RESEARCH PRIORITIES FOR ENVIRONMENTAL EDUCATION IN SOUTHERN AFRICA: PRELIMINARY REPORT

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The world we have created today, as a result of our thinking thus far, has problems which cannot be solved by thinking the way we thought when we created them.   (Albert Einstein)

INTRODUCTION

In this preliminary research report I introduce initial interpretations of the results of a recently completed study on research priorities in southern Africa. The study has been sponsored by Murray & Roberts, Rhodes University and the HNRE (Human and Natural Resources in the Environment) Programme of the Human Sciences Research Council.

I approached the study from the perspective that environmental education is a process of social change, involving a diversity of educational responses to environmental issues which arise out of interactions between social and bio-physical systems and processes. Educational responses are shaped by changing social contexts. The context of this study involved global educational-epistemological[1] trends and recent political-economic developments in the southern African region.

In 1991 a desire to develop theoretical depth within environmental practices in the region led to the establishment of the Murray & Roberts Chair of Environmental Education at Rhodes University, South Africa.   This position was to aid the development of environmental education through post-graduate teaching and research in particular. It seemed appropriate to embark on a project to explore research priorities in environmental education within a context of and with a focus on social change.

The study was directed by a conviction that:

1.   current environmental problems warrant serious attention and concerted efforts to act on them;
2.   such problems have their roots in the patterns of thinking and doing (practices, theories, worldviews, institutions) which we as societies have developed over time,
3.   in order to deal with environmental problems, we thus need to develop new ways of thinking and doing and
4.   this calls for an innovative approach to the practices, theories and institutions of education and research.

AIM

The aim of the study was to investigate research priorities for environmental education in southern Africa, to clarify and contribute to the work of new and existing researchers in the field and to contribute to the decisions of research funders.

METHODOLOGY

The research was informed by current educational and social theory with post-structural/postmodern orientations. Key concepts include reflexivity[2] and social epistemology[3] and theorists whose work was particularly influential are Thomas Popkewitz[4], Ulrich Beck[5], Pierre Bourdieu[6] and Patti Lather[7]. Within the environmental education arena Robottom and Hart[8] and local colleagues O'Donoghue and Taylor[9,10] were important.

The research design was a participatory survey involving spiralling cycles[11] of data collection, interpretation, sharing and reflection.   Data collection techniques were semi-structured interviews, focus group discussions, workshops and document analysis; most of these had an interactive orientation.

The professional contexts of key interviewees are listed in Table 1.   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 which was gathered over a three year period, 1992-1994.

TABLE 1: Professional Contexts of Interviewees

Conservation agencies	14 Interviewees
Government environment departments	3
Government education departments	3
Environmental education centres	5
Technikons	1
Colleges of education	1
English universities	6
Afrikaans universities	2
University social science departments	5
University natural science departments	2
Social science institutes	1
Natural science institutes	2
Non-institutional educational resource development	4
Community-based/Development organisations	5
Funding agencies	2

Note: Some interviewees have been listed more than once, because their work encompassed more than one context.

RESULTS

On this study

Research participants' views on this study itself showed the diversity of viewpoints reflected by the findings in general. For example, whereas there was strong support for its participatory orientation amongst some, others rejected such a method as cumbersome, idealistic or lacking in rigour. Many participants supported the convention that research has an important role to play in our society and several of them indicated that this project could provide useful guidelines for research priorities. Some participants, however, interpreted the motivation for the study as judgemental, and others saw it as an attempt at institution building.

More importantly, several participants who supported the need for clarity on the topic of research priorities questioned whether a listing of priorities would be sufficient or appropriate. In dialogue with these and other colleagues the study moved from a list of priorities to a mapping of a shifting landscape of positions on and in environmental education, research and social change. Out of this landscape substantive issues and recommendations emerged.

On setting priorities: research topics, areas and methods

Many participants regarded a national/regional setting of priority **topics** for and **areas** of research as inappropriate, for such priorities were deemed context specific. Those who did list priority topics or areas did so from their own professional context and from their particular positions on research and environmental education. A list of such topics and areas would thus simply reflect the range of participants and opinions involved in this particular study.

There was strong support for the setting of research priorities by practitioners in their own contexts, but there was also a concern that the broader context (of either southern African development needs or bio-physical/"environmental" priorities) had to be taken into account. Several participants thought that "ethno-geographic" factors

would influence research priorities.

On priority **methods** for research, opinions ranged from the view that these were simply technical decisions, to a view that methods were important enough to "determine the outcome" of research. Among academics methodological choices were very much contested; the debate between positivist and post-positivist research traditions features some ideological differences and some professional territoriality. An important observation was that these contestations tended to lack depth and clarity.

There was a tendency to favour more "participatory" and action-based research methods. This trend was characterised by an inconsistent discourse, reflecting perhaps ambiguous commitments to change, tensions related to the desire to "democratise" research, and, again, a lack of clarity.

Many participants thought that a range of complementary methods should be used according to circumstances. Some added that the way in which methods are used is important. This point relates to an important consideration to emerge from the study, namely that there are certain **styles** of research that are particularly appropriate. These priority styles of research will be picked up below. Although there was a strong lobby for "product-oriented" research which could be "implemented", others saw priority styles as research which is "productive" but also "theory-driven", involving "analysis-in-action", conceptual clarification and the establishment of structures for dialogue and further action.

Mapping out positions on environmental education, research and change

As the above suggests, the study revealed a range of contradictory and contested perspectives. There were clusters of like perspectives, in which views on research were entwined with related views on (environmental) education and social change. These perspectives are mapped out here, but not as categories. Inconsistencies in interviewees' discourse reveal these perspectives as overlapping positions which are shifting over time in response to changing political economies and educational theories. There were also sufficient consistencies to identify similarities and some differences between these positions and internationally described positivist, interpretivist, critical and reflexive research traditions[12].

Research for Restoring Order

This first position has been constructed from the cluster of views expressed most frequently by those research participants from government education and conservation institutions, natural scientists and social researchers following positivist traditions. The metaphor comes from the view that society can and should be ordered according to laws similar to those perceived in 'nature', in this case towards the "wise use of natural resources"[13]. It is believed that this order will be achieved through "behaviour change" in various groups of others, engineered and managed by expert-driven intervention. Expertise on the kinds of behaviour change needed is derived by following certain technical procedures (research using "the scientific method"). Such expertise or knowledge defines what the message is that needs to be transferred (education). Education thus becomes a tool for the management of change towards the ideal of social order. Those who need to change their behaviour are viewed as by and large 'empty' of the appropriate knowledge, hence the frequently used metaphor *"raising levels* of awareness" . Educational research has the utilitarian function of perfecting the techniques of education, particularly communication with groups perceived as different from those who discover and transfer the messages.

This modernistic position on change, research and education, although very prevalent, is increasingly seen as (perhaps naively) arrogant. It has been rejected on the grounds of political (democratic) and scientific (post-Newtonian physics[14]) developments and the practical experience of years of awareness-raising campaigns and expert-driven development strategies failing to solve environmental issues.

Research for Resolving Practical Problems

This second position was most frequently taken by teachers and community workers at grassroots and management levels. In contrast to the expert-driven approach, it puts practitioners or "communities" of ordinary people in the centre, with a teacher/researcher/developer as "facilitator". There is a significant shift from the above position in the view that ordinary people have much to contribute. The role of environmental education is therefore to help learners develop innate potential and "discover what they know", and development is to "facilitate communities" to address their own "needs". Research will be useful if it solves (in some cases simply describes) the problems of

practitioners, preferably by or in collaboration with them, in order to utilise the 'special wisdom' of the practitioner. Theory or "theorising" is "elitist" and not as useful as "practical" research. Relevant change is the improvement of the current situation, not its transformation.

The limitations of this position lie in the strong distinction drawn between theory and practice and the tendency to look exclusively *within* the particular context for problems and solutions, often from an adopted 'neutral' stance. There is an absence of critical reflection which would expose hidden assumptions in practitioners' 'theories-of-action'[15] and overarching structural factors, both of which shape and limit practices.

Research for Reconstruction

Those who took this third position tended to work in 'progressive'[16] academic and development contexts with an explicit social justice orientation. In overt opposition to the expert-driven orientation, they saw research/education as processes through which the disadvantaged can be "empowered" in order to "shift" existing "hegemonies". The distinction between research and education (and theory and practice) is here less marked - research should be an educational process, and education should be informed by critical reflection. The need for "democratic" research and educational practices is stressed, but there is also an emphasis on the importance of "basic knowledge inputs", more so than in much of the international literature on participatory research and education for empowerment. This perspective overcomes the limitations of the 'practical-solutions' position by highlighting socio-political and economic structures, inequalities and injustices and the need to "reconstruct" them. Other than in the previous two positions, change is viewed from a perspective of radical ('root') transformation rather than reform within the status quo.

The limitations of this position for bringing about the desired transformation include the way in which concepts such as empowerment, "enlightenment" and "capacity-building" rely on a dualistic view of power and on (hidden) notions of privileged and utilitarian knowledge which share similar modernist assumptions with the first ('restoring-order') position.

'Reflexive research'

This emergent perspective is not a position in the landscape like the previous three. The tentative label used indicates an orientation that reflects on and critiques the positions outlined above, without the intention to establish another hegemony. This perspective appears instead to be a potential "transitionary" tool for transition. Research-and-environmental education is viewed as a single concept and useful research is to clarify and realise good environmental education. Education involves mediation between learning new information from an existing pool, 'un-learning' unproductive conventions and co-constructing emergent knowledge. Assumptions about directing change are more tentative than in the previous positions. There is a desire to mobilise capacity for change, drawing on encounters with issues, critical reflection and dialogue, in a context of action based on a shared agenda. Reflexivity in research implies the investigation of social and educational theories, including one's own, as shaping influences. Such an investigation takes place in the light of and through productive action, for "in the doing comes clarity". The conceptual theory-practice divide disappears, as does modernistic assumptions about the engineering or management of change.

These factors underpin a reflexive orientation's potential to strengthen productive educational research responses to the environmental crisis. In the light of this potential, reflexivity was chosen as the vantage point for this study, from which substantive issues were identified and recommendations constructed.

SUBSTANTIVE ISSUES

From the landscape of positions outlined above a number of themes emerged as substantive issues. These need consideration if research in/and environmental education is to provide the critical guidance many participants in this study expected from it.

A first issue is the **theory/practice divide** mentioned above. The discourse of many participants revealed a tendency to see theory and practice as separate but linked - the one ideally informing the other. Thus research is seen as separate from teaching, development work or other activities. The Research-Develop-Distribute-Adopt model for the development of teaching materials, curricula or development technologies is an example. So is the view that research should provide useful ideas to be implemented by managers or practitioners. This conceptual division gives rise to the research/development -

implementation/dissemination gap. The notion that theory and practice are separate can be replaced by an understanding that theories only manifest in actions and practice and that all actions and practice are manifestations of im- or explicit theories. The artificial separation or boundary between them in the discourse on research priorities, appears unproductive.

Another questionable conceptual boundary appeared in a second theme to emerge from the study, namely the prevalence of a '**discourse of difference'**. This label indicates an emphasis on differences between presumed homogenous groups of people, often accompanied by a desire to study these differences in order to develop better techniques of influencing groups of others. In Namibia the "Third World" or "black and poor" "sector" of society was seen as a research priority; South Africa was thought to have a "unique" cultural diversity and socio-economic circumstances which necessitated educational strategies designed for differences. This theme relates to an even more prevalent view to emerge from the study, of environmental education as' **education for others'**. In the 'change-for-restoring-order' perspective environmental education is to change the attitudes and behaviour of others based on the inputs of experts who themselves seem entirely exempt from changing. In a less overt way the notions of facilitating or empowering others follow a similar logic - the facilitator stands outside the situation in which change is to come about; the participatory action researcher works from a centre for the empowerment of those perceived to be on a periphery. Change was a concern and priority focus for research for many participants, but change as a noun referring to others and seldom a verb referring to the self! From a reflexive perspective the sharing of information and insights from those who have to those who do not have, is still valued, but education/research involves learning for learners AND teachers and researchers, and these roles are to be played by different parties in different instances.

Such a view of learning relates to an emerging view of knowledge (epistemology). **Knowledge as accumulation** is a modernist idea in which progress is almost exclusively seen as the addition of more information; the role of research is to discover or develop this new information and education is to 'deliver' it. Reflexivity in research involves a re - searching for meaning and better understanding through the critical exploration of existing patterns of thinking and doing and their

role in, eg., the environmental crisis. Such re-thinking might involve the deconstruction and/or revealing of conventional wisdoms such as structuralist educational theories and current understanding of science and scientific methods[17].

Shifting epistemologies have implications for ways of conceptualising, doing and evaluating research. In southern Africa this international trend is confluent with pressure to rethink **the nature of academic research**[18], in response to calls for greater access to tertiary education and for greater academic relevance in the African context. These calls have in the past raised concerns that 'africanising' academic research and making access for black students easier would lower academic standards; the view was also expressed that university-based research is an essentially western notion to which those wanting to do research, should subscribe.

However, a study of the discourse of local researchers participating in this study show clearly that there is indeed *a need to improve* rather than lower *intellectual standards*; it also appears imperative to develop ways of doing research which engage better with the issues of the day. Current styles of academic research have been found wanting by a large proportion of (academic and other) participants. Criticisms include the perceived "irrelevant", self-serving, poorly communicated and "reductionistic" nature of much research.

These considerations should inform research both in- and outside of formal institutions. It is to be expected, however, that suggested changes to research approaches will be rejected or maligned in several contexts. Such changes threaten to disturb existing power relations. Power is conventionally accorded to researchers on the basis of their application of technical procedures. There are well-established links between **knowledge production & power relations**. In this study they included the setting of research agendas by established academics as well as by foreign development aid agencies and agents, "those with the money and the skills". Some research participants linked the influence of the latter to "neo-colonialism" and international attempts to steer development in southern Africa, but the shaping of research styles by funders in general also emerged as an important consideration.

RECOMMENDED DIRECTIONS

The outcomes of this study on research priorities for environmental education in southern Africa have been constructed within a context which comprised regional and international political-economic and educational-epistemological trends, as well as the concerns of many of its participants that research should take cognisance of, and play a role in, social change towards sustainable living. Thus different perspectives on research, environmental education and change were mapped out and these and emerging themes were examined in terms of their potential to contribute to, reveal, limit, or mask the lack of, meaningful change.

On the basis of this construction and review the most productive directions are as follows:

First, it is inappropriate to identify priority methods, topics or even areas for research at a national or southern Africa level. It is more important for funders, practitioners and researchers (should they be different) to draw up shared research agendas *within a particular context*. The *broader arenas* of national development and social change should however frame such agenda-setting processes.

Priority *styles* for research in environmental education can be identified in the light of emerging trends. Such priority styles are -

* Research which is *theory-driven yet challenging to existing theory*, including its own, aimed at conceptual clarification and at revealing the possible limitations of past and current patterns of thinking and doing.

* *Action-oriented* research which involves productive processes and outcomes. Research which erases divisions between theory and practice is a priority, and researching within and learning from productive processes is more appropriate than evaluating outcomes or applying models.

* Research which establishes *an ongoing dialogue* around shared agendas to act on issues, is more appropriate than projects which aim to identify and refine techniques for the education of (exclusively) Others through message transfer, facilitation or empowerment. Research which exposes alleged boundaries (eg. between urban-rural, developed-underdeveloped, scientistic-indigenous, expert-other) is a priority when it

sets up a community of communication, rather than pathways to communicate the messages of experts to externally defined communities of 'others'.

Academic institutions should prepare new researchers for a professional world where it is increasingly important to re-conceptualise patterns of doing and thinking, rather than to apply well-established procedures efficiently. It would be a priority to encourage innovative research designs and styles, and in keeping with international trends, researching (within) own practice emerges as a productive style. The aim of such research would be for the researcher

* to *learn* (from that practice);

* to *reveal* (unproductive conventional wisdoms and theories); and

* to *improve* rather than prove (the value of) practice.

Researchers should share their learning from the reflexive doing in such a way that it adds to the dialogue of the day. Clear communication (but not necessarily in conventional academic style) and transparency are important, as is a critical reflection on the part of researchers on their research questions, aims, methodology and conclusions. Reflection on the assumptions of the research process itself is truly scientific, for it extends the cautious attitude towards scientific results, to its methodological foundations. Rather than being nihilistic or negative, a questioning orientation towards knowledge production expands possibilities and can help us to move beyond the limitations of much modernistic thinking, at a time when such a move appears particularly important.

Critical reflection on this study, for example its participatory orientation, and a more in-depth description and interpretation of its results, are to form the topics of further communications.

NOTES

1. *Epistemological* refers to the social rules that shape the development of what counts as legitimate knowledge. See Fairclough, N. 1992. *Discourse and Social Change.* Polity Press, Cambridge.

2. *Reflexivity* – see Beck, 1992 (5) and O'Donoghue, 1993 (9) and note that I use the term to refer to social rather than individual processes of reflection.

3. *Social epistemology* – see Popkewitz, T.S. 1991. *A political sociology of educational reform.* Teacher College Press, New York.

4. Popkewitz, T.S. 1984. *Paradigm and Ideology in Educational Research. The Social Functions of the Intellectual.* Falmer Press, London.
   &
   Popkewitz, 1991. (See 3.)

5. Beck, U. 1992. *Risk Society. Towards a New Modernity.* Sage Press, London.

6. Jenkins, R. 1992. *Pierre Bourdieu.* Routledge, London.

7. Lather, P. 1991. *Feminist Research in Education: Within/Against.* Deakin University Press, Deakin University, Geelong, Victoria.
   and
   Lather, P. 1986. Research as praxis. *Harvard Educational Review,* 56(3), 257-277.

8. Robottom, I. & Hart, P. 1993. Towards a meta-research agenda in science and environmental education. *International Journal of Science Education,* 15(5), 591-605.

9. O'Donoghue, R. 1993. Clarifying environmental education: A search for CLEAR ACTION in southern Africa. *Southern African Journal of Environmental Education,* 13, 28-38.

10. Taylor, J., O'Donoghue, R. & Clacherty, A. 1993. A critique of the proposed Council for the Environment National Core Syllabus for Environmental Education in South Africa. *Southern African Journal of Environmental Education,* 13, 39-44.

11. Rowan, J. A dialectical approach to research. Chapter 9 In Reason, P. & Rowan, J. (Eds) 1981. *Human Inquiry. A Sourcebook for New Paradigm Research.* John Wiley & Sons: New York.

12. See Goodman, J. 1992. Theoretical and practical considerations for school-based research in a post-positivist era. In *Qualitative Studies in Education,* 5(2), 117-133.

13. Double inverted commas indicate quotes from interview/workshop transcripts.

14. See Doll, W.E. 1989. Foundations for a post-modern curriculum. *Journal of Curriculum Studies,* 21(3), 243-253.

15. See Robinson, V. 1992. Why doesn't educational research solve educational problems? *Educational Philosophy and Theory,* 24(2), 8-28.

16. In the southern African and particularly South African context the term *progressive* has come to denote 'avant-garde' orientations and practices in distinct pursuit of political and other forms of democratisation.

17. For an example of a critique of structuralist education theory, see Kincheloe, J.K. & Steinberg, S.R. 1993. *Harvard Educational Review,* 63(3), 296-320. For emerging views of science, see Beck, 1992 (5 above) and on scientific methods Lather, 1991 (7).

18. The term *academic research* refers here specifically to research within formal educational institutions.