of Education and Training (DET), notorious for its policy of Bantu Education and conservative ideology. In a workshop which I attended with other academics, teachers and extension workers the curriculum developer expressed her anger arising from her perception that DET educators were trying to "sell" them a curriculum very similar to the existing one, merely "wrapped" in the package of politically-appropriate terminology. Other workshop participants then confirmed that the use of rhetoric to hide a lack of change was indeed a fairly widespread phenomenon in formal education circles. The "structural positions" (Popkewitz 1991:227) of the DET curriculum developers, their ideological and professional contexts and dispositions would be involved in shaping strategies to disguise the old under a banner of the new.

Popkewitz (1981:189) observed that 'slogans' obscure the differences between official aims and goals, and their actual implementation in institutions. This idea is useful when reflecting on differences between interview discourse and practice, particularly in contexts where more conservative institutions experienced socio-political pressure to show signs of change.

In several cases interviewees reported that their institutional contexts prevented them from enacting the changes they understood to be appropriate. Notable was the role of bureaucratic organisations (K1, 6.1.4), foreign development aid organisations (M3, C5) and the scientific and funding communities which reportedly enforced certain research styles, particularly the so-called 'scientific' or 'positivistic' approach (M6, L3, L5; see 5.7.3.1).

The above reference to K1 might illustrate that individuals working in government and other 'bureaucratic' institutions are not 'by nature' more conservative than others. K1 notes, however, that it comes to be in the interest of individuals to maintain the institutions⁹ of the organisation within which they work, a point also relevant in the discussion on research as institution (6.4).

Of further relevance here is the research of Foucault which Popkewitz (1991:5) draws on to argue that "the structural relations that are part of the organization of social life" also become part of "the conceptions of self so that individuals engage in their own self-regulation". Thus institutional structures come to shape possibilities for individuals not only through actual laws and regulations, but also by structuring conceptual "rules of the possible" (p.219). This encompasses what Popkewitz called the "potency of an institutional context not only for channelling thought and action, but also for reinforcing and legitimating social values" (1981:189).

For this reason reflexivity, in the form of critical reflection on one's own socio-institutional relations, becomes important. (See 5.8 on this point, and 2.2, 4.2.2, 4.3.2.4 and 4.4.5.2 for general descriptions of the notion of reflexivity.)

A second group with the potential to influence shifts in discourse in the environmental education

⁹ *Institution*: establishment, foundation, organisation ... convention, custom, habit, ritual (WordPerfect 5.1 Thesaurus).

community, in all the countries surveyed, were financial donors, particularly *corporate and international funders*. The Namibian context provided both positive and negative examples: Some members of the environmental education community were working productively in alliance with the government and Swedish donors on implementing educational reforms developed in collaboration with these parties (see Janse van Rensburg 1994). Other interviewees expressed either resentment or caution about American funders in particular setting directions and agendas for research in Namibia. In Zimbabwe C2 noted that all funders could not be treated as similar, but that they did tend to have a 'neo-colonial' influence in that country. The case study of the Namibian language policy being based on the recommendations of international consultants, and Phillipson's (1992)-interpretation of this development as an example of 'linguistic imperialism' has been referred to above (6.1.4).

In the South African environmental education context S5 was an example of a funder attempting to influence practice. He described a shift in funding policy, away from 'elitist', ecology-oriented projects and towards 'community development'- oriented projects as a situation in which 'the music has changed', presumably in reference to his company's interpretation of socio-political developments. He was however frustrated by environmental educators' failure to change the focus of their work accordingly. Instead, he argued, they were 'simply changing the steps of their dance' through 'semantics', to make their 'educational product' ('dance') more acceptable. This interview not only described another observation of rhetorical change without substance, but also illustrated an instance of a funding establishment's wish to 'call the tune' through its own discourse. This observation points to the need for critical consideration by funding agencies of the underpinnings of the directions they attempt to set.

A third potential shaping influence on the discourse of participants to explore here involved fellow colleagues in *the environmental education community*, particularly members of EEASA who were described by P1 as "leaders" in the South Africa context. These "theorists" (P2) or "academics" (P1) were accused of engaging in constantly changing rhetoric which either intimidated or infuriated their colleagues (or left them cold). As "powerful personalities in environmental education" they "convinced" others that the approaches they espoused were the only ones worthy of following, claimed P1.

A4 explained:

Suddenly there [are] these new buzz words ... every year [at environmental education gatherings] there is a new set of buzz words ... and the stuff that you have been doing, is sort of marginalised, and you think, Hell, maybe I shouldn't be doing what I'm doing, maybe I should be doing 'development education' ... [It is] really difficult to stay with things ...

P2 mimicked the perceived rhetoric in an agitated fashion:

'You can't say that! That word - no, it's uncalled for!' ... [An excursion becomes a visit], others will say 'No, it's not a visit, it's sort of a trip', some will say 'It's an exposure' or 'It's an experience'. At the end of the day you're talking about the same thing. ... A big play with words!

Although most of the interviewees who referred to the perceived shifting rhetoric claimed that their practice was not influenced by it, it did seem to sensitise the local environmental education community in other ways. Several research participants experienced the sense of 'conceptual pace-setting' by a small group as threatening. A4 described it as "disempowering"; P1 professed insecurity; P3 and A4 thought it inhibited action. These participants extended the perceived emphasis on rhetoric or theory to a perceived rift between "theorists" and "practitioners" in environmental education; others (S3, L2) related perceived rifts in the South African environmental education community to regional ideological and philosophical rifts.

Among those who rejected trends which they attributed to these 'powerful personalities' was L3, who explained why he based his research on 'the scientific method' 'even though' 'X' would question what he called his "scientific bias". L2 also spurned what he perceived as this group's promotion of "the qualitative approach" to research, dismissing them as uninformed and out of step with a perceived commitment to positivism in the international educational arena. Unlike several other interviewees (see 5.3) he appeared unambiguous in these views, but he was also sufficiently sensitised by the perceived trends to quite defensively place me, upon introduction, in the 'camp' of this group, describing the differences in views as a "divide" in the environmental education community.

Other interviewees (L4, L5, M6, A6) responded to the perceived trends in the local community by adopting the ideas embodied, yet not sufficiently grasping them to express them clearly. For example, A6 claimed to favour the trend to involve teachers in resource development, but felt he could not explain the rationale for this trend as well as a particular person among the 'pace-setters' could. "I do not have the right words that Z has", he said.

6.3.2.3 *Comment*

Thus alerted to the fact that (perceived) trends in the local environmental education community might be a potentially powerful influence in shaping change, I postulated that the relatively small number of environmental educators in southern Africa and the somewhat 'insular'¹⁰ aspect of this community created a situation in which members were often very sensitive to the discourse (and approval) of other, particularly productive and/or prominent workers in the field¹¹.

The notion of the local environmental education community being 'insular' was however strongly

¹⁰ I based this idea partly on A1 and S5 referring to the South African environmental education community as "insular" and partly on an early impression that many members of this community worked in physically or (perhaps) intellectually remote contexts, such as 'wilderness' areas or schools.

¹¹ This notion was supported by observations of several interviewees' sensitivities about their own views, as expressed directly by them or revealed in nervousness, the compilation of notes for the interview, the limiting of discussions to an organisational rather than a personal perspective and most tellingly, some interviewees' unsolicited and sometimes quite vigorous juxtapositioning and defense of their views against the (perceived) views of others, including myself.

questioned by K2, who pointed out that many of its informal members also worked in contexts such as university departments and urban centres. I learned that the international environmental education community, too, relied quite strongly on a handful of academics to set directions (see eg. Robottom, 1990, for a critique of this situation) and that this was not a particularly unique feature of the local situation.

Yet I remained concerned about the notion of insularity, which I tried to link to a description of environmental education in South Africa as "a static phenomenon" (A1) unable to significantly influence formal education in a time of dramatic socio-political change. A recent text by O'Donoghue (1994b:3) provided light by proposing that "environmental education has tended to 'wallow in the wake'-of key trends in education and social theory". He explains:

The current challenge appears to be clarifying trends in social theory so that we [environmental educators] might stop bobbing in the wake of mainstream education discourse feeding off a discarded debris of functionalist theories of awareness/behaviour change or a little different ... inversion [critical theory] that idealises ... self-liberation.

The 'insularity' which I perceived in the environmental education community might thus lie in a theoretical narrowness or lack of reflexivity. By this I mean a failure not only to engage with current thinking in a broader arena of social and educational theory, but to critically reflect on the theoretical assumptions within current practice, their origins and implications.

An absence of reflexivity can explain the setting up of a divide or gap between 'practitioners' and 'theorists' (5.4), between empirical-analytical or so-called 'scientific' and other researchers (5.3) and between researchers and practitioners (see discussion based on Robinson 1992 in 5.4). It also explains many of the instances of resistance to change reflected in the inconsistent interview discourse, including an unwillingness to think through positions.

Narrowly-conceived and unquestioned orientations to environmental education can be linked to various influences and contexts. Perhaps most fundamental would be the suggestion that they relate back to a common base in modernist views on education, change, knowledge and science (6.2.6). These, it had been argued above, have limited potential for change, given the significant relationship between modernism and the environmental crisis (Beck 1992).

The conclusion of this discussion is thus that inconsistencies in interview discourse reflected multiple dimensions of change (causes, responses to, reflections of). They were perhaps most useful in this study in revealing ways in which 'significant' change or transformation fail to come about. Were they not at all, then, examples of ways in which change can come about?

This was a postulation early in the study, when I noted that contradictory statements from participants reflected positions in more than one of the 'clusters' constructed in Chapter 4. I argued (Janse van Rensburg 1993) that environmental educators might take on newer discourses by changing the way they talked about concepts, as a precursor for changing their practices. Popkewitz (1991:185) thought that, in some instances, "discourse patterns work to structure thought rather than thought structuring

discourse".

I did not however find evidence in the data that this might be the case. More long-term studies of discursive and other changes might be more successful in demonstrating instances of discourse-driven change (O'Donoghue 1995).

My analysis of inconsistencies with regard to participants' 'orientations' to environmental education and research did however illuminate particularly clearly the absence of distinct boundaries between different orientations or positions (see 4.4.1, 4.5, 5.3, 6.2.5.5). In the context of this study this observation deconstructs three widely held notions, namely that

- * "behaviourist", "constructivist" and "critical" positions necessarily represent discrete categories,
- * one-directional movement between positions presents "progress", and
- * contestation characterises the boundaries between these positions.

Among many participants in this study the 'boundaries' between positions were blurred; they were in fact crossed several times during single interviews¹². The blurring of boundaries occurred, for example, in references to 'empowerment' and the engineering of 'attitude change' in one 'model' of environmental education (5.2), and in several other examples described in this study.

The notion of 'progress' between these positions rests upon the ideas that (1) they are distinct and fundamentally different positions ('paradigms') and that (2) the critical position is better than the constructivist which is in turn better than the positivist. (I draw *inter alia* on discussions with L4 and L5 to make this assertion). These ideas enjoy international support (see Huckle 1993, Robottom & Hart 1993), but are also increasingly being challenged: Foucault's description of a shift 'from paradigm to discourse' explains the multiple-layered, interactive and contradictory changes evident in the social world of our time and region (and this study) more satisfyingly than the Kuhnian grand narrative of scientific revolution (see Lather 1991 and 2.4) does.

The results of this study could also not substantiate the related notion of contestation between different positions (or 'paradigm debates'). At first, the strongly voiced opposing arguments for positivist and post-positivist approaches to research (from L2 and L3 on the one hand and L4, L5 and others on the other hand) appeared to confirm that the internationally described 'paradigm debate' was also waged in the southern Africa environmental education community. However, a discourse analysis of the inconsistencies referred to in 5.3, made me question this assumption. The staunchest advocate of "quantitative" research in this study noted the importance of intuition in his work; one of the most vocal opponents of positivism designed research projects to maximise 'objectivity' and minimise bias.

¹² This occurred despite the tendency of research interviews to result in 'normalised' or "official" accounts (Bourdieu, as discussed in Jenkins 1992:53).

In addition I observed, on the basis of an analysis of apparently distinct orientations to change, environmental education and research (4.4.2-4), that signs of contestation between positions might be more strategic than substantial, involving 'posturing' rather than positioning (see 4.5). Critical theories carry elements of positivism (6.2.4-5); 'interpretative' constructivists seek to engage the discourse of empowerment (Graham-Jolly 1994).

6.4 INSTITUTIONAL RESEARCH AND THE RESEARCH INSTITUTION

6.4.1 Introduction

The strategies of educational research are also the work of people who have structural positions and are part of structural relations (Popkewitz 1991:227).

... the potency of an institutional context not only for channelling thought and action, but also for reinforcing and legitimating social values (Popkewitz 1981:189).

In this final part of the chapter the focus is on research *per se*, in the form of the formalised (5.7.1.1) or 'academic-style' research which most participants called to mind when they discussed the nature of research and research priorities (5.7). I start by recalling the ideal expressed by many participants, that research should be meaningful (especially to practitioners) and linked to change, the widely held perception that it often fails in these respects, and suggestions for different research styles including a more reflexive approach to research, environmental education and change. I then examine participants' proposed solutions to the problem of 'useful' research, viz. better dissemination, greater accessibility and closer cooperation between researchers and practitioners, concluding that these ideas are not particularly valuable. Drawing on examples from the study of ways in which academic institutions and funders shape research approaches (eg. 5.7.3) I move to the notion of research as an institution. The discussion takes in the social role of researchers as agents of progress and the ways in which power and knowledge production are tied in 'procedural' conceptions of science. I conclude that reifying notions of research, science and progress, similar to the 'objectification' of environmental education, constrict the potential for change within this social endeavour.

6.4.2 The Ideal, and Introducing Some Illusions

My own interest is undeniably in research which engages with what I termed 'significant' or transformative change (see 6.1.3). There were however also enough references linking research and change in this study to allow me to describe it as a shared concern among many of the environmental educators with whom I interacted during this study (6.1.2).

My first bid in assessing the potential of research activities to engage with change was to explore the control over knowledge production exercised by academic institutions and other powerful 'elites' (Janse van Rensburg 1993). If research was to be more 'useful' than it was often perceived to be

some methodological and other changes (5.7) seemed appropriate. Yet the study revealed several ways in which institutions which provided either academic guidance and accreditation or research funding, confined research styles to what they deemed as appropriate. This was reportedly at times in conflict with researchers' or others' interests (L4, L5; see also 5.7.3.1). If the research, its objectives and its design were determined by unquestioned conventions of academic institutions or the needs of international funders and consultants, the possibility of research informing and stimulating change in directions outside the interests of these powerful sectors in society may be very slim.

I continue to explore this line of reasoning below, concluding with proposals from the literature that the elitist and unquestioned nature of scientific conventions are not only in the service of 'those who vie for the power to speak', but they have also come to render modern science 'unscientific' (Beck 1992) and less able to engage with fundamental change in the educational arena (Popkewitz 1984, 1991).

However, I also extended my first exploration to include an investment of the notions of 'useful' research - research to 'inform' management, 'create' change, 'empower' participants or 'solve practical problems'. Many participants postulated strong (ideal or actual) relationships between socio-educational change and research, albeit on the basis of different models of change and views on research (6.1.2, 6.2.2-4). This fits a modernist coupling of social science with progress and the assignment of the researcher to a central role within such progress (Popkewitz 1984). I thus propose a reflexive perspective (6.2.5) on instrumental orientations to research and change (4.3.3.5) and on the reification of 'rational progress' and of the researcher as expert, all three of which featured strongly in the three models of change described above (see 6.2.5.4).

6.4.3 Research Fails to Fulfil an Assigned Role

Participants did not always take an unproblematic view of the issue of change and its bearing on research. M1, eg., noted that one needed to look critically at the ability of academic research to meet the challenges of changing socio-political situations as well as of the environmental crisis (M1). K2 cautioned that researchers are seldom in a position to bring about the change towards which their research might be directed, and that research might have aims other than change. A young teacher revealed a skepticism about research-about-research when he wondered why, with all the "many ideas and talk of solutions" (M7) so few are ever implemented.

The 'talk about problems with research' was described in 5.7.1 and 5.7.2. The most frequently mentioned problems included

- * particular styles of reporting, perceived as generally inaccessible to all but 'academics' and 'uninviting',
- * a disregard of the problems, needs and contexts of 'practitioners',
- * a disregard of the (particularly rural) 'African context',

- * irrelevant research topics,
- * poor dissemination and implementation of research findings (the proverbial 'thesis on the shelf'),
- * a failure to engage research participants in active problem-solving and empowerment,
- * a positivist orientation,
- * a non-positivist orientation.

These factors, argued research participants, rendered some research projects 'irrelevant' and unable to fulfil the social and educational functions which they assigned to research.

6.4.4 'Lack of Impact' is a Wider Concern

This section will illustrate that the perceived limited impact of educational research is a phenomenon concerning a wider arena than participants in this study. It is necessary to make this point, because not all research participants thought that this was indeed a substantive issue. K2, eg., defended academic research styles and questioned whether research was indeed to have the kinds of impacts described by other participants (a point to which I return below).

I draw on discussions on research in science education and educational research in general; with the notable exception of the work of Robottom & Hart (1993) there are few sources on meta-research in environmental education.

In the arena of science education a majority of the world's countries have experienced reforms or revisions of their science curricula since the 1960s. Shymansky & Kyle (1992:757) noted, however, that "[t]he influence of these efforts has varied. Frequently, success has been less than what was desired" and researchers' "desire to prepare citizens for the 21st century" are reported to be "tempered by the recognition that the reform efforts of the 1960s failed to result in any lasting change" (pp.753-4). The view of Shymansky & Kyle, that researchers are often frustrated at the lack of substantive impact of their efforts, was shared by several other participants in this study (eg. L4, L5, M3, C5).

The 1985 *World Yearbook of Education*, dedicated to the relationship between research, policy and practice, featured a chapter on the impact of research, in which it was conceded that there was both "support and deep scepticism regarding the quality of recent educational research activity and its utility in the development of educational policy and practice" (Mitchell 1985?, quoted by Robinson 1992:9).

In an effort to assess this track record of educational research in general Robinson (*ibid*) distinguishes between change *per se* and change 'for the better' or more precisely, change which 'resolves' educational problems and leads to 'improvements'. Her orientation is thus very similar to the 'change

as the resolution of practical problems' orientation described in 4.4.3. This is relevant below (6.4.6); the first point to note is her advice that 'change' cannot be equated with 'benefit'.

Research-led change might alter educational discourse or policy, Robinson records, but "seldom the educational practices or outcomes that have triggered the reform attempt in the first place" (1991:9). In this claim she is supported by Popkewitz (1981) and by Shymansky & Kyle (1992:759). The latter authors observe that "reforms" seldom get adopted as policy; most get implemented "in word, rather than deed". They believe that the deepest structures of schooling, embedded as they are in school practices and routines, are seldom fundamentally altered, even on those occasions when "reformers" seek such alterations as their goal. Popkewitz (1981) provides empirical evidence that 'slogans' obscure the fact that educational reforms are re-interpreted in schools to fit in with what K1 described as "the prevailing ethos".

The next three sections deconstructs some of the most popular suggestions for improving the impact of educational research.

6.4.5 The Notion that Better Dissemination will make Research more Useful

One oft cited reason why research was not helping practitioners was that research findings were not reaching them - research was either presented in an inaccessible form (L5, C4, C5) or not distributed to practitioners at all (C5, C1; see 4.4.3 and 5.7.2) Research findings were 'retained' (C1) by researchers, or bound and stored behind 'red tape' where it was hard to access (P2).

This proposed reason for the problem is an international favourite. Robinson (1992) noted that improved dissemination of research findings was regarded as the key to better research utilisation as early as the 1960's. This view was based on two assumptions, both of which she questioned. The first was that research yielded reliable generalisations to disseminate and the second, that such generalisations are applicable in practical contexts. Robinson argued that practitioners will alter their practice on the basis of research findings only when they think there is a problem to be solved, and if they judge the research as relevant and applicable. These judgements will in turn depend on practitioners' understanding of the problem, the solutions and their own roles in each. "Research which does not reflect those understandings and assumptions", she argued, "is likely to have little influence on practice *no matter how good the dissemination*" (Robinson 1992:11, my emphasis).

Furthermore, research is more likely

to be more influential if it is consistent with the key assumptions of those they seek to influence. On the other hand, most educational problems persist, precisely because current assumptions about their cause and their resolution remain unchallenged during the reform process (Robinson 1992:12).

The double bind is that recommendations that are consistent with current assumptions are likely to be acceptable, but ineffective in resolving the problem. "[F]or those who wish their research to contribute to the formulation and resolution of educational problems", she argued (*ibid*) "the dilemma

is a major barrier to their achievement of those goals".

She then goes on to suggest that the dilemma can be overcome by doing research as "an interaction between [researchers'] academic theories and [practitioners'] theories of action" ... the frequently implicit set of understandings and actions" that guide our ways of thinking and acting in problem situations. There needs to be a "dialogue" between researcher and practitioner, but this dialogue is not to be a dissemination phase following on the completed research, but a collaboration central to the research itself.

Robinson (1992) claims that a major reason why research has not had a greater impact on the understanding and resolution of educational problems is that it typically does not critically reflect on practitioners' 'theories of action' and, where necessary, collaboratively develop alternatives. Neither "correlational research" nor "structurally-oriented critical research" focuses on theories of action which lead those in educational situations to behave as they do. She argues for research which focuses on particular agents in particular problem situations in the hope that it would be more likely to be "educative rather than coercive" (p.13).

Robinson's useful paper makes a number of good points, including that "the methodology employed in much educational research is a major cause of its failure to make a greater contribution to the understanding and resolution of educational problems" (1992:23). In her view the problem is not in the intention of the researcher, nor in an inability or unwillingness to disseminate findings. The conception and design of research (methodologies) should place "problematic practices" in the context of the problem solving processes that gave rise to them. Those methodologies which do not do so are implicated in a limited understanding of why those practices occur and in the restriction of researchers' 'attempts to intervene' to "superficial behaviour or policy modifications".

There are however a number of problematic assumptions in her orientation. These include

- * an intention to explore, it seems almost exclusively, 'the practitioner's' theories-in-use, with much less reflection on those of 'the researcher';
- * a view of research as researchers' attempts to intervene in practitioners' situations;
- * the stark distinction between researcher and practitioner.

The last point is the focus of the next section.

6.4.6 The Notion of Researchers Distinct from Practitioners

Robinson (1992) replaces the prevalent suggestion that research should be better disseminated to practitioners by the suggestion that research should be designed and executed around a dialogue between researcher and practitioner, in an attempt to change practitioners' 'theories of action'. Drawing on two themes which outlined the limitations within constructed gaps between 'theory v.

practice' (discussed in 5.4) and 'expert (researcher) v. other' (5.5) I suggest a de-construction of the conception of researchers and practitioners as two different entities.

A reflexive perspective may overcome the stalemate inherent in setting up such opposing positions (see eg. Bourdieu, as discussed in Jenkins 1992). Researchers are practitioners of research; reflective practice is indistinguishable from research (see 4.4.5, 6.2.7). I am practically involved in teaching (and learning about) environmental education and, in the same process, in research; all my 'practical' activities, manifestations of my 'theories-in-use', feed into this current - practical - process of writing up my research, a process in which I am reflecting on those theories and their active manifestations.

The call of Robinson (and interviewees like P2; see 4.4.3) for dialogue between researchers and practitioners is a useful starting point, but needs to be extended to

- * attempts to reveal the 'dialogue-within' between theory and practice;
- * those who call only others researchers, to ponder the critically reflexive/ research dimension of environmental education as response to the environmental crisis;
- * those who call only others practitioners, to recognise the practical manifestations of their theories in the research process through which they are actively writing (shaping, confirming or re-conceptualising) knowledge (see Fairclough 1992).

Theories are not "up there", but inside the very actions we describe as practice.

When asked whether, as funder, he distinguished between 'research' and 'other' projects, S8 explained that he tended to distinguish between 'theoretical' and 'practical' projects. He added, however, that his distinction was a 'theoretical' one, for 'in practice' it was hard to draw a line between them!

6.4.7 The Notion of Accessible Language

A third commonly suggested solution to the problem of 'useful' research is to call for research reports which present their conclusions in a linguistic style more 'accessible' to non-academics. Chapter 5 (5.7.2) cited references to the "heavy languages" of research reports which appear "impressive" and "full of professional jargon" (C5), and to "flat" and uninviting academic papers (C4).

I proposed there that the notion of 'clear writing' is not as simple as it might first appear. For example, writings on research would (ideally) be read by many different readers. This would happen in different ways at different times. To aim to make the writing clear to each one of them is a less meaningful task than to aim for clarity in the ideas within, and flowing from, the research process. Writing styles which set up technical barriers between readers and an understanding of the research methods employed, are questionable. In addition, we need to question writing styles which seem like attempts to exclude *researchers* and their human subjectivity from the reported research process.

Post-structuralism contributed to our understanding of ways in which meaning is constructed rather than reflected by language (see Cherryholmes 1988). Elias (1982) pointed out that symbols are means of both communication and orientation. Therefore one could easily imagine that researchers might be letting readers into a 'room' from which many of the ideas have disappeared when a particular cognitive-linguistic style was 'simplified'. For example, if we speak of 'our thinking in modern times' to avoid using the 'difficult' (new?) word *modernism* altogether, we might lose the opportunity to orientate readers to the dogmatic and ideological nature of some of that thinking, captured in the notion of an '-ism'. Or, if we keep all our sentences short, those ideas which are multi-faceted and inextricably intertwined with other ideas might become segmented beyond recognition. Further, the write-up of a thesis is not simply a reflection of a research process; the writing of ideas actively shape those ideas for the writer as for the reader. Thus the writing is as much part of the process of researching as, say, the data collection, and by limiting the range of expressions the range of ideas to be expressed are also limited.

Popkewitz (1991:235) claims that

... the language used to write about a science of schooling should challenge the commonsense systems of relevance and logic found in the official conversations about schooling. The problem, then, is more than making language accessible. This requires that the rhetorical claims about making language accessible be scrutinized.

From a reflexive perspective, the research process involves re-searching for new meaning, re-making the commonsense (Popkewitz 1991:188), challenging others' and own theories (A2), revealing myths (A3), extending conceptual possibilities. New meaning is shaped by the language through which it is constructed. Readers become actively involved in that shaping by grappling with the ideas through the 'new language'. Thus engaged in a dialogue readers would be able to *assess* the ideas within the discourse, recognise, re-shape or dismiss them. Thus able to review and participate, to review and assess, readers are allowed true 'access'.

6.4.8 Do Designs on 'Useful' Research Delude Us?

Interviewees (eg. L4, M6, P2, S3, S8) suggested that research would be more useful to them and others if researchers thought to address more meaningful issues, so that, L4 appealed, research could come to benefit more than 'the researchers and their publications lists'.

An overview of titles and abstracts of research projects in environmental education in South Africa (Janse van Rensburg & Irwin 1993) suggests, however, that at least some academic researchers intend their studies to make a meaningful contribution beyond personal gain. The Rhodes database reflects projects aimed at providing information deemed to be useful to practitioners, problem-oriented studies and, particularly more recently, research by practitioners to address their own educational questions and problems. Examples of the latter, among M.Ed. (Environmental Education) projects in the Department of Education at Rhodes University, are studies by Ashwell, Akwa, Kruger, Long, Naidoo, Paxton, Pienaar, Pholo and Shongwe.

The paper by Robinson (1992) quoted above also suggests that the problem lies not so much with the intention of the researcher, than with the formulation of the research problem and the study design. The perceived need to reconceptualise research questions, styles and methods has been raised throughout the study (and referred to in 5.7 and 6.4.3 in particular). These calls to critically examine existing research approaches are not unique. In the environmental education context Robottom & Hart (1993) argued for the 'problematization' of educational research, to make it reflect the ideals of 'socially critical' environmental education more closely. Drawing on a 'political theory on research' they called for a "deliberative choice" (p.595) on methodology, informed by technical and utilitarian considerations, but also by an ideological awareness and an historical perspective on research.

Lather (1991) and Popkewitz (1991) went further by questioning all technical and utilitarian considerations, introducing the notion of reflexivity in research. I have argued above that some of the suggested changes which participants suggested would make little difference to the 'usefulness' of research; I want to suggest here that the notion of 'useful' research should also be critically considered. It thus becomes necessary to reflect on the institutional context in which research takes place, for at least two reasons: Firstly, changes in research approaches would have to be negotiated within the current conventions of research, as taught and practised by research institutions. The following pages will confirm that as a rule such institutions very strongly support the continuation, rather than the disruption, of existing research conventions. From a critical perspective (see also Janse van Rensburg 1993, Appendix 1) it appears difficult to change research conventions without revolting against academic structures and hierarchies. From a reflexive perspective on the situation it is revealing that the notion of 'useful' research as defined by participants in this study (bringing about significant changes and improvements in situations) appears to be a myth in the light of the strong conventions of not only academic institutions, but the Institution of modern science itself.

6.4.9 Research as Institution

The research projects referred to in this study were usually conducted within or from a research institution, an academic or semi-governmental research body such as the HSRC in South Africa or the Zimbabwe Economic Research Organisation (ZERO), or an international development 'aid' agency. Research is also always conducted within the 'institution' of science. Both of these (intertwined) institutional contexts contribute to modern research having become an institution, or reified¹³ (and reifying) enterprise.

If we suggest that researchers should re-vision research styles as a priority, we need to examine whether the various institutional contexts of our work allow (for) such changes. Some interviewees appeared to doubt the potential for change in such contexts. Authors like Shymansky and Kyle (1992) were particularly skeptical. In the context of science education they contended that

historically, it has been difficult for researchers to engage in substantive educational

¹³ "As a philosophical concept, reification refers to the tendency to deny the role of human constructions and history in social phenomena" (Popkewitz 1991:172).

reform. Most science education research produces knowledge in the context of a system clinging to tradition. The production of knowledge in such a context perpetuates the social, economic, and political ideologies of the dominant culture and fails to contribute to a vision of social transformation (p.756).

All three of the 'institutional dimensions' of research noted above (research organisations, science, and research *as* institution based on certain conventions) are important in exploring the potential of research activities to engage with social transformation in response to the environmental crisis.

There were several references by participants in this study to scientific/academic and funding institutions powerfully shaping the ways in which they did their research (5.7.3.1), to which my own observations (see 5.7.3.2) could be added. These included senior academics such as the HHDC (5.7.3.2), heads of science institutions (L3), 'positivist' faculties (L5), the 'intellectual imperialism' of some international consultants (C2) and funders interested in numbers rather than qualitative assessments (A5, C5). My first response (see eg. Janse van Rensburg 1993) was to study such intellectual and financial institutions as powerful structures which control the production of social knowledge, against the better judgement of some researchers.

However, this would not take into account the perhaps stronger (because more hidden) influence of institutions in shaping not merely the explicit agendas and rules of conduct in research, but also the modes of conceptualisation open to researchers. Institutions regulate not only the ways in which we do research (sometimes against our better judgement), but also how we think about research and about the ways in which to do it (i.e. our 'better judgement'). Popkewitz (1984:189) described institutional contexts as potent in "reinforcing and legitimating social values", but also in "channelling" our actions as well as our thoughts.

Both these dimensions of institutional control might be interpreted as a grand narrative of indoctrination. It is not intended as such. Although there is value in exploring ways in which academic bodies and foreign interests prevent researchers (and others) from shaping knowledge in particular ways, there is a second, at least equally important task, to explore ways in which researchers themselves continually maintain the conventions of those institutions.

Both of these expeditions will encounter the issue of power in relation to science and the production of knowledge. I suggest below that the power of research institutions (to shape and regulate knowledge produced) is exercised through (i) the methodological conventions of science and (ii) the popular belief in progress through scientific expertise. In these same two features of modernity, I submit, the power of research to transform might also be lost.

6.4.10 Science: Power through Procedure and Progress

6.4.10.1 *Power through procedure*

Educational research and other scientific endeavours are social processes of producing knowledge. Scientific communities are committed to certain premises and lines of reasoning for certifying

knowledge. Through the rules of scientific research the insights developed by researchers are legitimated to count as 'knowledge'. The rules and ensuing procedures of science are thus scientists' main title to validity of knowledge claims.

Being socially constructed, the rules of social science are however neither neutral nor undisputed. Political, philosophical and epistemological assumptions shape and fashion the methods and outcomes of research (see eg. Popkewitz 1984:34-5 & pp.51-4; and Habermas' framework of knowledge interests¹⁴). Furthermore,

[t]he discourse of science contains different and sometimes conflicting assumptions about what constitute social facts *par excellence* and how people are to make sense out of ... their social world. The power of the underlying assumptions in science is that they do not appear as such but are contained in the different customs, conventions and findings of research (Popkewitz 1984:35).

Epistemologies, methodologies and research outcomes are socially constructed and related. Yet the relationships between them are seldom put up for review in the everyday life of 'applying scientific findings'. This is the implication of 'scientism' and its centrality in our worldview, modernity (Beck 1991:2-3). Researchers themselves often ignore the assumptions underlying the techniques they use (see eg. Dunne & Johnston 1992), seeing a methodological choice as a technical issue. Thus P1, P2, S3 implied that methods were neutral and only important in terms of the most time- and cost-effective ways of 'getting the job done', or a personal choice depending on what the researcher feels comfortable with (see 5.3). The interviewee who stated that "the method determines the outcomes" (M3), in arguing for what Robottom & Hart (1993) termed a "deliberative choice" of methods in the Namibian context, was one of a few exceptions. The local and international discourse of "qualitative and quantitative paradigms" often illustrates this perspective, too.

Failing to reflect on the epistemological and ideological assumptions underlying various research methods and techniques is to perpetuate those assumptions and the forms of knowledge produced by them. Popkewitz (1984:18) reasoned that, since

[t]echniques emerge from a theoretical position and therefore reflect values, beliefs, and dispositions towards the social world ... the choice of technique is a moral responsibility.

Seeing methodological issues as merely technical is also to lose sight of the fact that our research questions and outcomes are shaped by the given methods. Popkewitz (1984) argued that by focusing only on the procedures of science (and ignoring their underpinnings) we are led "to consider only those questions and problems that conform to its procedures". In this way assumptions which give credit to only certain methods ('the scientific method' and latterly also action research, are good examples) limit the scope for research. A more (rather than less) scientific approach would be to have "methods and procedures respond to and develop from theoretical interests". Otherwise, if

¹⁴ Grundy (1977) provides a useful introduction to Habermas' framework of epistemological interests.

"reflection, criticism and development become tied to the improvement of techniques, the root assumptions about the world embedded in scientific practices are not examined but are crystallized" (Popkewitz 1984:21).

6.4.10.2 *Progress personified: The social role of researchers*

In what could be termed the 'professionalisation' of knowledge production modern societies have 'licensed' intellectuals to produce knowledge and indeed to direct social change through that knowledge.

Popkewitz (1984) charted the course of university researchers, from a time when their inquiries were linked to public agitation to the current position in which they tend to focus on informing policy-makers (see pp.113-4). He described how, in the late 1800's, American social scientists' "reformist tendency to influence the masses" started to create "tensions" (p.115). These researchers found that "their incursion into public education had created strains within the business community and in the university" (p.115). As a result the earlier notion that the social scientist could combine both investigation and popular education was then dropped. (This idea has surfaced again in the current calls for the 'popularisation' of research; see 4.4.3, 4.4.4). In the early 1900's, however, "[a]cademic debates were to be internal to the professions, aired at professional organisation meetings and in scholarly writing" (p.115). These were the very exclusivist practices which had been questioned so strongly by P2, C4 and others. In explaining that there was a belief, at the time, "that the practical emphasis betrayed the ideals of classical scholarship, a tension that still exists within the university", Popkewitz (1984:116) might have been talking about the situation in South Africa today. In this study similar tensions were evident in a senior academic's questions about whether action research projects for Master's degree purposes represented 'projects' or 'research', 'academic' or 'trade' qualifications (HHDC member, pers. comm., 1994) and perhaps in some of the concerns that greater access to and relevance in research in African universities would imply a lowering of 'standards'.

An elaboration on the tensions between the roles of 'public agitator', scholar and informer of policy need not detain us here. These tensions have been noted briefly in the discussion of the 'critical model of change' (6.2.4), one which is frequently applied by South African researchers interested in playing all three roles: being central in developing policy for the new government, serving as spokespersons and 'empowerment agents' for 'communities' and contributing to intellectual debate. Here it is relevant to note that the late 19th century was also the time when the idea of academic freedom assumed importance in the USA, notably

to reflect the argument that science was not a matter of opinion and belief but of research and investigation and that the institutions in which these efforts occurred would provide for the betterment of society as a whole (Popkewitz 1984:118).

Academic freedom does exist, Popkewitz (*ibid*) claimed, but not to the extent that may be generally believed. He described the existence of "indirect means to limit 'radicalism'" (p.120), noting that

the pressure for conformity to certain research agendas in the USA today comes from university administrators in non-neutral relationships with governments and business. Industry and corporate foundations have become important in the shaping of universities and the research agendas they support, in the USA (Popkewitz 1984:123) and wider (Wood 1992). These links are being ignored, Popkewitz argued, because "the ideology of neutrality has been successfully internalized in the consciousness of our research communities" (p.125). At the same time, the idea that research should be involved in social amelioration and progress, one which many participants held (4.3.3.3, 4.3.3.4), was established.

In southern Africa research agendas and styles are similarly influenced by a range of powerful groups in multiple relations with each other: governments, universities, corporate - and international donors, and scientific institutions linked to all three (eg. ZERO, the HSRC, FRD). Yet when intellectuals produce knowledge from within these institutions, we see only the products of science which are to be instrumental in our progress towards the ideals of modernity, viz. rational control over our environments, ourselves, our social structures, and over change. Through the unquestioned belief in such controlled, neutral scientific progress society gives researchers a license and indeed request to determine its directions. 'Progress', claims Beck (1991:183-187), 'has replaced voting'.

6.4.10.3 *Change? Or reform and regulation?*

To summarise, researchers are em-powered by society to provide it with knowledge and direction, on the basis of a modernist myth of controlled progress through the application of neutral scientific rules and procedures. The belief in science-and-progress, while emancipatory with regards to the superstition of pre-modern times, has ironically through scientism created a new myth around "the quasi-religious modern icon of science" (Beck 1992:3). Thus our worldview (modernity) which aims to free, poses constraints "of a traditional kind" (*ibid*) in the ideologies of modernism.

The very myth (progress though a narrow conception of science) through which the power to change is claimed and allocated, also refutes that power. The notions of rational control over environment, self and others; expert-driven and incremental change; and cumulative knowledge shaped unreflexively by institutionalised procedure and past example, may rule out transformation.

The limitations of this situation lie *inter alia* in (1) the central role allocated to the researcher, (2) the exclusive endorsement of a particular kind of knowledge and (3) reasoning (rationality), (4) the notion of linear progress and (5) the hidden ideology of science.

Popkewitz (1984:130) highlighted some of these aspects:

The promise and pathologies of the sciences of change need to be placed against the actual assumptions and organization of knowledge. If we focus upon explanations of social and educational change, we find a particular cognitive style and range of assumptions from those who adopt the professional-expert strategy. The styles of thought are [in that particular case] borrowed from the empirical and symbolic sciences. These styles of thought ... misappropriates those sciences in ways that

enable *social order and stability to become paramount* (1984:130).

He later points out (Popkewitz 1991) that even decentralised (community-based) and empowerment-oriented (critical) approaches to change rely on the educational researcher as authority or agent of change, and links the failure of educational research to bring about substantive change to the belief that social researchers can and should direct change from such a privileged position.

In the closing chapter of *A Political Sociology of Educational Reform* Popkewitz (1991:245-6) calls for

the rejection of the philosophy that views theory (and the intellectual) as producing progress and intent. ... If we have learned anything from the scholarship of the past hundred years, it is to assume that progress is not built on rational knowledge alone. It is also to be skeptical of what we or others call progressive.

Educational reforms (such as those promoted in environmental education) are best understood as "part of the process of social regulation" (Popkewitz 1991:2). When we as researchers assume "that scientific knowledge is about the future", we are no longer being scientific, but ideological. We have engaged a position on social regulation, one which could be a threat, Popkewitz argues, to democratic ideals.

A desire to control social regulation resonates within the theme of environmental education as a tool for changing others (5.6), the instrumental function attributed to 'useful' research (4.3.3.5), the central role of expertise in change models and visions of managing or facilitating social change (6.2.2-5).

It is ironic that the power of social control embodied in scientific research is built on a myth of control over nature (Docherty 1992): the single form of analytic reasoning through which scientists currently study nature obscures much and does not provide us with the sought-after control, as the environment crisis clearly shows. (See also 7.6).

Note that the existence of social regulation *per se* is not being challenged here, but rather the central roles of (1) the educational researcher, (2) rationalist reasoning and (3) the norms and conventions of scientific research in such processes of regulation. The notion of 'social regulation' does not imply a grand plan of covert coercion. It describes a way of organising social life. As part of this pattern of modern existence intellectuals' wishes to be involved in this process are to be held up alongside those of the people working in schools and kitchens, in governments, corporations and aid agencies. The point to note is that regulation "imposes distinctions, visions, and practices" (Popkewitz 1991:235) on others and ourselves. Reform, regulation and imposition stand as opposed to transformation.

6.5 CONCLUSIONS

Changes of various kinds were called for by most research participants. Research priorities were related to a context of change, and to perceptions of what that change should entail and how it was

to come about. The results show different interpretations of the term 'change' and different orientations to change seemed to be associated with different orientations to research and environmental education.

Inconsistencies in discourse, and between discourse and practice, suggested that change might also be resisted, in multiple ways. Change might furthermore be jeopardised, even by those who favour it and agree upon its proposed directions. This happens when suggested solutions are built on the same framework around which problems arise in the first place. Expert-driven 'models' for change are examples, as are frequent suggestions to improve the dissemination, implementation, accessibility or 'usefulness' of research.

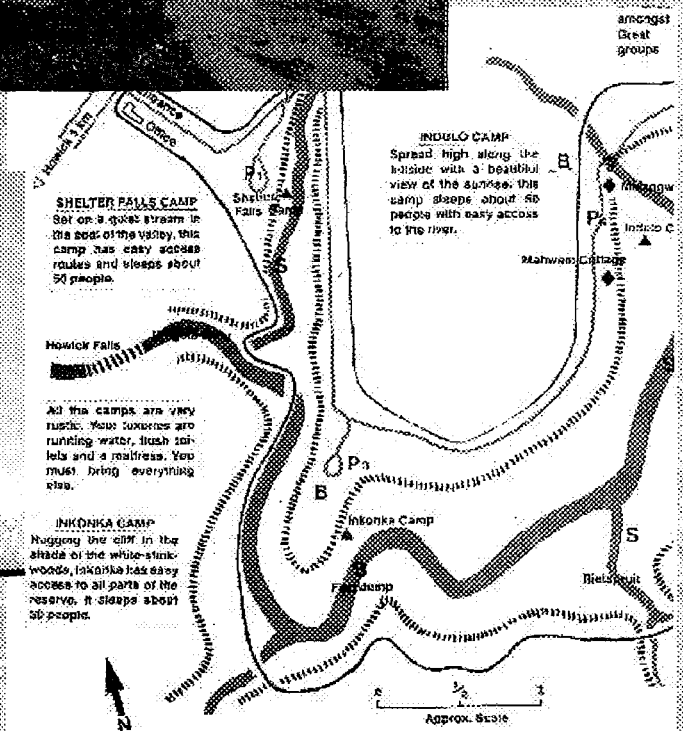
The environment crisis draws our attention to the need to reflect on modernity, its ideals and the ways in which we attempt to realise them (Beck, 1992). De-centring the intellectual; questioning large-scale, expert-directed and rationally controlled change; and a critique of the notion of progress arise from a postmodern perspective on change. From this perspective the failure of research to deliver the promise of 'real' and 'useful' change challenges the modernist assumption that research should be regarded in an uncritical and instrumental fashion. Reflections on the history, nature, underlying assumptions and effects of our scientific endeavours might release research activities from a current position as a prestigious enterprise apparently directing the management of so many processes of reform, or 'mere motion'.

Beck describes 'late modernity' as a period and position of public reflexivity on and for the modernist ideals of democratic systems, liberation from myths and thoughtful control. Reflexive modernisation is characterised by shifts in the ways in which science, environment and education are conceptualised. Reflexive science (Beck 1992) is mindful not only of its techniques, but also of the assumptions underpinning them. Beck (1992:156) notes that "... science begins to extend the methodological power of its skepticism to its own foundations and practical results ... Demystification spreads to the demystifier". From a reflexive position we question the conventional wisdom that the vantage points of the scientist or educator are central positions from which to solve the socio-ecological crisis.

When educational researchers make claims about the future as the product of science, Popkewitz argues, they are busy with social positioning "to gain cultural and social capital" (1991: 218). The notion of linear and rational progress itself is to be questioned upon the recognition of the socially constructed nature of criteria for rationality. Modernistic assumptions (that scientists/ researchers provide progress and amelioration and that these proceed rationally) might undermine the ideals of a modern society (including democracy and transparency), as well as our efforts to illuminate the shadow side of modernity as manifested in the environmental crisis.

She said: What is history?
And he said: History is an angel
Being blown backwards into the future.
He said: History is a pile of debris
And the angel wants to go back and fix things,
To repair the things that have been broken.
But there is a storm blowing from paradise
And the storm keeps blowing the angel
backwards into the future.
And this storm, this storm
Is called
Progress.

Extract from: *The Dream Before* (Laurie Anderson)



CHAPTER 7

A PERSPECTIVE ON RESEARCH PRIORITIES

7.1 INTRODUCTION

In seeking closure on this thesis, I am left with an image of an open-ended map and a sense of an opening up of a perspective on research priorities. This image comes from a discussion on the function of theory by Elias (1970:16):

In some ways, theories resemble maps ... Like maps, theoretical models show the connections between events which are already known. Like maps of unknown regions, they show blank spaces where the connections are not yet known. Like maps, they can be shown by further investigation to be false, and they can be corrected.

Reflecting on the contributions this thesis makes to our understanding, it seems to me that it sketches some aspects of a previously ill-defined landscape of research priorities in environmental education in southern Africa. It illustrates, too, the use of some drawing tools, lenses and compasses which have not been applied by many researchers in the 'field' of environmental education. Thus my series of landscape portrayals form the basis for a map of what was at the outset a relatively opaque and uncharted terrain.

This new map is tentative and sketchy, as all maps of the shifting terrains of social life need to be. Its main contribution might lie in revealing a number of connections which were not obvious to many of us (environmental educators in the region) before we set out on the journey, and in revealing some disconnections within orientations which are often portrayed, in the literature and everyday usage, as rather consistent. The function of this chapter is to briefly illuminate these connections - features of modernistic trends in conceptions of education, research and change - and the disconnections - the ironies within the ways in which we think about and go about doing environmental education research - within the landscape.

This concluding chapter also points to a major direction opening up in the arena of environmental education research. This direction is to set out exploring an ironic situation: we are responding to the environment crisis - that great disruption between people and planet, and between our modern ideals and our actual experiences - through forms of education and research which seem best designed to support a continuation of the *status quo*.

There are signs of an opening up of possibilities, though, in emerging reflexive perspectives. If we can avoid casting these in the mould of an intellectual hegemony, there might be much potential in perspectives outside of narrow modernist conceptions of science and knowledge, as outlined by Docherty (1993:25):

In this state of affairs, the operation of reason is extending itself beyond its own internally coherent framework, and attempting to grasp the new. This extension is one in which we begin to see a shift in emphasis away from what we could call scientific knowledge towards what should properly be considered as a form of narrative knowledge. *Rather than knowing the stable essence of a thing, we begin to tell the story of the event of judging it, and to enact the narrative of how it changes consciousness and thus produces a new knowledge.* ... the postmodern advocates a shift 'from text to event' (my emphasis).

My intention with this document has been to narrate the process of the journey through an unfolding landscape which became increasingly clearer and more complex as my theoretical vantage point shifted. Aspects of the thesis tend, however, to present as the (narrowly) 'scientific' form of knowledge referred to by Docherty (*ibid*). The contrasting styles of representation in the document in themselves reflect my journey of understanding.

7.2 A PROPOSED CONTEXT FOR RESEARCH PRIORITIES

It is a truism that 'research priorities in environmental education in southern Africa' can be considered from a number of different perspectives. This was confirmed by the range of perspectives on environmental education and research appearing in the landscape of this study, and the range of accompanying opinions on research priorities.

In Chapter 2 I proposed that priorities for environmental education in the region be seen within a context of socio-political, epistemological and environmental changes in the sub-continent. The importance of these dimensions of the context was accepted by the majority (but not all) of those who participated in the study (see 6.1). It is also valuable, in discussing research priorities, to reflect on historical, philosophical and socio-theoretical accounts of the environmental crisis. Some of the more incisive of these accounts (referred to in Chapter 2, 2.2) place the socio-ecological crisis within the styles and patterns of thinking in modern societies, their ethics and epistemologies, and the social structures (eg. political economies and institutions of education and development) which embody them.

This study was directed by a conviction that

- * current environmental problems warrant serious attention and concerted efforts to act on them;
- * such problems have their roots in the patterns of thinking and doing (practices, theories, worldviews, institutions) which people have developed over time;
- * in order to deal with environmental problems, we thus need to develop new ways of thinking and doing and
- * this calls for an innovative approach to the practices, theories and institutions of

education and research.

Along with Einstein (quoted at the start of Chapter 2) I proposed that the problems of our time require solutions which necessitate a different kind of thinking than that which societies engaged when those problems started to develop. Developing potentially 'transformative' knowledge (see 5.6.2.4) appears to be an important response to the socio-ecological crisis.

7.3 FEATURES OF THE LANDSCAPE

7.3.1 Overview

The landscape portrayals presented here are based on the results of my interactions with the literature and with research participants from formal and informal education spheres, development, conservation and natural resource management, social and bio-physical sciences and academic and non-academic contexts. Thirty-eight individuals from South Africa, Namibia, Zimbabwe and Lesotho were interviewed and two workshops (one national, one southern African) were utilised specifically for research purposes. Several other southern Africa workshops, conferences and meetings, as well as international study tours, contributed to the data and perspectives which were gathered and discursively engaged with over a three year period, 1992-1994.

The emerging landscape was complex. The range of views on environmental education, research and change reflected in the data showed patterns, themes and trends, but also inconsistencies and ambiguities, many of which were articulated by participants themselves. Furthermore, the observed trends or shifts in discourse seemed to shape and to be shaped by other developments, at multiple levels (6.1.4.2).

Expressed views and observed shifts reflected the international discourse in educational, research and development arenas, the discourse of local and international development and funding agencies and the discourse of so-called 'powerful personalities' in the environmental education community in South Africa. Shifts in discourse were also closely related to political democratisation in Namibia and South Africa, with interesting inconsistencies appearing within institutions with close links to past political regimes (6.1.4.2, 6.3.2.2).

Within this complexity certain patterns with regards to views on environmental education, research and change have been discerned and clarified. These patterns reflected internationally described positions, but inconsistencies within them also challenged the latter.

7.3.2 A Pattern of Positions on the Landscape

I labelled the first position I identified in the landscape, *Research for Re-Ordering Nature and Society*. The views on environmental education, research and change of the majority of participants was clustered to describe this orientation. From this perspective (see 4.4.2)

- * 'change' was viewed as reform through scientifically planned social management;
- * environmental education as tool to bring about individual behaviour change in support of such management; and
- * research as an instrument to provide technical information to evaluate and improve education and inform management.

Research (and theory) was distinct from education and other forms of practice; the former being a precursor to the latter (4.4.2, 5.4). Change was to be brought about by the dissemination and implementation of expert-derived ('scientific') information and management plans and their adoption by those perceived to be in need of such knowledge to effect the necessary change in behaviour patterns (6.2.2). Education and change were driven by this allegedly a-political and objective expertise and were without exception intended for 'Others'.

This orientation reflected coherent strands of a positivist epistemology, a technical interest in and empirical analytic approaches to research, and behaviourist and cognitive psychology and communications theories underpinning approaches to teaching and learning (4.4.2.5, 5.6.2.5).

A further position on the landscape, appearing distant from and in opposition to the orientation described above, was that of *Research for Reconstruction* (described as Position III in 4.4.4). The views of a much smaller group of participants consistently reflected underpinnings within liberation socialism and critical theories. From this position the kind of change required was the radical reconstruction of society to rule out social and economic inequalities and to bring about hegemonic shifts. Environmental education and research were both 'openly political' processes aimed at reconstruction through the empowerment of those who had been disadvantaged by an inequalitarian regime. Research and education were similar processes - reflection on practice was encouraged, as was participatory research oriented towards capacity-building among participants. The notion of praxis, a dialectic between theory and practice, was employed. The cognitive interest underpinning research (and education) was 'emancipation'.

From this perspective change was to be brought about through collaborative research, development or education projects linking change agents with the disadvantaged (6.2.4). The critical theory premise is that such collaboration would reveal structural constraints upon the mindsets of the disadvantaged, who would then be emancipated to act against such constraints. In the southern African context, more so than internationally, there was also an emphasis on the need for 'basic knowledge' from which empowering processes were to proceed. Despite the alleged distance from Position I, education was also viewed instrumentally and appeared to be still aimed exclusively at Others. The instrumental perspective on knowledge reflected strands of positivism and a realist ontology (see Guba 1990).

Yet another position on the landscape consisted of a range of views which had in common a rejection of theory- and expert-driven orientations and an emphasis on the 'practical' as opposed to 'theoretical'. I labelled this orientation (Position II in 4.4.3), *Research for Resolving Practical*

Problems. The kind of change envisaged was not radical, but merely improvements in existing development and education contexts by directly addressing the needs of ‘practitioners’ and ‘communities’. Education was seen as a life-long and ‘holistic’ process of learner- and community centred facilitation towards the actualisation of inherent potential. Research was required to involve practitioners and to resolve their concrete problems. Theory and practice, researchers and practitioners were conceptually separated. The latter was seen as a more important focus than the former.

This position reflected a wider range of theoretical strands than the previous two. These included liberal humanist traditions incorporating the ‘progressive’ trends of experiential or activity-based learning and ‘integrated’ and constructivist teaching methodologies. A ‘practical’ cognitive interest and symbolic or constructivist epistemologies (4.4.3.5, also see Guba 1990) might have underpinned at least some of the views in this collection.

7.3.3 Breaks in the Pattern

The features of these three orientations were in some cases consistently and in other cases very inconsistently reflected in the discourse of participants. The orientations to environmental education, research and change in this study did not reflect discrete and stable categories or ‘paradigms’. The *Practical* position did not present a well-developed theoretical framework (see the treatment of the notion of authority in 4.4.3.5, for example) worthy of ‘paradigm’ status. The *Critical* position, on the other hand, seemed to be situated in a coherent framework, but the level of coherently articulated support for it was limited.

Challenging the very notion of ‘paradigms’ were several interviews which reflected discursive strands from two or more of the positions outlined. These intertwined strands negated the notion of discrete boundaries between such positions. Also, the contestation of these orientations (with reference to research methodologies, for example) seemed to represent posturing rather than positioning: inconsistencies in the discourse / practice of proponents reflected strands of positions which they ostensibly opposed (4.5, 6.3.2.1). It would appear that in several instances the apparent orientation was more like a repertoire of potential or residual responses that could be brought to bear in diverse situations. This was supported by the observation that these three positions shared features which hinted that at some levels they were not as different from one another as they seemed (see 6.2.5.4. and 7.2.4 below). All the above observations challenged not only the existence of the various orientations as discrete positions - positivist, practical or critical - in the researched landscape, but also attempts to set up such groupings in the first place.

7.3.4 Recurring Features of Modernism

Recurring features of positions on research, environmental education and change were themes emerging in the studied landscape. They were important to pursue in that they revealed modernist assumptions, restrictive boundaries and unproductive myths. These themes included

- * a theory-practice divide or dialectic (5.4)
- * a focus on education of and research on or for Others, i.e. 'other' than the researchers / educators / developers who are driving the processes (5.6); this was the case even among those espousing the needs of communities / practitioners/ 'the people' and collaboration with the disadvantaged (6.2.5.3);
- * the centrality in education and research of an expert, either as scientist/ manager/ educator, facilitator or change agent (6.2.5.4);
- * instrumental views of research (4.3.3.5) and of environmental education as tool (5.6);
- * views of knowledge as accumulative (5.6.2.4) and instrumental, eg. emancipatory (6.2.5).

There was thus a common orientation of formal researchers working on or for change among Others, and using research and education as tools in the process. Change was seen as something to be brought about in Others, through technique and strategy. In Position I rational change was to be based on scientifically derived, neutral and objective knowledge. In Position II the wisdom of the practitioner was to be the criterium for change. In Position III change was to be brought about through both 'basic' and collaboratively developed knowledge, change agents' notions of structural constraints and 'true consciousness', and the rational responses of 'participants'. These themes entail change strategies which would depend very strongly on existing, dominant patterns of thought and organisation.

Themes reflecting the features of modernism appeared in views on the role of research and researchers, knowledge and education, as well as the notions of rational, linear and controlled or managed change, and instrumentalism. The latter was apparent in the widespread belief that research needs to be useful, that it has a role to play in change (progress) and that it needs to do so in an instrumental way (4.3.3.3-5).

7.3.5 Disillusionment with the Performance of Research

Juxtaposed to the view that research had a role to play in progress was an equally widespread disappointment with the outcomes of research and its failure to fulfil the assigned roles (5.7, 6.4.3). Among the proposals for changes which would make research more valuable (suggestions of increased accessibility, better dissemination, more 'relevant' research topics and increasing involvement of practitioners (6.4.4-7) there were features which reflected solutions cut from the same cloth as the problems (6.4.8, 6.4.11). The situation rather seems to require a reconceptualisation of the role and nature of research.

An emerging perspective within the research data - which I labelled 'reflexive' - may have the potential to avoid and indeed challenge the assumptions outlined above. Featured in the discourse and

practice of a small number of participants this cluster of views was nevertheless significant in the landscape of the study. It differed significantly from the three positions outlined above in coherent ways. I was also struck by its particularly productive orientation, judging from the practice of its proponents. In 7.4.3 I illustrate my current understanding of ideas on research priorities as viewed from a reflexive perspective, which is the perspective I increasingly developed throughout this study.

7.4 RESEARCH PRIORITIES

7.4.1 Shifts in Theoretical Vantage Points on Research Priorities

Despite the similarities between positions and the fact that the data criss-crossed the boundaries I drew between these positions, they do present as different orientations within different perspectives from which participants viewed research priorities. From Position I, for example, priority research would provide technical information on different target groups for education and on 'how to' communicate effectively with such groups, and would evaluate the outcomes of such efforts. From Position II, priority research would involve the direct resolution of problems. (Ongoing) feedback on and guidelines for practice were priorities mentioned, as were action research projects to address practitioners' immediate problems. From Position III, priority research would dismantle structures of the existing hegemony, or provide information which can be utilised in such 'reconstructive' processes; priority research would actively involve the disadvantaged and lead to their empowerment.

How does one decide on research priorities if participants viewed 'change' in different ways and listed priorities from different perspectives, I was asked during the study. From a positivist perspective one would require 'one right answer', the one list of research priorities which would reflect the 'true' situation. This study could then be interpreted, as some participants (L1, L2, S3, EEASA workshop attendants) did, as a technical interest in establishing research priorities so that Rhodes University can help to coordinate research in the region, perhaps bring a sense of order to the arena, even make judgements about existing work. From the interpretative position I had taken in the early parts of the study, however, I was interested in establishing a dialogue with and between participants, enabling them to contribute to a consensus-based framework from which one could then identify priorities. From a critical perspective, one would make explicit the limitations of the assumptions underpinning other perspectives, and then proceed to construct a new categorical position from which to identify priorities.

From the 'reflexive' perspective which became increasingly clarified as my vantage point, the technical idea of developing a 'list' of priority topics was replaced by the description of, and critical reflection on, a landscape of different orientations to research in/and environmental education. The emergence and clarification of this reflexive outlook was influenced by the need to engage, in the light of the environment crisis, the notion of 'significant change'. 'Re-search' needs to pursue new knowledge, but also to engage with existing knowledge, critically assess it, review its history and underlying features and reveal restrictive myths (see Beck 1992).

I also drew on a postmodern perspective to review the landscape of research priorities. If features

of modernism are implicated in the socio-ecological crisis (see 2.2) it seems appropriate to temporarily assume a position 'outside' the modern and to reflect from there on the ideals of modernity (democracy, freedom, equality, the fulfilment of basic needs, control over environments) and how we can meet them more adequately. This perspective complemented and added a dimension to the reflexive engagement with the data.

Thus theoretical strands described by the terms postmodernism (Docherty 1993) and reflexive modernity (Beck 1992) provided my tools with which to review the situation and the potential for change. There are potentially innumerable other theoretical orientations which may contribute to the process of developing new visions (re-search) (see eg. Richard 1993, Bell *et al.* 1992). I have chosen these particular perspectives for their comprehensiveness and incisiveness, but also for the fact that they allow for, encourage and illuminate other knowledge systems (see Docherty 1993, Richard 1993).

Although I do not suggest that the 'reflexive' outlook arrived at within and for this study is the only valuable one, I also do not think that all perspectives are equally good. In fact, I propose that many of the orientations which uncritically derive priorities within prevailing modernist assumptions are more harmful than helpful.

7.4.2 A Reflexive Orientation to Research in/and Environmental Education

This orientation was less a position in the landscape and more a reflection on it. As an emergent potential within a reflexive engagement with the perceived failings of research and a desire to construct a more relevant orientation to research, it challenged various myths and assumptions within the positions in the landscape. Thus it challenged, for example, the conceptual divisions between theory and practice and between research and environmental education observed in participants' discourse. From this perspective, environmental education and research were viewed as a unitary, critical process of clarification and change. There was no distinction between researchers and practitioners. Research / theory was neither serving (Position I) nor undermining (Position II) nor in a dialectic tension with (Position III) practice; theory was regarded as an integral part of critically responsive action (4.3.2.4, 4.4.5, 6.2.7).

A reflexive orientation allowed for a view of the expansion of knowledge which included the accumulation of facts, but also for critical reflections aimed at challenging existing conventions, ideas and forms of reasoning, by revealing their socially constructed origins, their implications and their limitations with respect to transformative processes.

Change itself was conceived of as a process to be engaged in and to enact within and through collaborative networks, rather than the engineering or facilitation of others towards certain outcomes. Processes of learning and change were not aimed at predetermined objectives; objectives were to "... become beacons guiding this process, and the course itself" was to transform "the indeterminate into the determinate" (Doll 1989:250).

7.4.3 Research Priorities from a Reflexive Perspective

What does this study show us when, along with fellow-researchers, students and funding agencies, we look for its 'outcomes' and 'recommendations'? We note that there are no "overall ... sum of events", no "sharp lines" and "walls"; no "conclusions" or generalisations and no attempt to create "boundaries"¹. Nonetheless, there was much to be learned from and about the "manifold events of sand" and "directions of significance" revealed in this study.

Firstly, we have learned to doubt a position of centrality from which research is to guide or direct, as well as the notion of directing itself, whether from technical, community or critical interests; at the same time noting that researchers can also carve a niche for their expertise by denying that authority (6.2.5.3). To explain this departure from once-off, central directives to reflexive and day-to-day decisions in dialogue and action, I again quote Doll (1989:250) who describes "transformatory" change as a change in perspective and methodology which involves an "internal reorganization" through interaction, as opposed to external control of direction.

Secondly, and related to the above, is the observation from our experience in this study, that insights emerging from research are perhaps best shared *within* research processes. Such insights inform the actions of researchers / practitioners on an ongoing basis. The insights from this study is making a significant difference in my teaching and other interactions in the environmental education community. Through those inter-actions in action, these insights might be taken further. By confirming the value of *being engaged in* ongoing research I substantiate one of the principles of participatory research. Yet this study did not satisfy some of the other guidelines of participatory research (referred to in 3.2.2). To reflect on the research process itself is an important way of clarifying the learning of this study (see 7.5.2 below). It will also be useful to reflect my insights about reflexivity in research by showing how they influenced decisions about research design.

7.4.4 Research Insights and Decisions about Project Design - Three Small Case Studies

The learning-within-action of this research process is embodied in the kinds of decisions I now take with regards to research design, eg. in the M.Ed. (Environmental Education) course in which I teach environmental education and research in environmental education. It will thus be illuminative to share examples of research projects which I have helped three of my students to design. My thinking about these small-scale projects² features nuances of an emergent reflexive orientation to research, which on the basis of this study appears as a priority research style in our course.

¹ From the poem by Ammon, cited at the end of Chapter 1.

² Students are required to produce a dissertation of no more than 30 000 words, working over a one- or two-year period with fairly close support from a research 'supervisor'.

Case Study 1: Participatory action research

The first research design to share is that of a student who heads an environmental education centre for teachers. The concerns she brought to her research project were a need to improve her work at the centre; to develop a better grasp of the concept of environmental education; to convince teachers that environmental education was more than the ecology section of their Biology textbooks and that they should use the centre independently from her and finally, to do research that would make a tangible difference. My concern was to share with her, as a Masters of Science graduate, a new vision of science through critically reflective research.

We accordingly designed a participatory action research project in which she would work with a group of teachers with shared concerns in designing programmes or resource materials to improve her work and their independent utilisation of the centre. At the same time, both she and the teachers should clarify their understanding of environmental education and use the developmental research process to deepen that understanding. Furthermore, the academic contribution of the project would be a reflexive assessment of the potential of participatory action research (PAR) to improve a practical understanding of environmental education. Her assessment will take into account her experience of positivistic research, the literature on PAR and the results of the study.

Case Study 2: A survey

The second student whose proposed study I want to share also holds a post-graduate qualification in the bio-physical sciences. He is however not as comfortable as the previous student with non-positivist approaches to research. His wish is to conduct a survey which will explore features of the 'environmental' approach to teaching taken by people in similar professional positions as himself. The reflexive dimensions of his study, should he decide to include them, could involve (1) a re-conceptualisation of the discipline in which he and his respondents teach, in the light of his growing understanding of environmental education, (2) an assessment, based on his experience in the study, of the potential of survey-based research to provide meaningful results and (3) an exploration of the assumptions underpinning the definition of 'meaningful results'. When the student completes his survey, he needs to know more about the issues he studied and the method he used, but also about the socio-historical context in which he practised environmental education, and which shaped his choice of method and research questions. This meta-perspective, currently absent in his work, would constitute reflexivity in this particular context.

Case Study 3: A 'cross-cultural' study

The third study is to be undertaken among community leaders and government ministers in Namibia. The student's interest is a perceived 'policy-practice' gap in environmental legislation in that country. She might need to address the following issues in the study:

- * an appropriate method for collecting data in multiple settings of interactions between European and African traditions and conventions, given that most of the conventional

data collection techniques were developed in European settings;

- * the dynamics of being a female researcher in a strongly patriarchal society recently infiltrated by a feminist discourse from northern hemisphere donor countries; and
- * conducting her research in such a way that it establishes an ongoing dialogue in which to engage a widespread unfamiliarity of the concept 'environmental education' in Namibia, despite impressive environmental policies (see Janse van Rensburg 1994).

Her reflection on the research process might include a reflexive account of the study in the context of a confluence of various sub-cultural streams of thought, of which her research could be an example.

These examples should make it clear that studies rooted in action and requiring reflection on *inter alia* the research process itself, will demand much more of the student than the mere implementation of a particular methodology. This belies the notion that 'project'-based research of this kind is less rigorous or theoretically demanding than 'classic' academic studies (see 6.4.10.2).

7.4.5 Priority Topics, Areas and Styles

Direct questions about research priorities resulted in a number of different types responses. In the view of some participants the study had to identify priority *topics* for research. A popular opinion among SAWMA participants, as well as S3 and L3, was that 'environmental issues' would determine priorities for educational research. The latter interviewees did however discover that it was very difficult to provide a single overarching 'scientific' perspective on environmental issues from which to define such priorities.

Other participants advocated that research priorities should be determined in particular *contexts* with broader national frameworks in mind. Ethno-geographical factors were deemed significant variables in the determination of research priorities. This was one indication of a prevalent 'discourse of difference' in the landscape of the study (5.5). Yet other participants thought that priority *areas* for research, such as 'curriculum and resource development', 'evaluation' and 'formal education', could be identified. Areas mentioned were however often closely related to participants' own professional contexts, and attempts to prioritise from such lists of areas for research failed (see 3.4.1).

The most useful opinion on research priorities was that they should be identified according to *style* rather than topic and areas. Some styles (ways of doing research, see 5.7.2.1) were deemed more appropriate than others. Within a reflexive perspective, research and projects were intermingled. Hence decisions about what counts as good and relevant research were the same as decisions about good environmental education projects. Good projects were those which involved productive action in clear response to the environment crisis, critical reflection and dialogue (4.3.2.4, 4.4.5, Fig. 4.2). If priority research was that which embodied productive environmental education, i.e. was

indistinguishable from good environmental education, priority research styles would embody:

- * research with an action component, "analysis-in-action" (A2)
- * research which does not distinguish between researchers and practitioners
- * critically reflective research which challenges and clarifies existing theory, including one's own; theory-driven research aimed at conceptual clarification and at revealing the possible limitations of past and current patterns of thinking and doing
- * researching within, and learning from, productive processes, rather than evaluating outcomes or applying models
- * a style of reporting which clarifies, communicates and orientates, rather than an 'objectivist' style which obscures the research process and distantiates both the reader and the researcher from it
- * research designs oriented towards process as well as outcomes, and reporting styles which reflect the nature of the research process
- * research which establishes an ongoing dialogue around shared agendas, rather than projects which aim to identify and refine techniques for the education of Others through message transfer, facilitation or empowerment
- * research which exposes reified boundaries (eg. between developed-underdeveloped, scientific-indigenous, expert-other) and develops community through communication, rather than research which sets up channels to communicate the messages of experts to externally-defined communities of Others
- * research which seeks to re-conceptualise patterns of thinking and doing, rather than to apply well-established procedures (more) efficiently.

The aim of such research would be for researchers

- * to *learn* (from their practice)
- * to *reveal* (unproductive conventional wisdoms and theories and new insights) and
- * to *improve* (rather than prove the success of) their practice.

7.4.6 Priority Methods

In response to a question on research *paradigms* a number of academics spoke about positivist and post-positivist research traditions in what at first appeared as sharp disputes about methodological choices. Closer scrutiny revealed some professional territoriality, rhetorical differences and contestations which lacked depth and clarity.

On priority methods for research, opinions ranged from the view that choosing a research method was merely a 'technicality', to the view that methods were powerful enough to "determine the outcome" (M3) of research. Most participants did not find it useful to identify priority methods, for it was more important how methods (such as surveys) were used in particular contexts, than which methods. The doubtful underpinnings of some methods-in-use were revealed sharply in the context of rural Namibia, where mistaken conclusions were reportedly drawn based on the uncritical application of

conventional methods.

There was a trend to favour more "participatory" and action-based research methods (see 5.7.2.1). This trend (which some also resisted) was often overtly linked to political change and was characterised by an inconsistent discourse, reflecting perhaps ambiguous commitments to change and tensions related to the desire to 'democratise' research. With some exceptions, there was also an absence of theoretically coherent reflections on the assumptions underpinning various research methodologies; suggested methodological shifts were generally more politically than conceptually motivated.

An important political (policy) dimension influencing choices in research design identified by this study was the funding of research by 'outside' agencies.

7.4.7 The Position of Funders

This study has shown that funders of environmental education research aim to and succeed in setting trends of a significant kind. It is important that researchers engage with this dimension of their work and, in the light of an influence which goes beyond financial provision, research funders need to think through the origins and implications of these significant views they take. Insights from this study include the need for dialogue and collaborative action across traditional boundaries. It thus seems important to recognise the central role of funders *within* research processes, and to blur the conceptual boundaries between researchers and funders of research. From such a clarified position, environmental education would be significantly enhanced if, as funders, we

- * are involved in the research we support, as 'insiders', shaping them through our interaction and collaboration on the basis of ongoing and contextual data, rather than through 'flavour-of-the-moment' funding strategies to shift action or respond to discursive trends
- * re-think conventions about the kinds of data most useful in assessing whether projects are successful or not by, eg., reflecting critically on the fact that certain research orientations and forms of data reveal one aspect but obscure others - that that which escapes measurement is not non-existent or insignificant, but merely escaping our attention (see Docherty 1993:5-6 and Wals 1990)
- * allow for emergent research designs, but insist on rigorous ongoing review
- * support environmental education projects that have an integral research dimension, i.e. on-going critical reflection in 'productive action' (4.3.2.4)
- * recognising the theories within our funding policies and strategies and clarifying a coherent framework from which to act.

7.5 COMMENT ON THE 'PARTICIPATORY' APPROACH TO THIS STUDY

In designing the research I brought a 'practical' interest (see Habermas 1972) to the study. My aim was a participatory project which would involve a broad range of interested parties in dialogue around the topic. Several participants stressed the importance of including a wide range of people in the study, particularly so-called 'marginalised voices' (3.2). I also wanted the research process itself, and not just the outcomes, to be 'useful' for others as they participated. The design was thus emergent (Tesch 1989), allowing for participants to help shape it and to comment on interview summaries, results, interim interpretations and emerging issues (see 3.2). The survey was based on spiralling cycles of data collection, interpretation, sharing and reflection. Data was collected from documents, in semi-structured interviews, focus group discussions, workshops, conferences and other everyday professional encounters.

I surmised that the interviews in particular would provide participants with opportunities to reflect on and articulate their understanding of environmental education and research. Although some participants took great care to prepare themselves for the interview, however, the situation often did not allow for the kind of dialogue which could have led to greater insights between us. What several interviewees seemed to have simply confirmed for themselves, was that their understanding of the concept environmental education lacked clarity and direction (5.2). I noted ambiguities in their discourse which we could not clarify within the limited dialogue the interview setting allowed. Also, not many people made use of the opportunities to provide feedback or engage actively in the project (3.5.1, 3.5.3).

There were, however, a number of participants who did engage with and contribute actively to the research process and the insights developed in it. These engagements took place in joint action and in reflective dialogue on shared concerns. These participants were colleagues who shared active concerns with me: the teaching of research students, joint course material - and curriculum development, and an interest in the theoretical issues involved. It was significant that research insights developed as I was reflectively engaged with others in day-to-day professional activities (teaching, course design, research supervision, presentations of papers) and as I started to bring those insights into what I had first perceived as the separate realm of the Ph.D. study.

An important observation is thus that in this case a participatory design did not 'work' quite as idealised (in 3.2.1-2). Learning and collaborative development of insights did not ensue as much from others' participation in my study, than from my active engagement with them and their work, from working together on 'our' work and, most significantly, from allowing the rest of my professional life to enter into the research arena and contribute to and benefit from it. This was a vital aspect of the study. It confirmed and addressed A3's concern (see 5.7.2.1) that the research would be less productive if it did not include an action component. In review it might be said that the study has failed as a participatory process, in that only a small number of participants became actively involved. Its value however, was that it moved away from technical attempts at a participatory design, towards an inter-active, action-oriented process.

A second (related) observation to note refers to the notion of seeking 'marginalised voices' to contribute to a participatory study. The experience of this study was that even those interviewees from 'more marginal' contexts (eg. people of colour working in 'Third World' situations) did not express a unique discourse 'untainted' by other influences (see 3.7.2.1). Southern African societies incorporate a rich diversity of sub-cultural discourses intermingled with international influences. Those who are often perceived as oppressed develop multiple ways of empowering themselves in their contexts. These include, for better or worse, adopting the discourse of others perceived as more powerful.

Several interviewees valued the participatory design of the project reported on here and suggested ways in which it could be improved. It was thought, for example, that if I had conducted a survey-by-questionnaire and afterwards described my own 'framework for research priorities' developed in isolation, it would have been seen as another researcher setting herself up as an expert. This perspective reflected past experiences of such research. The literature survey for this study has shown that research on priorities is usually conducted by soliciting expert opinion, either through questionnaire surveys or during panel discussions, with an emphasis on consensus among selected experts in a particular field (see for example Saayman *et al.* 1991).

7.6 REFLEXIVITY, CRITIQUE, TRANSITIONS

The need to reconceptualise research was brought to the fore by the emergence, in this study, of the following:

- * a quite general disillusionment with the outcomes of formalised research activities, along with, however,
- * suggestions for improvements which featured the same assumptions that gave rise to the failings in the first place, and
- * ambiguities and inconsistencies in the discourse on research.

The insights of this study include the view that a re-conceptualisation of the myths and conventions of research as modernist enterprise (see 5.7.3.2, 6.4.11) seems more meaningful than attempts to improve the dissemination or accessibility of research findings. Reflection on the assumptions of the research process itself is 'truly scientific', Beck (1992) argues, for it extends the cautious attitude towards scientific results to its methodological foundations. This is the manner in which to move, he suggests, from 'traditional' to 'reflexive' or 'modern' science.

One of the conventions of 'traditional science' (from Beck's reflexive perspective) is the centrality of a particular form of scientific reasoning.

In the desire to contest any animistic enchantment by nature [superstition], Enlightenment sets out to think the natural world in an abstract form. As a result, the material content of the world becomes a merely formal conceptual set of categories. ... reason has been reduced to *mathesis*: that is, it has been reduced to a specific *form* of reason. ...

Reconceptualising acceptable forms of reasoning and science will no doubt be strongly resisted, for it is in the conventions of the scientific method which the traditional power of researchers have been located, and in the myth that scientific knowledge always provided society with a greater sense of certainty. In fact, science provides one form of knowledge based on one form of reasoning which dominates and restricts other forms of knowledge and reasoning, including those which might pave ways out of socio-ecological dilemmas.

Docherty (1993) portrays the world of high modernity as one in which knowledge can no longer be equated with certainty. With reference to an increasing public awareness of the ways in which knowledge and knowledge production are regulated, he notes that "[to] know the real is no longer to know something stable ... As a result knowledge itself ... has entered into crisis". This crisis had been foreseen by Kant. In his *Critique of Pure Reason* Kant grappled with ways in which to overcome the stalemate of knowledge produced within a particular framework. Docherty (1993:25, my emphasis) explains that

an *a priori* knowledge gleaned simply from analytic methodology would simply tell us a great deal about the methodology, and not necessarily anything new about the world ... to perceive the world at all, consciousness needs a form in which to comprehend it; that form - the analytic method of perception - serves primarily the function of self-legitimation. Kant wanted ... the reality of the world to serve as an avant-garde; that is, to be able to shock us out of the ideological conditioning of our mental structures ... He wanted, thus, what he called a *synthetic a priori*, which would exceed the *analytic a priori*. This would not only confirm the method of epistemological analysis of the world, it would *also allow for the structural modification of the very analytic method itself to account for and encompass a new given*, the new and therefore unpredictable data of the world.

To explore the possibility of re-thinking research conventions in the light of a conceptual crisis which manifests itself in environmental problems, it is useful to think of research as 'institution', on the following three levels:

- * Research referred to in this study usually took place within academic and other institutions;
- * Research also takes place within the context of science which, as Beck (1992) reminds us, has become an institution of modern life;
- * Research is based on institutions, i.e. customs and conventions which are seldom critically reviewed in everyday practice.

Formal institutions (universities, other quasi-governmental research bodies, funding and aid agencies) appear as powerful shapers of the knowledge produced by intellectuals, for they have been licensed by society to do so. These institutions subscribe to certain rules about knowledge, science and research. As researchers we become accomplices in the institutionalisation of research by subscribing

to research conventions (certain styles of writing, of laying out reports, referencing them and so on). Like the rest of society we are powerfully influenced by the conventions of science, tending to believe that science (research) provides us with rational knowledge on which we can base the control of nature and society, if we follow its rules religiously. We forget at times that these rules are socially constructed, that they tend to be based on one kind of rationality only and that everything which does not fit into that form of reasoning either escapes our attention in the research process, or is simply not pursued further. In this state of amnesia we present our findings as guidelines (or they are interpreted as such) on which to base directions for change ('progress') in the interest of better education for a better environment.

A post-modern perspective on knowledge production startles us into realising the actual interests served by the conventions of modern research. Docherty (1993:5-6) is particularly lucid in an exposé of the way in which a rationalistic epistemology limits our understanding of the world, but increases our control over others who do not own this cultural capital.

A mathematical consciousness [refer to the quote from Docherty 1993:5 above] ... produce[s] the world, not surprisingly, as mathematics. So a desired knowledge of the world is reduced to the merest *anamnesis*, in which the consciousness never cognises the world as it is, but rather *recognises* the world as its own proper image and correlate.

Enlightenment's 'emancipatory' knowledge turns out to involve itself with a question of power, which complicates and perhaps even restricts its emancipatory quality. Knowledge, conceived as abstract and utilitarian, as a mastery over recalcitrant nature, becomes characterised by power ... Knowledge is reduced to technology, a technology which enables the *illusion* of power and domination over nature. It is important to stress that this is an illusion. This kind of knowledge does not give actual power over nature, for that in nature which is unamenable to its formal or conceptual categories simply escapes consciousness entirely. What it does give in the way of power is, of course, a power over the consciousness of others who may be less fluent in the language of reason. Knowledge thus becomes caught up in a dialectic of mastery and slavery in which the mastered or overcome is not nature but rather other human individuals; it is therefore not purely characterised by disenchantment and emancipation. From now on, to know is to be in a position to enslave.

From this position, Docherty (1993:6) then proceeds to cut into the notion of emancipating others from being enslaved by the knowledge produced by the more powerful ('false consciousness' in the discourse of the critical theory researcher) through critical and participatory research:

The very myths from which Enlightenment claims the capacity to disenchant humanity are themselves the products of Enlightenment, constructed and produced in order to be unmasked by Enlightenment, and hence to legitimise the utilitarian activity of an Enlightenment epistemology.

Hence the need to take a reflexive stance not only towards the pre-modern myths (superstition) and

the false consciousness produced by powerful structures and institutions, but also towards our own scientific endeavours as researchers. Beck (1992:160) argued that

[t]he gate through which [socio-ecological] risks can be scientifically opened up and treated is called the critique of science, critique of progress, critique of experts and critique of technology.

Rather than confirm expectations, science, research and critique should open up possibilities. A questioning orientation towards knowledge production need not be nihilistic or negative. It should expand possibilities and release potential beyond the limitations of the modernist assumptions which frustrate the very ideals of modernity. The lenses and vistas provided by postmodernist and reflexive perspectives should aid and clarify processes of change and transition. The challenge is to conceptualise and enact these within environmental education research without turning them into yet another Enlightenment myth.

Contrary to prevailing belief, the potency of social science is not in the utility of its knowledge but in its ability to expand and to liberate the consciousness of people considering the possibilities of their human conditions (Popkewitz 1984:7).

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PERSONAL COMMUNICATIONS

Anonymous (on request). Curriculum Expert, Ministry of Education, Lesotho. January 1993, Harare.

Fisher, D. Professor, Dept. of Social and Educational Studies, Faculty of Education, University of British Columbia. July 1993, Vancouver.

HHDC (Humanities Higher Degrees Committee) Member. (Name withheld). October 1994, Rhodes University, Grahamstown, South Africa.

Malone, K. Post-graduate researcher, Unit for Studies in Mathematics, Science and Environmental Education, Faculty of Education, Deakin University. August 1994, Geelong, Victoria.

Robottom, I. Associate Professor, Unit for Studies in Mathematics, Science and Environmental Education, Faculty of Education, Deakin University. July 1993, Vancouver.

Stiles, K. M.Ed. student and contract researcher for Ministry of Education, Zimbabwe. January 1993, Harare.

APPENDIX 1

A FRAMEWORK FOR RESEARCH PRIORITIES IN ENVIRONMENTAL EDUCATION IN SOUTHERN AFRICA: First Research Report December 1992

BACKGROUND TO THE PROJECT

This project is being undertaken to assist with decision-making about research in environmental education: Can we identify issues in southern African environmental education which seem to be particularly important to research? Are some ways of doing research more appropriate than others? Which research projects should be given priority in terms of academic or financial support? The framework which the study is to produce is not meant to be prescriptive, but instead to broaden the perspective from which we make these decisions, and to provide an overview within which practitioners/researchers may want to place their own work.

The aim of the project is to develop, in a participatory manner, an open-ended framework for research in environmental education (EE) in southern Africa. It is open-ended because priorities may change as situations and contexts change. The framework will consist of (1) guidelines which researchers can use to help them select priority areas in which research seems to be needed and (2) views on the most appropriate research approaches in the current context. I use the term "research approach" to refer to the philosophical, methodological and technical aspects of research.

It seems reasonable to say that people with different views of or approaches to EE would have different views of what the priorities for research are. The study should thus also reflect different approaches to EE, although a thorough analysis of those would call for a separate study.

The framework for research priorities to be developed in this project will also be influenced substantially by my own approach to EE and to research, for I need to make the ultimate decisions regarding the questions, ask them and interpret them. Although my understanding of EE in the southern African context should deepen during the months of the study, it is important to be aware of my current views of EE and the ways in which these may influence my approach to the project.

APPROACH TO THE STUDY

I see three facets of the context in which the project takes place as particularly important. The first relates to major socio-political changes in the sub-continent, a pertinent aspect of which is the educational crisis. The latter has led inter alia to calls for education for a just and democratic society, curricula more relevant to the needs of learners and the communities from which they come, and an emphasis on open-mindedness and skills of critical thinking. The second consideration is the juxtaposition of different research approaches which, while creating a dynamic situation, also leads to tension and uncertainty among researchers and practitioners in the field. The third feature of the context is a growing awareness of global and national environmental issues, coupled with a concern about meaningful ways in which to deal with them. It seems to me that the most important focus EE can take is to stimulate changes in our ways of thinking about and interacting with the

world. We need to learn to question existing structures, ideologies and practices (including the practice of research) and to analyse how these may be involved in harm to the environment and to people. We need to learn that our ways of thinking and doing are not given, but that we are responsible for constructing and perpetuating them. Most importantly, we need to learn that we can change that which proves to be inappropriate. This learning process is equally relevant to children and adults, and to the rich and the poor in rural and industrial communities.

From the above one can deduce that the approach to this study is a critical (as opposed to analytical or interpretative) one. Both my own developing understanding and the research results will inform an assessment of the views of research priorities illuminated by the project. From this assessment guidelines will be developed to point to the perceived most appropriate areas of and approaches to research in EE in southern Africa. More definite parameters for the study can only be developed during the project, informed by the research process. To do so initially would defeat the purpose of the study, which is based on principles of participatory research and the assumption that a democratic approach to the generation of knowledge is most appropriate.

RESEARCH METHOD

The principle of participatory research applied to the study is that all who partake in it, such as the interviewees and others whom I consult, have a significant opportunity to make a contribution not only to the final research results, but also to the design of the project, as it proceeds. This would involve contributions to the definition of the research problem, the choice of methods, the interpretation of results and decisions about how the findings are to be used.

The study has elements of a survey, in that I try to glean information and insights from a wide range of people who are either potential users of EE research findings, or who are involved in research in the field. They would include representatives of funding and development agencies, scientists, conservationists, fieldworkers, journalists, and educational policy-makers and practitioners. Data collection is mainly through personal interviews in which the following areas are discussed:

- my intentions with the project and the interview,
- the interviewee's professional context,
- her view of this project, particularly its design
- his view of or approach to EE (this is not always easy to articulate and sometimes comes through in other information, such as examples of his work),
- her view of the problem areas in EE, in both her own work area and more broadly,
- the role research can play in addressing those problem areas, if any,
- issues which may seem more important to research than others, and
- research methods which seem more appropriate to use than others.

The study will follow a pattern often described as a spiral of consecutive "cycles of enquiry". Each cycle will consist of (1) gathering of data, (2) data analysis and reflection, and (3) sharing of findings and calls for comment. The outcome of that cycle will then feed into a second cycle, which will build on the findings of the first. This report represents the end of

the first cycle and summarises its main results. Participants in the first cycle are asked to reflect on the report and on summaries of their interviews, and to comment on whether their interviews have been interpreted fairly and on whether their views or the situation have changed since the interview. At the same time, new respondents are asked to comment on the findings and to present new views, so starting a second cycle of enquiry. In this way an important intention of the project may be realised, namely to broaden understanding, stimulate debate and inform practice, while it is taking place.

Other data collection tools which I use, and which may be useful to other researchers, include the development of a databank on EE-related research (academic and non-academic, current and completed) in southern Africa. This database could point to research areas which may have been favoured or neglected so far.

RESULTS OF THE FIRST RESEARCH CYCLE

For reasons of brevity the results dealing with participants' approaches to EE and their views of major problem areas are not presented here. Those findings are to inform the interpretation of the results which are more central to the focus of the study, namely views on the role of research, priority areas or topics for research, and most appropriate methods in EE research. The latter results, pertinent viewpoints about this study and its design, and information on the interviewees, are outlined below.

First however, some interesting observation regarding interviewees' responses to the question "What is your approach to or model of EE?" will be noted. These were the number of participants who referred to a lack of clarity in their own and/or others' understanding of the concept environmental education, a degree of defensiveness among some interviewees regarding their approaches to EE and thirdly, apparent misinterpretations of other environmental educationists' approaches (in terms of which own approaches were at times expressed). These observations are to be discussed elsewhere.

1. The interviewees

The 21 interviews of the first research cycle took place in the Eastern and Western Cape, Bophuthatswana, Natal, Transvaal and Namibia, from May to November 1992. At the annual EEASA workshop in July preliminary results were presented for analysis and discussion in two sessions which yielded more data. The people visited and interviewed so far had varied degrees of experience in research; they ranged from formal academic researchers to those who researched an aspect of their practice only occasionally and informally. Table 1 shows the various categories of agencies from which interviewees came. Note that some research participants are listed in more than one category.

Table 1: Agencies which interviewees represented

Conservation agencies	9 Interviewees
Government education departments	2
EE Centres	3
Colleges of Education	1
English Universities	4
Afrikaans Universities	2
University science departments	2
University education departments	2
Freelance resource developers	2

2. Findings related to the project itself

Various viewpoints relating to the appropriateness of this study and its design were expressed. Firstly, one interviewee questioned what was perceived as an attempt by an institution (Rhodes University) to 'determine' national policy regarding research priorities. Others did not seem to find a project in which those with academic expertise developed research priorities at a national level, problematic at all. Possibly the most balanced perspective expressed was that policy-related research had to be addressed on two levels - through democratic participation at a 'grassroots' level, and through an overview of the broader situation provided by those with the time and expertise to do so at another level.

Several participants believed that research topics have to be defined by practitioners "in the field" in accordance to their practical problems. Several of them also thought that research priorities were context-specific, for example related to what one interviewee termed "ethno-geographic" regions. A number of participants were thus of the opinion that it would be difficult or inappropriate to establish a general list of priority topics for research. One respondent thought that my undelineated term environmental education made it difficult to define priorities. Others noted that they did not have a broad enough overview of EE to judge what the national priorities were.

Despite the concerns raised, all participants proceeded to contribute to the construction of guidelines for the most appropriate and useful forms of and approaches to research (see section 4). Many interviewees, after discussing the problem areas in EE from their perspectives, also mentioned several priority research topics in their own contexts (latter half of section 4).

General Notes: Interviewees' interpretation of the term research was mostly, but not always, that of a fairly formal enterprise, although not necessarily academic.

Comments on the design of the study and subsequent changes

As noted, interviewees were asked to participate in the design of the research. Comments in favour of the current design all focused on its participative nature, the absence of a 'survey by an expert' - approach and the opportunity to enter into discussion about research, which it afforded. Research findings should be circulated often and in an informal form, to make regular sharing possible. Not everyone appreciated participative research models however: some participants mentioned that this meant that 'they were doing the work while I would be getting the Ph.D.!!

Other negative views on the project design pointed to the lack of an action component which made the research less relevant to that commentator, and that the "opinion survey" interview situations would not be conducive to real dialogue which could lead to the co-construction of knowledge. Another very different criticism was that the interviews were too unstructured and that rigorous analysis of the results would be very difficult.

Discussions during an EEASA workshop session led to a title change, from "Research Priorities in Environmental Education in Southern Africa" to "A Framework for Research in Environmental Education in Southern Africa". It was suggested that the original title suggested a judgemental project: 'If my research was not on your list of priorities, I would feel it was regarded as worthless', is how this sentiment can be summarised. The new title also captured better the focus of the research, which has developed, with the inputs of research participants, from a list of priority topics to guidelines for research, as outlined in the introduction.

3. The value or role of research

Most participants indicated that research had a definite role to play in addressing the problem areas which they had identified in the interviews, though they had not all given equal thought to the matter. Some interviewees emphasised that research was useful ONLY if it was designed in such a way that its findings could be implemented directly, in practice, "on the ground". This adjunct of implementation was seen to be the researcher's responsibility.

Some of the ways in which the value/role of research was perceived were:

Research can help to remedy our current [social/ political/ educational] situation, it can and should be involved in the process of reconstruction; it is a tool for social change;

Research can inform us about our world so that we can use it to improve processes and work towards change;

Research can be used to develop a counter-hegemony and mobilise mass support;

Research can play a fundamental role in environmental problems, by providing environmental statistics to pressurise government to address them (specifically statistics about degraded rural environment in Namibia to pressure for land redistribution)

Research can and should inform policy and practice in a dynamic way;

Research can and should inform management policies and strategies;

Research helps one decide how best to apply limited resources;

Research can contribute to the organisation of society and of resource use;

Research informs a curriculum innovator about the success of and problems with the implementation of the innovation;

Research should help to improve practice;

EE is by 'nature' research-based and theory-driven.

The role of research in improving one's own practice was a recurrent theme which had several dimension including the evaluation of programmes on an ongoing basis; the provision of rigour or discipline in programmes; the design of curricula, programmes and materials; the opportunity for reflection which it afforded as well as the information the practitioner needed to take her next step of action; the need to assess one's work for its effectiveness and to research either "the right buttons to push" or "the best way to reach the most people". The strongly voiced view that research was primarily for the solution of problems encountered in practice, has already been noted.

In summary, perhaps the majority view was of the role of research as problem-solver. Although several interviewees saw research as a tool to do what one was doing, better, there were also a considerable number of responses which indicated a strong belief that research was or should be a tool for change.

4. Guidelines for Research

The question of whether it was possible to list priority topics or areas for research was discussed in most interviews. Priority areas and even specific topics for research were identified by some participants, as discussed below, but others focused on what could be termed general guidelines for research in environmental education in southern Africa.

One respondent believed that one should research those projects which embodied one's approach to EE. Accordingly projects, actions and research should be prioritised together. (This supports the assumption that one's approach to EE will influence one's view of research priorities.) This respondent believed that projects which were active, productive and constantly evaluated to inform better action, were worthwhile to research. Research which evaluated projects for their effectiveness was not as useful as researching projects which themselves were critically evaluative. Projects which revealed insights into people and change, which fit the ideal of sustainability and which are likely to have spin-off effects, are worthwhile to research. Another respondent felt that research need not necessarily be linked to a project; a position paper on some theoretical aspect would also be very useful to the practitioner.

Some respondents thought that the "style" of research was more important than specific research topics. Some priority styles of research described were (1) research which was theory-driven and critical, uncovering and challenging assumptions, (2) research which had practical applications and (3) research

which was linked to action. Linking research with practice was a recurrent theme; related was the view, noted above, that research needs should be identified by practitioners and fieldworkers and not by outsider-researchers approaching them in a top-down manner. Good research was defined as research that was implemented. Also related was the problem several interviewees perceived with the dissemination and implementation of academic research. One interviewee thought that non-academic research was more of a priority than academic research, for academic research could draw on non-academic research, but not the other way round - an opinion relating to perceived inaccessibility of academic research. A researcher had problems with the "way which we communicate research": the language was often inaccessible, and the time spent on the thesis was wasted, for the latter then had to be "translated" into publications which are more widely read.

"Research that sits on the shelf" was deemed untenable by several interviewees. Research should be problem-centred, even when it was undertaken in an academic setting. Academic institutions should show more flexibility in the ways in which they evaluated research, so that practitioners would not be excluded from doing research, one interviewee thought. He did not expand on it, but it may relate to issues articulated in the section on academic research in the final part of this report.

Further on the style of research, it was thought that research should not be product-orientated but should initiate a process, should be participatory and should "affirm dialogue"; the consultant doing the research should have the attitude of a student wanting to learn from the situation. Other guidelines noted were that research should be "futuristic", inter alia by interacting with "liberation movements" and planning for a future "stabilised political situation". It should contribute to "movement" and development in a practical sense, and be "empirical" as opposed to "book-bound and collected" (i.e. documentary). Researchers should address compartmentalisation by trying to establish links, for example between government departments. A number of interviewees indicated that research should be more "open-ended" and "ongoing" than it had been traditionally.

The view that research priorities were region- and or context-specific has to be reiterated. A number of interviewees pointed out that what needed to be researched in Bophuthatswana or in the north of Namibia, for example, (and perhaps the way in which it should be done), differed from what should be done in Natal or in southern Namibia.

Another researcher criticised existing (Masters level) research for having a "limited local emphasis", focusing on what had been convenient for the researchers and not producing "models acceptable to the international community".

Four interviewees believed that the most pressing environmental issues will determine EE research priorities. One of them thought that the environment should determine research priorities, together with one's development priorities. It was noted that environmental educators should research how to take the needs identified by environmental scientists, and "translate it into something that people can actually do something about".

Research that informed policy was regarded as a matter of urgency in the current socio-political context of South Africa. More broadly, research which directly addressed facets of social change was seen as a priority by a number

of interviewees; an example was research into the reconstruction of conservation agencies by their members. A number of Namibian participants echoed these sentiments: Research to develop policies for wildlife conservation in so-called communal areas was seen as a priority, as was research to address the perceived imbalance between what was described as "the two societies" in Namibia. One respondent thought that "the primary focus of research at the moment" had to be "what are the critical issues to environment ... within a changing southern Africa".

Several Namibian respondents thought that the country did not have a "culture of research". They advised that research should take the discriminations of the past into account; the "Third World situation" was seen as a priority area for research. Perhaps related was the expressed need for research into socio-economic profiles, natural resources and community needs (in the contexts of both education and extension) and how they could be met, in the "communal areas" of this country with its predominantly rural population.

Several interviewees saw research into various approaches to EE as important, to provide clarity, coordination between the various individuals and organisations working in the field and "some policy or guidelines", or to help communicate the 'right' approach to others. One participant wanted to understand the SA environment and the various EE responses emerging in terms of the social milieu, in order to identify those approaches which were the most appropriate for building a capacity for change and influencing our ways of seeing the world. This kind of research should inform our understanding of the relationship between culture and the function of education, describe and criticise what education is about, and inform curriculum development.

The implementation of EE in the formal curriculum was a priority research area for several participants. Research that contributed to teacher "training", for example to develop modules and methodologies for pre-service teacher education, was singled out, as was primary education and what was termed "basic education" in the Namibian primary curriculum, with emphasis on how to address the educational backlog of the "black and poor" in that country.

Other priorities noted were participative curriculum development, research that contributed to the standard of education in schools and research into ways in which NGO's could support formal education. Several interviewees regarded researching the most effective or appropriate teaching strategies for different groups and in different contexts as necessary, with adults being singled out as a particularly important group of learners. Research on "the best way to reach the most people" was a priority. The links between knowledge, attitudes and behaviour; the learning process and the way in which the latter is influenced by various cultural perspectives and world views, were also seen as important topics, inter alia to inform teacher education. Research to enhance the practitioner's understanding of people's environment-related perceptions was deemed important by another interviewee who thought it could help the practitioner to fit his approach to the perceptions of, for example, tribal authorities and other rural people.

Another priority was the evaluation of EE programmes and projects: "it's absolutely vital to assess what you're doing and make sure that you make it as efficient as possible"; this included teaching "skills and techniques" to assess their effectiveness in changing behaviour. Programmes in EE centres were singled out for evaluation of their effectiveness and to see "what was going on on a national level", in the context of the allocation of funding.

Various aspects of the process of developing resource materials for teachers was a research priority in the opinion of several interviewees. It seemed to be a particular priority in Namibia where one interviewee spoke about "basically no research, especially in environmental education". Teachers' resource needs, whether or not resources materials were acceptable to teachers and the way in which they were used, were some aspects of research into resource development. Other aspects were investigating various Namibian ethnic groups' perceptions of matters related to environmental issues, and views on language-related issues such as the style in which materials should be written for English second-language speakers. Research into the problems of communication, related to English-second language speakers, was thought to be useful by two Namibian participants.

Other priorities identified were research which could place EE on the agenda in the business and industrial world, and which would look into the application of advertising approaches to get EE as social message across. Resource use was a priority, especially by the affluent, since the poor had been a focus generally.

5. Research methodology

A number of participants felt that since research methods were determined by contextual factors, no one method could not be seen as more appropriate than another. Perhaps accordingly, most interviewees had relatively little to say about aspects of research methodology. Those interviewees not involved in formal research often thought that a researcher should decide on the most appropriate methods, to get the research done as quickly and cost-effectively as possible.

When interviewees did have definite views about particular research methods or techniques being more appropriate than others, their views often related to ways in which research methods reflected power relations in the research process. For one research methodology was an important area to pay attention to for "the method determines the outcome".

Another participant felt strongly that research should be designed in order to widen the research base and foster participatory (as opposed to structural) democracy and empowerment, particularly when the research was to generate or "shift" policy. Policy research had to be interactive, i.e. moving constantly between "expert" and "grassroots" levels, and had to include a built-in accountability system.. He saw action research as the ideal but not the exclusive method in this case; surveys were at times appropriate. How the research was done was more important than who it was done by.

Cautionary notes on participative research were sounded by two researchers: it was difficult, people were not always in a position to make the decisions this approach expected of them, and participatory resource development was a slow and unproductive process.

Several other interviewees thought that action research was, if not a priority, at least a very appropriate method in EE research. These were the reasons they offered: Action research may be able to reflect the rapidly changing situation and perceptions in the country in a way which slow surveys could not. The interviewee which voiced this opinion, questioned the validity of survey results, especially when based on market-research principles, and thought that research into the value of that particular method was necessary.

Others thought that surveys had a role, when used appropriately. Another interviewee saw action research as a priority research method in EE, because it fitted with his interpretation of the Tbilisi Principles. He described action research method as an "unbelievably powerful" method; its true essence being its ability to bring about social change. His approach to action research was participatory: a community should decide on how to gather data and on which data/knowledge was valid and reliable. He saw action research as a method by which teachers, for example, could reflect on how pupils learned, using the knowledge to improve both their own practice and the wider context. He did not discard other methods - which he termed "empirical research" - but saw them as having a lesser role, by providing findings which could be used in action research and so determining the direction of change (as opposed to bringing the change about). Another interviewee thought that action research without "basic research" was "very shallow". Other views were that action research, as opposed to the Research-Development-Dissemination-Adoption model, "worked" in resource production, and that it was more acceptable to the society of our day, in which people's needs had been defined FOR them in the past.

Another participant favoured a method called Action Research & Community Problem-Solving, as well as the descriptive Case Study method. Action research was seen as more useful than analysis-centred research, but "analysis-in-action" was deemed the best possible approach to take. The project and the research were regarded as simultaneous happenings; to start acting without critical research would lead to failure, but to start by researching and hoping to implement the findings later (the modus operandi of many other interviewees), was also regarded as inappropriate. The research should be designed so as to set up dialectic processes.

A very different view of the most appropriate research methodology was that of market-oriented research, with EE as the 'commodity'.

Some participants felt that neither the method chosen nor the research paradigm were as important as the implementation of the findings. The method would be influenced by the reason for doing research (for example whether it was for academic purposes or not). They warned against taking too rigid a view of the most appropriate methods, believing that the researcher should choose the approach s/he is most comfortable with, whether it was an "empirical" or a more "humanistic" approach, or a blend of the two. Some respondents did however feel that EE was more "humanistically" oriented and aimed at social change, which was why action research was a very appropriate method.

Several references were made to "logical-positivist" or "quantitative" research and "the scientific approach". Two interviewees followed the scientific approach and regarded it as, although not entirely suited to studies with human subjects, as "the best available" approach and certainly the one accepted by high-power researchers and funders. Most current researchers in EE had been trained as scientists, and hence many felt most comfortable with the scientific method. This approach has been responsible for progress as we know it and was thus still very popular, one interviewee noted. Indeed one of its proponents declared that he had been brave enough to use the scientific approach to study human experience, including the "affective domain", and that if one was not prepared to use measurement-research, "we'll still don't know anything in a 100 years' time!" Both these researchers were open to combining quantitative with qualitative research, but

were strongly influenced by what was acceptable in the (international) scientific field (one interviewee indicating that his research was credited overseas but would not have been so had he followed a purely "qualitative" approach). Other opinions of the 'scientific method' approach to research varied from it not being easily applicable in EE to it being unable to solve educational problems and hence entirely inappropriate. Three researchers indicated that they have moved away to "more qualitative" or action research approaches, because of personal and professional growth. The scientific approach was criticised for being reductionistic (studying "the ticks on an elephant's backside"), not solving educational problems or bringing about change, perhaps even deepening such problems and benefitting only "the researchers themselves", and for producing research "for publications". Difficulties involved in moving away from a scientific approach were being unfamiliar with other approaches and being rejected by both established academic circles and funders. Similar problems were anticipated for research which was perceived to need to be unfocused initially, in order to be responsive to emerging issues.

The view was expressed that research methods had to be appropriate to the context. Several respondents warned that questionnaires were unsuitable in many situations in Namibia. Questionnaires in local dialects have led to technical problems with translating concepts. Interviews were seen as more likely to yield depth and validity; they should be in the respondent's own language and translated from tapes. "Culture" was reported to be a sensitive issue which needed to be respected, making it difficult for foreigners to do research without going through NGO's working in communities.

One interviewee explained that Namibians were not conversant with research, that they were normally suspicious of researchers, and that much attention had to go into winning and keeping their trust, in ways which he elaborated upon. This aspect of the researcher having to win people's trust first, was mentioned by several interviewees. Namibians' dependence on oral history should be acknowledged and the researcher should have patience for elaborate discussions and long-winded answers. In rural areas techniques such as rapid and participatory rural appraisals were being used with apparent success, with multi-disciplinary teams involved in socio-ecological surveys, aimed at setting up a dialogue for basic problem-solving in the short term, and policy development for wildlife utilisation in the longer term.

On the question of who should do the research, several interviewees reflected that practitioners were often the most appropriate researchers. If they did not do the research themselves, practitioners should at least be very closely involved in it. They could identify the major knowledge gaps in their own fields, they would "have a feel for what they are doing", and it would be more cost-effective than to use researchers from elsewhere. They also had easier access to a community in which they worked than an outsider-researcher would have, thus making it easier to win people's confidence. Another view was that practitioners should research their own projects, for "in doing comes clarity". One respondent noted that it was important that the communities on which research were done, made an active input into it, hence the choice of Participatory Rural Appraisals as method. Further on this theme, it was noted that if one was true to the "philosophy of environmentalism", research had to be "collaborative", with the researcher entering into dialogue with participants. There was still a role for trained researchers, for example as the coordinator in collaborative research.

An interviewee questioned that it was (he seemed to think exclusively) foreign aid agencies and consultants who, because they had the resources and the expertise, determined research priorities and conducted research in Namibia. He suspected motives of controlling the development process: "Aid is seldom given for altruistic purposes" and regretted that they have "opened up to aid". He thought that Namibians should do research themselves, perhaps with assistance so that they could learn the skills to sustain the activity on their own. He regretted the "eurocentric approach" to research which led to the production of inappropriate materials or projects and antagonism from Africans. A lack of understanding of local cultures and languages played a major role in the misinterpretation of research results. Another Namibian said that research should preferably be done by the NGO's, but they did not have the manpower and infrastructure to do the necessary research, and because the government would take too long to do it, it could be done by consultants from elsewhere in southern Africa (as opposed to Europe).

A number of practitioners indicated that they would find it useful if others, for example research institutions, conducted research into which they could simply tap; several practitioners said that they were too busy to do their own research and one indicated that he needed guidance to do research.

Two participants expressed the view that, given the complexity of EE issues, research should often be done by multi-disciplinary research teams.

Few interviewees found it useful to discuss the concept of research paradigms. One of them associated different paradigms with Western and Africa worldviews; he had indicated that research should focus more on the disadvantaged and the African sector of Namibian society, but, thinking of his own role as white educationist in this process, asked the question "Who is African?".

6. Preliminary Data Analysis

I ran two workshops at the annual EEASA meeting with the aim of involving more peoples in the process of analysing and discussing the research findings and the emerging research design. I was surprised at the amount of interest shown in this topic in a very full and exciting programme, especially from people working outside the formal research field. Many people attended the session with aims different from mine, however. They wanted to discuss questions such as: What is research? How does one research one's own practice? How can trained researchers assist others with evaluating/developing their programmes? Is there an inventory of research reports? How can the sharing of results and feedback be facilitated? How can we interact while doing research? Can we establish a forum for research? Some of these issues were dealt with at the workshop; while others were not, they should all be addressed at least to some extent in this project.

At the first session groups of participants discussed the results which were presented to them in roughly summarised form. One group discussed philosophical issues, such as what research is and how one's understanding of EE would influence one's views of priorities. A second group worked on "Guidelines for Research", while two others tried to categorise and rank the topics referred to above. The "Categories of Research Priorities" one group decided upon were:

1. Formal Education
2. Non-formal Education

3. Business/Industry
4. Evaluation
5. Resources
6. Teacher Training
7. Culture and Perception
8. EE Theory
9. Practice/Implementation
10. Communication

The group reported as follows: "It was agreed that to rank these categories is almost impossible because of the variations in contexts-in which the research is conducted. They are all very closely related/inter-linked, but with varying degrees of importance in different situations."

We recognised that the data presented at the workshop was still too 'raw' to deal with adequately in the time available. Interest in the topic warranted a second workshop. Although attended by only a small number, lively discussions ensued. These led to the title change discussed above.

Both workshops showed that there is interest in research in the EE community and a desire to know what others are doing. A very positive outcome of the EEASA Workshop was the establishment of a research forum with the aim of promoting research in EE. This will be done through a small annual conference where research results can be discussed, and through circulating discussion documents such as this one, to inform and elicit comment from colleagues.

EMERGING ISSUES IN ACADEMIC RESEARCH IN SOUTHERN AFRICA

During the past year my experiences with supervising and conducting academic research and interacting with others involved in this field, raised a number of issues that related specifically to academic research in a changing world. For the purpose of inviting comment and raising debate, these issues are outlined below.

The issue of standards or criteria for the **assessment of academic research projects**, and the related broader question of **what constitutes good research**, are raised more often now that more students are enrolling for post-graduate degrees in environmental education. Some researchers feel that the criteria for research reports set by academic institutions are inappropriate: the ability of research to address practical educational problems should be regarded higher than the ability of students to write well in English. This issue has to be addressed in the broader context of educational reform in southern Africa. There is the view that universities need to change, to become "of Africa and for Africa"; the opposing view is that a university is an essentially Western concept and that those who wanted academic degrees, should conform to its Western criteria of excellence. The "so-called liberal white universities" seem to be in line for attack, but not always aware of a need to rethink their positions. Does the socio-political changes in our region, together the multi-dimensional environmental crisis, call for critical reflection on academic expectations of and guidelines for research projects? More fundamentally perhaps, does the perceived failure of academic research through the years to bring about changes to the problematic issues which seem to be their *raison d'être*, also demand such a critical rethink?

2. A second issue which often cropped up during the year was **the newness of interpretative research**, as opposed to the analytical or 'scientific method

approach. Students struggled with the 'paradigm shift': they were uncomfortable with the 'objective - subjective' tension, worried that there seemed to be "nothing special" about its techniques of observing and asking questions, and were plagued by the remnants of the reductionistic thinking in which we had been educated. Several researchers in the environmental and other education fields have worked through the experience of moving to what some term 'new paradigm' research, and the publication of a monograph on the topic has been suggested.

Comment is now invited on the issues raised above.

APPENDIX 2

"A Framework for Research in EE in Southern Africa":
Discussion/Working Paper No.1 (Circulated Doc. No.2)

Eureta Janse van Rensburg
March 1993

TOWARDS REFLECTIVE RESEARCH

When it comes to research ... At times we tend to go to the people to extract some information and keep it as our own and say: "They don't understand the situation, we understand it". And perhaps ... we are using our own eyes to see them, and never using their own eyes to see us

... - Research participant, Zimbabwe

1. The history of this paper

In 1992 I embarked on a research project that was originally termed "Research Priorities in Environmental Education in Southern Africa". My intention was, as it still is, to develop a framework for research in environmental education (EE), with the potential to inform research decisions that are regularly taken by students, researchers and funders of research. I believe that the construction of a framework for research in Southern Africa is ideally done in a participatory manner, and thus I designed the project around spirals of investigation, dialogue, reflection, and sharing of findings, followed by further reflection, investigation and sharing.

Reflection on the project, its context and my findings illuminates its focus - research in environmental education - and also informs the development of the project itself. Wishing to share some of these reflections and the issues which the project has raised so far, I drew from my findings the theme of **formal research and the control of knowledge**. Before I describe the issues related to this theme, and the observations which highlighted them for me, the reader may need to know some more about the project.

The data gathering tools I decided on were semi-structured interviews (for investigation and some dialogue), workshops (for sharing and dialogue) and discussion documents such as this one (for reflection and sharing). To date I have interviewed some 30 people from the EE community, about their views of EE and problems in the field, the role or value of research, possible priority topics for research, and the most appropriate methods of and approaches to research. I also wanted these interviewees, and participants in a workshop which I ran, to comment on the value of the project and to contribute to its design. For example, a number of research participants indicated that a list

of priority research topics would be less feasible or useful than guidelines about the most appropriate research styles and areas. In keeping with the emergent nature of the research design, and in response to the interviews, workshops and discussions with colleagues, I changed the project title to "A Framework for Research in Environmental Education in Southern Africa".

As the research progressed there were incidents and observations which raised issues that eventually led to the writing of this paper. Firstly, the project was to be a Ph.D. study at Rhodes University, and a formal research proposal was submitted for approval to the university's Humanities Higher Degrees Committee (HHDC). This was done only after the start of the research process outlined above, for my supervisor advised that my original proposal would be considered unacceptably open-ended (or vague) and that I could gain more clarity on the design by actually proceeding with the project. I followed his advice but six months into the project, two members of the HHDC still turned the proposal down. Their objections seemed to centre around the departure from more conventional research methods in the emergent and participatory design. Although I managed to defend the proposal successfully, I was intrigued by the possibility of control by senior academics over the research methods being followed at a university.

A second incident also related to institutional criteria for academic work: a non-unanimous decision was taken to not grant a student's Masters project a distinction, despite the research being widely regarded as an important and exciting initiative in participatory curriculum development. It seemed that the main reason for the decision was that the thesis was poorly written. The ruling raised questions about the criteria for assessing research projects. It focused my thoughts on what it was that research students ought to learn - how to do exciting research that can 'make a difference', or how to write up a project according to traditional standards? Very likely it was not an either-or situation, but was the faculty maintaining the right balance?

Thirdly, I noted that participants in my project accorded research activities a role in processes of environmental, policy and educational **change**, such changes reported as crucial by virtually all. Furthermore, many interviewees clearly thought that existing ways of doing formal research were not having the desired outcomes in terms of 'usefulness' or bringing about meaningful change [formal research = formally documented and structured projects, usually for contract or academic purposes]. Few interviewees were satisfied with existing academic research, and some were very negative indeed about aspects thereof [academic research being projects done through academic institutions, usually for degree purposes]. At the same time I saw students make tremendous sacrifices to complete research projects which, in the case of the Department of Education at Rhodes, form a compulsory component of the Coursework Masters programmes. The commitment of the supervisors who help these students to complete what proves to be a daunting task for many, is often equally impressive. So much effort should surely be accompanied by a high degree of 'meaningfulness', not just in terms of a sought-after qualification and credibility as supervisor, but also in what the research itself brings about.

In the fourth instance, interviewees' responses on the value of my own project were mostly positive yet predictably varied, but I was unprepared for two participants' views that the setting of research priorities was part of an institutional agenda to establish Rhodes as a 'centre of excellence' in the field of EE. They triggered reflection on the range of motivations behind and perceptions about academic projects.

Thus alerted about sensitivities towards institutional researchers I was somewhat wary on the next leg of the project, which took me outside South Africa. As it turned out however, Namibian and Zimbabwean interviewees made little reference to my institutional agenda. Several of them were concerned about the setting of research agendas by "those with the money and the expertise", but they were referring to consultants and donors of development aid from Western Europe and North America. A close look at an evaluation project which involved local practitioners, overseas consultants and the needs of funding agencies, finally convinced me that I needed to explore the issue of formal research as a means of controlling the construction of knowledge.

If (in this case formal) research can be a means of informing, stimulating or even implementing change, as many in the EE community seem to believe, it has to be orientated towards change. However, if the research, its objectives and its design are largely determined by unquestioned conventions of academic institutions or the needs of international funders and consultants, the possibility of research informing and stimulating change in directions *outside* the interests of these powerful sectors in society may be very slim. The next section explores this issue in the light of my research findings so far.

2. Research and Change

At the outset of this project I made the assumption, as I will do now, that research in EE can contribute to educational change. Situating the project explicitly in the historical context of Southern Africa and the groundswell for political, environmental and educational changes, my ideal is that it should do so. I found much in various interviews to support what appears to be a shared ideal, and literature evidence to support the conventional wisdom of my assumption that research can address such change. Academic researchers have long been regarded as having an essential role in educational reform; indeed, certainly in the USA and wider "[r]eform and change have become the prerogative of the professionals" (Popkewitz 1984:129). "The knowledge of science", Popkewitz observed, "is seen as providing for a social reconstruction of institutional life" (p.130). What follows should be read in the light of the assumption and ideal that research can and should contribute to change, although the assumption is examined more closely in the latter part of the paper.

Firstly, why the emphasis on change? The environment can be seen as a social construct referring to the interface between social (eg. economic, political) systems and natural systems (Fien 1990), and the widely recognised environmental crises, relating to our ways of thinking about and dealing with the biophysical world, as stimuli for environmental education, described by O'Donoghue (1992) as a focus for educational change. It was thus not surprising that most of the interviewees, members of the EE community, canvassed strongly for research that will bring about change. One person stated that "we need to remedy and improve our situation at this point in time" and that the right kind of research certainly had a role to play in that respect. Asked if social change was a function of research, another interviewee responded "What else is research for?"; research was "to inform people about their world so that they can use it in better processes". "We've got to constantly be pulling out of what we're doing better ways and ideas of doing it", said another. "[T]he improving of learning and teaching, the quality of education" and better ways of "managing resources and society" were some of the areas in which people wanted to see research making a meaningful difference. EE was described as "by nature ... research-based, theory-driven"

and "it will always be ... developing ... so it can't exist without research".

However, views about the nature of these developments, improvements or changes, and the ways in which they should be brought about, differed significantly. This is an important area to explore, but for now I will stay with the perceived need for educational and other changes and on the role of research in such processes. In this context, observations described in the introduction are reasons for concern, for they are indications of (an essential) **conservatism in the research enterprise**. It will be illustrated that there is a tension between aspects of conventional research and the nature of research styles which interviewees deemed appropriate for both changing circumstances and for contributing to change. Four topics discussed in the interviews, introduced by either me or the interviewee, highlighted this tension. They are the relevance of current research, its communication, research approaches and perceptions on who should be doing research.

2.1 Relevance of research

Many interviewees did not seem to think that formal research was fulfilling its promise or potential of bringing about 'change for the better'. There was the questionable value of years of costly academic study by individuals: one interviewee watched many academic researchers in his organisation, and thought that 'after 10, 12 years of study, from Honours to Doctorate', one could ask 'at the end of the day, "So what?"'. Most of the time 'the knowledge was there', he said, 'one knew more about something, but did that actually contribute to better management?' (Note: Single quotation marks here refer to direct translations of Afrikaans interviews.) Research was sometimes described as dealing with "irrelevant issues", "up there", whereas the need was for research that could be "implemented on the ground". The relevance of formal research was even less in the eyes of those who were seldom involved in it. One perception of academic research was of "people with theories and they go out and do funny little things that nobody else really understands, and ... you know, it's very much for themselves ... so I suppose anybody that's not involved in that sees it as sort of ... even unnecessary ...?" (The latter interviewee did personally value the formal project she had been involved in, but more for the process than for the end-product.)

2.2 Communication of research findings

"[T]he way in which we communicate research" was "ridiculous", said one researcher, for it was written in a specialised form inaccessible to all but those already in the know. Furthermore, she wished that the time "wasted" on thick reports and theses "sitting on shelves" could rather be used on publications which would be more widely read. The inaccessibility of academic research was a recurrent theme. I was struck by just how remote some non-academic interviewees perceived this body of knowledge when a development worker noted that non-academic research was a priority above academic research, for the former did not have access to the body of knowledge created by academic research, whereas the latter could draw on the knowledge existing in non-academic research. Both the physical and the conceptual access were problematic: one interviewee stressed that research should be implemented "right away", not hidden in "a thesis that is lying in Pretoria University, that you have to go through a lot of red tapes [sic] to get access to". Another recounted that it was more likely for him to come across reports on research in Zimbabwe outside of the country than within. The research by students of the University of Zimbabwe, for example, was not reaching the teacher colleges, "and when they have their own journals, they are in heavy languages, and impressive, just full of perhaps professional jargon, which ..

if they are not longer students, they are not likely to read". The style of research reports was described by another interviewee as "flat" or one-dimensional as opposed to more rounded or holistic. Research had been done in what were problem areas to her, but she found the academic papers written from a reductionistic approach worthless, for she wanted a 'fuller picture' of a situation. She also wondered whether academic researchers really wanted people to read their work, for they certainly did not present it in an "inviting" way. By excluding a wider audience, obscure research reports limit their possibility of bringing about change.

2.3 Research approaches

The reductionistic nature of much existing research in EE also featured in criticisms against certain research approaches. [Note: I use the latter term to refer to epistemologically-based approaches taken to research, such as the 'scientific method' approach, the descriptive case study approach or a participatory action research approach. Interviewees' references to "humanistic research", "(logical-) positivism", "empirical" or "developmental" research and "quantitative" and "qualitative methods" were all dealt with in this category when I perceived that they referred to neither research techniques nor [directly] to epistemologies.] Interviewees who based their own research on the scientific-method approach defended it (for they perceived that I was not following that approach) as 'imperfect, but nonetheless the best method we have available'. Other researchers were disillusioned by the scientific-method approach (which aims at an objective investigation of correlations between variables, by controlling some variables and measuring changes in others) in which they too had been schooled. They felt that it was not appropriate for research in EE, which was about people, practice and processes of change. One interviewee warned against this research approach becoming 'the driving force behind environmental education' and thought that 'the only people benefitting from [the] scientific [method] are the researchers themselves. Nobody benefits in the long term, not the children, not the cause, ... certainly not the teachers. ... In the long term it's the publication list of the researcher'. He believed that meaningful changes in the situation which was investigated, would not result from such research.

These critics, and others, deemed a "participatory" approach to research appropriate. For some it corresponded with their view of EE as a social process, for others it was the best way of gathering valid data and reaching research aims of addressing a problem. An interviewee with the latter perspective preferred methods "whereby those people [the participants] are informed". Having experienced the Zimbabwean situation, where international and local researchers had been 'doing research on teachers' for some time, he advised: "Work with them. They should see you ... respect their own thinking, what ... they say. If they are respected they will open up and tell you exactly their problems ... it takes time, and perhaps it's more expensive, but it gives you perhaps, what I can call qualitative also, answers. People will open up. It's a matter of time and how they see you." He added "teachers are ... adults, people like us. If they see you want to use them, they will think that 'OK, let us give them what they want and then go'".

The view of the researcher as the only valid contributor to the development of knowledge was questioned: "At times we tend to go to the people to extract some information and keep it as our own and say 'They don't understand the situation, we understand it'". Interviewees wanted to see a narrowing of the gap between researcher and what used to be regarded as research subjects. One of them thought it was a pity that "the gender analysis is always articulated

by elites like you" when "the very people who should be talking about gender is the ... rural community". [Since this interviewee was a man, we were equally distanced from the rural gender issue and the point went down well!] The point was that researchers talking about issues cannot make a difference to a situation they do not form part of. The research approach should "affirm dialogue" and participation, a consultative researcher should have the attitude of "a student wanting to learn from the situation", and the research should initiate a process which can carry on after the researcher withdraws.

The case study approach was regarded as useful in terms of the rich and detailed descriptions it afforded. Surveys could be appropriate elements of democratically-based policy research. Action research was seen by several interviewees as a particularly appropriate research approach in EE - it could engage with a practical problem during the research process itself and had much potential to bring about change. It also tended to have a participatory orientation which stressed empowerment of participants. (I do not imply that either action or participatory research were interpreted similarly by different interviewees.)

The emphasis on broader participation in the research process also came through in responses to the question of who should be doing research.

2.4 Who should do research?

Interviewees would like to see practitioners doing research: they were seen to be in the best position to do so, having "a feel" for what they are doing and being able to identify "the major knowledge gaps in their own fields". Some interviewees did not want to make a distinction between practitioners and researchers - "every person implementing a programme becomes a researcher as he gains information as he engages with the programme" was one opinion; another noted that "in everything we do theory and action ... must be merged with each other". Others advised collaborative relationships between practitioners and researchers, for various reasons: the practitioners may not have the skills or the time to do research, while researchers may not have ready access to situations they want to research if they are not working in those situation, particularly if people in such situations are unfamiliar with or adverse to researchers from outside. The professional researchers in such partnerships should preferably be local people, or at least Southern African, as opposed to the Northern European and American consultants currently working in Namibia and Zimbabwe, where a lack of local researchers was reported and attributed to historical factors. Several interviewees wanted the partnership between practitioner and researcher to be an enabling process for the former, an indication of the perceived need to spread the base of those involved in research, and to make research projects more than investigations, but educational processes in themselves.

Academic research was seen as exclusivist in more than one way. One interviewee noted that the "over-emphasis on academic research" meant that people thought this was the only kind of research expected of them and that they did not realise the contributions which non-academic research could make. This prevented them from sharing their non-formal research widely. Her observation was confirmed when another participant blamed the South African education system for an excessively academic focus and a negation of "what happens on the ground" - "'No, you don't have a B.Ed., we can't accept your research ... we can't consider your contribution'".

Another way in which formal or academic-style research seemed to exclude some

people from contributing to the development of knowledge through research was through the style of thinking which was deemed appropriate in such research. The interviewee who alerted me to this aspect was uncertain as to whether she could contribute to my research or articulate her views on EE, for example, in an appropriate manner, because she seldom reflected on such topics "in those terms".

I work in developmental education, but I never actually stop to think. What I think is what I live. ... Maybe some people think in words, some people think in pictures, ... people think in different ways. I haven't spent a lot of time trying to be academic about what we do! ... It doesn't mean that I don't have views, I have very ... I think strong views about things, but ... maybe I've never been asked to verbalise them!

-Research participant, Zimbabwe

A further point related to research design and to who research is best done by is that a reductionistic approach to research could be overcome by multi-disciplinary research teams working closely together. In environmental education it is clearly important for social and natural scientists to form such teams, as has been happening in projects initiated by the Namibian Ministry of Wildlife Conservation and Tourism.

To summarise, participants in this study held strong views about perceived needs for changes in the design of or approaches to formal research, in order to allow projects to inter alia address meaningful change. Yet, as was intimated in part 1 of the paper, and recounted by several interviewees, there is pressure on researchers to stay within the guidelines of what currently constitutes 'proper' research design. The forms which this pressure can take are discussed below.

3. Research Conventions

At this point a second assumption of this project needs to be noted, namely that social science and educational research are not quests for the truth, but social processes of constructing knowledge according to certain criteria. These criteria, the rules of formal research, legitimate the insights developed from research to count as 'knowledge'. Scientific communities are committed to certain lines of reasoning and premises for certifying knowledge. Being socially constructed, the rules of social science are however neither neutral nor undisputed. Social, political and epistemological assumptions shape and fashion the activities and outcomes of research (see eg. Popkewitz 1984:34-5 & pp.51-4; and Grundy 1977 on Habermas' framework of knowledge interests). Furthermore, "[t]he discourse of science contains different and sometimes conflicting assumptions about what constitute social facts par excellence and how people are to make sense out of ... their social world. The power of the underlying assumptions in science is that they do not appear as such but are contained in the different customs, conventions and findings of research" (p.35). Even researchers themselves can be oblivious to the role of such influences and assumptions in research design (see below).

3.1 The Role of Institutions

The existing rules of research are very powerful, for they are scientists' main title to validity of knowledge claims. They can become all-encompassing, as Freire and Giroux (1989:...) warned: "At its worst, the language of educational theory and practice is organized around a claim to authority that

is primarily procedural and technical". Research traditions at institutions perpetuate these canons, as illustrated by interviewees' accounts of how their research designs were determined by institutional factors. One participant, who had described "positivistic" research as "useless for environmental education", listed various reasons why she had based her project on just such an approach. At the time "the approaches that one has come to recognise as important to environmental education" were still very new, the "quantitative approach" was the acceptable one in the academic circles in which she worked, and "if I wanted to get my ... degree it was ... a good idea to use it". Another researcher explained how he had to "sell" his project to people who are "still dominated by natural scientist thinking". He designed it in a particular way because he had to "deal in the currency which [heads of research in various institutions] would understand".

Other 'institutions' noted for influencing research design were funding agencies. One interviewee described how researchers were sometimes constrained to use methods which they disliked due to the "horrendous" timetables of some projects; that "quantitative research" was more time- and cost-effective and that therefore, despite the fact that one's results depended on how much one has put into the research ("garbage in, garbage out"), they were often the methods of choice. "[A]t times the conclusions you give might not be as good as you ... wanted, because you were in a hurry. ... We know the donors ... they want the figures, they are interested in the figures .. how many millions ... have been distributed ... We are more interested in how the children understand it ..."

Several interviewees valued the participatory design of the project reported on here, and/or suggested ways in which it could be improved. It was thought, for example, that if I had conducted a survey-by-questionnaire and afterwards described my own framework developed in isolation, it would have been seen as another researcher setting herself up as an expert. This view indicates past experiences of such research, and indeed my literature survey has shown that research on priorities is usually conducted by soliciting expert opinion, either through questionnaire surveys or during panel discussions, with an emphasis on consensus among selected experts in a particular field (see for example Saayman *et al.* 1991). My research design includes open-ended discussions with a range of stakeholders on, *inter alia*, the design itself. As noted in part 1, this 'open' nature of the design bothered senior academics who evaluated the research proposal. Their objections indicated a concern that my project would not adhere to the boundaries and principles of 'rigorous' research. One of their questions - how I would be able to discern whether interviewees were telling the truth - reflected a view of research as probing for 'truth', and of the researcher who follows conventional criteria as being in possession of the tools which could get closer to that truth than anything else known to us.

In what could be termed the 'professionalisation' of knowledge, society has 'licensed' certain groups to produce knowledge; in this country the universities, other research institutes and bodies such as the Human Sciences Research Council. It was no wonder then that my interviews indicated that, with few exceptions, research activities are institutionalised. Institutions tend to be relatively conservative and resistant to change. It was perhaps for this reason that one interviewee thought that "institutionalised" (as opposed to "organic") environmental education "may become unproductive". He believed that while Rhodes University, with its Chair and Masters programme in Environmental Education, could lend academic credibility to EE, it could

also be counter-productive if it took a reified approach to research projects.

Popkewitz (1984) charted the course of university researchers, from a time when their inquiries were linked to public agitation, to a new position where they focus on informing policy-makers (see pp.113-4). In the late 1800's American social scientists' "reformist tendency to influence the masses" started to create "tensions" (p.115). These researchers found that "their incursion into public education had created strains within the business community and in the university" (p.115). By the early 1900's the earlier notion that the social scientist could combine both investigation and popular education, had been dropped. "Academic debates were to be internal to the professions, aired at professional organisation meetings and in scholarly writing" (p.115). These seem to be the very exclusivist practices that have been questioned by interviewees. Furthermore, "there was a belief that the practical emphasis betrayed the ideals of classical scholarship, a tension that still exists within the university" (p.116) and which was also referred to by interviewees.

The late 19th century was also the time when the idea of academic freedom assumed importance in the USA, "to reflect the argument that science was not a matter of opinion and belief but of research and investigation and that the institutions in which these efforts occurred would provide for the betterment of society as a whole" (Popkewitz 1984:118). Academic freedom does exist, but not to the extent that may be generally believed. Popkewitz noted the existence of "indirect means to limit 'radicalism'" (p.120) and that the pressure for conformity to certain research agendas today comes from university administrators. Who sets the research agendas? Popkewitz (1984) illustrates non-neutral relationships between universities, governments and business. Industry and corporate foundations have become vital in the reshaping of universities, particularly in the USA (Popkewitz 1984:123), but also wider (Wood 1992). These links are being ignored, Popkewitz argued: "the ideology of neutrality has been successfully internalized in the consciousness of our research communities" (p.125).

In the 'developing world' the national governments' and business' influences on research activities may be overshadowed by international interests. To quoted from an interview with a Zimbabwean researcher:

[A]gendas are set by external agencies, funding agencies ... this is very true. There is a form of ... academic and environmental neo-colonialism ... which ... is, I think obliquely at least, perhaps not always intentionally but I think sometimes intentionally ... it's still holding the real reigns of power, which is the setting of agendas and the controlling of research budgets, in the hands of the people that have the money, of course the people that have the money are by and large the European and North American states ...

A Namibian interviewee questioned the "Eurocentric" approach of existing research which he thought was due to the fact that those who had the resources (skills and money) to do so were commissioning and doing the research in ways which they preferred - ways which often appeared inappropriate for Namibia. His perceptions were that research aid was being used to manipulate the process of development in the country; the aid agencies were defining the priorities. If they are, they could also control the possibility of change being brought about by research, and the directions of such changes.

3.2 Intellectual 'Imperialism'

The reference to academic "neo-colonialism" also raises the issue of Western knowledge and reasoning being regarded as the highest forms of intellectual activity. Indeed, the research enterprise in its current form is an essentially Western concept, and some believe that it should not move from that position. Research supervisors are sometimes struck by some students' lack of personal interest in the actual content of their research, which could be related to past educational experiences that never merged with the personal lives of the learners. At other times I marvel when students show me fresh ways of looking at research findings. The notion of 'indigenous' or non-Western knowledge is laden with pitfalls and potential (McKinley *et al.* 1992, O'Donoghue and Clacherty 1993). Can academic research be developed via these hitherto unexplored ways of looking and doing?

Language can be an important means of preserving academic elitism (see eg. Phillipson 1992). In Southern Africa research needs to be reported in a language that is often not the researcher's own; furthermore, much emphasis is placed on the use of a certain technical style of this language in academic reports. This denies many access to the formal research process and others the possibility of excelling at it, as illustrated by the case of the poorly written thesis which failed to obtain a distinction.

Other aspects of the structure of the research thesis required of students need also to be examined. Some conventions can be traced to approaches to educational research that are no longer deemed appropriate by many. One such convention is to avoid the use of the first pronoun, which can be linked to the notion of the researcher as neutral, objective 'non-entity' in the research process. Another convention is a form of reporting which depicts the research process as having smoothly followed a pre-determined and neutral plan which almost inevitably resulted in the conclusions, presented in their turn as value-free.

To summarise so far, the paper has outlined some of the conventions which could prevent researchers and current non-researchers to do innovative, challenging research which are more appropriate for the current situation in Southern Africa - research that would inform and enable the urgent changes we all seem to want to see. These conventions are institutionalised through universities or the agendas of international aid agencies. Academic elitism and conservatism are implied in an adherence to the scientific-method approach as the only valid research approach, in an emphasis on certain linguistic and 'objective' reporting styles, poor dissemination channels, the setting of research agendas by non-local people and in resistance to participatory or practice-oriented research approaches.

4. The researcher and change

We have noted institutional constraints on research for change. However, it would be a serious oversight to exclude the researcher as a major obstructor in the process of change. Firstly, researchers often ignore the assumptions underlying the techniques they use (see eg. Dunne & Johnston 1992). At least two interviewees in this study regarded methods as neutral and only important in terms of the most time- and cost-effective ways of 'getting the job done'. One interviewee stated that "the method determines the outcomes". Popkewitz (1984:18) noted that "[t]echniques emerge from a theoretical position and therefore reflect values, beliefs, and dispositions towards the social world", thus "the choice of technique is a moral responsibility". He added "... the

stress on procedures of science leads many to consider only those questions and problems that conform to its procedures rather than to having methods and procedures respond to and develop from theoretical interests". Thus assumptions which give credit to only certain techniques, limit the scope for research. And, "[s]ince reflection, criticism and development become tied to the improvement of techniques, the root assumptions about the world embedded in scientific practices are not examined but are crystallized" (p.21).

Secondly, it was noted in part 2 of the paper that whereas many interviewees regarded social/educational/political/environmental changes as imperative, and saw a role for research in processes of change, their views of just what change entails, and how research can be involved, differed. For example, several interviewees seemed to see the researcher as the "change agent" which Popkewitz (1984:149) described as "tasked to identify the proper ... procedures to get participants to accept the call for change. Central to [this view of] change is the expert who defines the situation and manipulates the clients/groups to acquiesce in the predefined decision or path". Others saw the researcher as co-worker towards change, helping co-researchers to bring about improvements which they defined. The two views of educational change most apparent in the study thus far correspond to (1) a central 'develop-and-implement' approach and (2) a local problem-solving approach. Popkewitz (1984) regarded these models of change as underpinned by empirical-analytic and symbolic epistemologies respectively. It is imperative to note his argument that neither of these "styles of thought" have ever brought about change: they "... misappropriate those sciences in ways that enable social order and stability to become paramount" (p.130), so preventing the educational change evidently sought. Popkewitz claimed that most existing research studies simply contribute to "motion" within systems.

The views of a few research participants did however reflect a third approach to educational change. In this approach there was little reference to the direction of change or to particular views to which people had to come. Process rather than product was emphasised, for example detailed case studies of projects were valued, as well as "organic" rather than "institutionalised" projects, and it was noted that the "research style" was more important than the specific topics to be addressed. One important style was a theory-driven approach which looked for a "theoretical axe to grind". Reflection on the theoretical underpinnings of our conventions and practices was deemed crucial. Finally, the formal research enterprise was not seen as a tool to bring about change; research was indeed not strongly separated from EE projects per se, but it was emphasised that such projects have to be reflective by nature, so informing "better thinking and ways of doing".

This critical approach to research may provide an opening for change, as opposed to mere motion, if its goal is to demystify the patterns of knowledge and social conditions that restrict our practical activities (Popkewitz 1984:45, McKinley et al. 1992). Without critical reflection the conventions of formal research will ensure that the research process maintains the status quo - by limiting the kinds of people involved in the construction of knowledge, the kinds of knowledge deemed appropriate and valid, the kinds of interests served by the process, the kinds of research we do and the kinds of thoughts we have.

Towards Reflective Research

In becoming more critical of our research activities, some of the questions

we could ask are:

Why do I (or my student) want to do this research?

Should it be done by me, or by my student?

What are the epistemological assumptions underlying the research design?

To whom is the researcher accountable?

To whom are the findings accessible?

In whose interest will the research be?

We need to be creative and rigorous in rethinking the standards/criteria for academic research, its style, methods and dissemination.

"Contrary to prevailing belief, the potency of social science is not in the utility of its knowledge but in its ability to expand and to liberate the consciousness of people considering the possibilities of their human conditions" (Popkewitz 1984:7). The origin of the term re-search may lie in the view of "inquiry" as "a search for new metaphors for thinking about everyday affairs ... enabling people to conceive of social reality from different layers of interpretation which were not readily apparent in everyday life" (p.7). Ideally this project would in a small way expand the visions of a range of people about the process of researching and the ways in which we can go about it, towards what Freire and Giroux (1989:x) referred to as "the reconstruction of social imagination".

BIBLIOGRAPHY

See p.212