CLARIFYING ENVIRONMENTAL EDUCATION: A SEARCH FOR CLEAR ACTION IN SOUTHERN AFRICA.

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Our thoughts and actions have a way of following where our words have led us.

ABSTRACT

This research examines bow environmental education bas been conceived and enacted within the same orientations that bave brought on many of the environmental issues that confront us in southern Africa today. It questions prevailing modernist positions which have assumed that providing 'nature experiences' and communicating 'conservation messages' will foster the change necessary to resolve environmental concerns. Local examples are used to reveal flaws in past strategies of rational intervention before further examples are used to suggest revised orientations. 'CLEAR' and 'ACTION' are then used as acronyms to clarify enhanced approaches that are emerging to address the challenges of the next decade. To meet these challenges, rational intervention strategies might well be displaced by interactive classroom and community orientations which set out to co-construct local agendas of issues for reflexive social processes of change.

INTRODUCTION

After nearly a decade of work on school and community environmental education programmes, I emerged from a particularly intensive period of co-operative resource development conscious of a series of recurring anomalies.

> Environmental education workshops tend to be prefaced by inconclusive attempts to clarify the concept and scope of the environmental education whereas conservation gatherings usually call for more research and intensified school and community environmental awareness[1] programmes. Despite the apparent 'lack of clarity' amongst educators, the 'blind faith' of conservation scientists and increasing concern about conflicting approaches to environmental education, the dedication and solidarity of people working in the field is admirable.

With these interacting anomalies beginning to occupy my attention, I had the opportunity to undertake a short project to clarify aspects of environmental education in southern Africa. This took the form a visit to the Eco-Ed conference in Toronto to interact with world trends and a two month period during which I was able to visit and make contact with many prominent environmental education initiatives in southern Africa.

The research process took the form of consultations, a review of macro social trends, a survey of case studies and direct contact with a sample of prevailing approaches to environmental education. Its purpose was to clarify aspects of environmental education, to establish priorities

and to inform co-operative resource development projects. The research was centred on identifying historical trends, describing prevailing approaches within these and examining some of the assumptions that have underpinned our environmental education endeavours.

This work has revealed some challenging anomalies which, along with examples derived from field observations and discussions with local projects, are explored in this paper. Two recent acronym frameworks, CLEAR and ACTION, are used to illuminate trends towards community and school action research. Finally, revised orientations already apparent in mass media, school curriculum and community contexts are briefly explored before key conceptual issues are considered against trends in social theory.

An opening assumption of the project was that long-term success in our education activities will be dependent on the consistency of the ideas behind what we do. These ideas are likely to be more significant than compelling features which might have first attracted us to environmental education. It will thus be our capacity to reveal the thinking behind what we do, and to change our approaches in light of any new understanding, that will contribute to success in environmental education.

A dawning realisation, which gave sharper focus to many issues, was that the driving assumptions within our current approaches to environmental education have been drawn from the same modernist orientations that bave brought on the world environmental crisis which we are attempting to rectify.

MODERNISM AND WORLD TRENDS

Modernism, a sustained trend of progress and cultural change that followed the Age of Enlightenment, is described by Stout (1991:4) as:

> the expression of the progressive age of the 20th century; a **functionalist** outlook that champions western models of intellectual, political and social 'advance' through 'rational' scientific and technological breakthroughs for the development of both the developed and the developing world.

This macro expression of the way modern societies see the world is interdependent within processes of development and techno-scientific progress which brought on a succession of environmental crises in the latter part of this century. One global response to these issues has been the defining of environmental education through a series of landmark conferences, notably the 1977 Tbilisi Declaration revisited at the Moscow Conference in 1987 (UNESCO 1988) and the 1980 IUCN World Conservation Strategy, revised in 1991 for the Earth Summit (IUCN 1980, 1991).

With schooling itself being a major reform within modernism (Popkewitz 1991) one might have expected environmental education to be conceptualised as a process of change that is transformative of schooling itself, and through this, the features of modern progress that threaten the quality of life of human society. The concept of environmental education has, however, seldom been allowed to aspired to these heights. It has in the main been conceptualised as little more than a vital enhancing 'approach', that has been undertaken within narrow orientations with features that have precipitated many of the environmental dilemmas that confront society today.

Ironically, therefore, throughout the shifting tide of events that have given rise to the modern concept of environmental education (Irwin 1993), the idea has been enacted within the prevailing orientations of modernism which have driven modern progress to a point of global environmental catastrophe. The significance of this is apparent when one looks at broad trends in the way environmental education has come to be enacted in South Africa.

THE HISTORICAL ENACTMENT OF ENVIRONMENTAL EDUCATION IN SOUTH AFRICA

The need for environmental education emerged in southern Africa because both Modernism and its delinquent cousin Apartheid have given rise to unique and complex environmental problems (Ramphele 1991).

In response to these emerging issues, environmental education has come to be defined as:

> An ongoing process leading to the development of a southern African population that is aware of, and concerned about the total human environment and its associated problems, and which has the knowledge, attitudes, motivations, commitment and skills to work both individually and together towards the solution of current problems and the prevention of new ones (Department of Environment Affairs 1989)

This definition leaves little space for either the critical transformation of schooling or for the reflexive reconstruction of modernism itself. One is left with a broad, neutral vacuum that has been reoccupied by prevailing modernist and utopian ideals of schooling, communication and community development that have little transformative potential.

This is to be seen in historical trends which reveal that for the past decade most conservation and environmental education activities have involved extension programmes, campaigns of 'targeted' messages and nature-centred 'experiential' and 'awareness' programmes for and in schools. These communication and nature experience approaches have been built around the notions of 'getting the conservation message across, creating awareness, clarifying values' and their ultimate goal has been to 'change behaviour.' They have been illuminated by a wide range of prevailing education ideas and are evident in a proliferation of extension strategies, conservation campaigns, development programmes, environmental education centres and attempts at curriculum reform.

Key features of these orientations have been:

> fostering awareness by communicating information *about* environmental issues ('hard facts');

> providing experiential learning processes *in* the environment ('heads and hearts'); and, through these,

> facilitating change *for* the environment.

These communication and experiential approaches are similar to trends elsewhere that have been characterised by:

> technicist and structural functionalist orientations which have led to environmental education being seen as *rational processes of intervention* to modify behaviour

> the communication of conservation *messages to defined target groups* to get new meanings across to

change awareness; and

experiential encounters where nature presents a reality that fosters heightened awareness, values clarification and behaviour change.

Key features of these interlinked positions and many of their assumptions have been overturned by research on social change (Popkewitz 1984:138), enhanced approaches to communication (Tomaselli & Shepperson 1991) and notions of how people socially construct the way they see the world (Berger & Luckmann 1967). The doubtful assumption that change is a rational process which can be caused by information and experiential interventions has, however, remained a cornerstone of prevailing approaches to environmental education.

These anomalies may account for much of the conceptual confusion and an apparent lack of success over the last decade.

Comment

Although 'mass media messages' have been successful for some marketing and public relations initiatives, the idea of message communication to cause behaviour change is questionable as a strategy of education. Similarly, the compelling notion of naturalistic awareness enhancement and change through 'experiential encounters,' a highly valued feature of wildlife education at field centres, is doubtful as a teaching and learning strategy to foster environmental change.

Both orientations have inconsistencies in their underlying assumptions and research support has been scant, methodologically weak and inconclusive. Productive environmental education outcomes of these orientations might, at best, be said to have occurred despite, rather than because of, the styles of communication and programme design. More recently, a focus on awareness and values alone, the only factors considered to be measurable, has been no more successful.

The central flaw in these forms of intervention, for all their good intentions, is that they have an untenable social engineering ideology coupled with simplistic notions of teaching and learning. These, quite simply, cannot accommodate the realities of how people come to socially construct and to change the way they see the world.

It is not surprising, therefore, that initial audience / participant reactions, frequently seen as indicators of success, do not often amount to much. This has been shown time and again in campaigns that have only achieved a superficial delusion of success. Similarly youth intoxicated with a doctrine of the wonders of nature, are more likely to become seekers of an aesthetic

hyper-reality[2] than investigative solvers of local environmental problems.

A possible exception within these broad trends has been sustained agricultural extension. Here some significant 'technology transfer' has been established by empirical studies but structuralist explanations that attribute this to features of programme design and implementation have been naive and untenable.

These questionable assumptions and the weak orientations of 'top-down message intervention' and well intentioned 'nature experience' approaches to environmental education are apparent in local examples.

EXAMPLES OF MESSAGE COMMUNICATION AND NATURE EXPERIENCE APPROACHES

Background

Faced with the drought and declining water quality there has been considerable public attention on the Dusi River in Pietermaritzburg. Its green banks belie its status as one of the most polluted rivers in Africa. Grey-brown trickling water conceals the diseases it carries to rural populations and a peaceful patchwork of rural homes masks the area as a battle-front for some of the most protracted sectarian violence and social upheaval of this century. Other parts of the river landscape bear the scars of apartheid and uncontrolled economic growth that has characterised much of the socio-economic history of southern Africa.

Awareness communication

To educate the public and to foster awareness, conservationists and environmental groups have centred their efforts on trying to get the message of pollution and disease across using everything from dramatic newspaper and television (50/50) reports to 'green-group' protests during the run-up to the famous Dusi Canoe Marathon. Parallel with these mass media attempts have been extension campaigns on health and litter awareness with numerous litter clean-up days. We have now reached a state of message awareness where almost everyone knows that the Dusi is an aberration. Little has, however, been done by communities, usually defined on racial lines, who are apparently aware of the 'hard-facts,' having been the target groups of the messages of the last decade.

Nature awareness experiences

By contrast, proponents of holistic environmental education have conducted nature walks and water studies in both pristine streams of local natural areas and in the river itself. This valuable fieldwork, rich with encounters in nature and with environmental problems, is often followed by reflective meditations during 'solitaire'

experiences when participants sit alone in the wilderness, close to the wonders of nature, to reflect on themselves and the state of the world (Fourie *et al.* 1990). During such an activity does the child-in-nature experience a 'washing over and a cleansing' that awakens a new awareness in the mind? Or, are the misguided good intentions of the programme design masking a doubtful form of environmental indoctrination to change 'heads and hearts?'

Comment

In both of these cases I have drawn on generalised trends and features within prevailing approaches to environmental education. It would otherwise be difficult to illuminate underlying flaws within a conventional wisdom of functional intervention. This unfortunate desire to modify awareness and to foster values change, often from the outside, is perpetuating 'message communication' and 'wildlife experiences' as the cornerstones of environmental education.

In many situations where significant teaching, learning and change are apparent, interventionist ideologies and structuralist rhetoric tend to obscure significant relationships and events that might inform better approaches. Tragically, where a move away from these approaches has been apparent, change has often been cosmetic. Usually the language has been modified (eg. target groups to participants or communities), but in reality the same old ideological models have been picked up, dusted off and applied to another 'top-down' intervention.

I now propose to contrast these approaches with emerging alternatives by sketching trends towards community forum approaches and school fieldwork centred on action research and community problem solving.

THE EMERGENCE OF ENHANCED APPROACHES

Background

Over the same ten year period, where conservation messages and wildlife experiences have dominated the environmental education landscape, there has been some progress in clarifying better alternatives. Much of this has involved a determined seeking of more relevant approaches by working with people at a local level.

Against the earlier narrative of 'messages' and 'wildlife experiences' in the Dusi Valley there are emergent and co-existing alternative narratives of community forums and action research.

From messages to forums and community action research

Within the Dusi valley, and other catchments in the Natal Midlands, people are building peculiar air-raid-like concrete, submarine-shaped structures that have come to be known as 'Phungulutho' Toilets.' These toilets stop human faecal bacteria entering the water, have become a small business and have improved health on a wide scale. They are not overtly [Ed.] part of communications / extension schemes to facilitate technology transfer or an offshoot of experiential reflections in the wilds.

They have, however, arisen out of the creative energy of a researcher from the Institute of Natural Resources working with local people on the important issue of health and sanitation. The toilets have now proliferated through community problem solving structures, with skills training, to foster small business development. Much of this is being done through community forums linked to development support groups or nature reserve neighbour programmes.

Exploring some of the successes, failures and conceptual features of these social processes of change would be a paper in itself. The broad overview above is simply provided to develop some of the features of enhanced approaches to environmental education.

These approaches have turned things around so that a 'messages' and 'target group' mentality might be displaced by the notion of 'participants' communicating to 'make meaning' within democratic forum structures. Here the idea is to build the capacities of participants to solve local problems with the most appropriate skills and resources that can be mobilised at a local level. Through this local groups are, hopefully, able to co-construct the conceptual, technical and social structures and capacities to resolve environmental issues.

From giving messages and experiences to giving away the tools

The final example contrasts with the tradition of scientists taking water samples which are analysed at a central laboratory before a communications department passes on the results through media campaigns. The idea of these campaigns is usually to create awareness and to get public support through giving people what they need to know through messages that they can understand.

Project WATER is a GREEN (Global Rivers Environmental Education Network) partnership programme involving Umgeni Water, Natal Parks Board, Wildlife Society and various teacher groups. Through it school children and community action groups test and monitor local water supplies and rivers. Using simple low-cost tools, these groups can, in a meaningful and scientifically valid way, test water quality and take action to do something about the problems that confront their communities. This can involve networking with other

groups, lobbying local administrative structures for change, building better toilets, health education and wetland or catchment rehabilitation programmes.

Comment

These two sketches, in contrast to the former narrative of messages and wildlife experiences, are compelling examples of a potential refocusing and maturing of environment and development education. These enhanced approaches are, of course, 'message and experience' laden so one is not looking at a situation of 'throwing the baby out with the bath water.' One does, however, have to overturn the murky underpinnings and attendant misconceptions of messages / target groups and wildlife experience ideologies within many current approaches to environmental education.

SOME IMPLICATIONS OF ENHANCED ORIENTATIONS

Mass media messages

The mass media as a source of challenging narratives is alive and well but its use as a means of rational social engineering for the environment is dubious and will, hopefully, fall away. The mass media will thus diminish as a tool for communicating the messages of the state and capital institutions, becoming a voice that tells stories about what is happening. Esterhuysen (1992) proposes dialogic approaches as an alternative to a targeted monologue. The idea of dialogic approaches is to tell the story of what people are doing and experiencing so as to foster debate and to provide models of possibilities. Bardwell (1992) also suggests that messages, particularly those with a 'doom and gloom' orientation, are unlikely to be as useful as positive as challenging stories of what is and can be done to solve problems.

Awareness centres

The field centre, which has become a place of experiential awareness and indoctrination for the environment, might well become a 'ghost town,' haunted by the misconceptions and myths upon which it was created unless it is transformed into a centre of community meaning making and action. This will mean that it becomes a place where people meet to seek clarity on environmental issues, a place that resources communities with the ideas and tools to solve environmental problems and a place that trains and supports people in these endeavours. A characterising feature of these centres should continue to be structured fieldwork where the 'hands-on' encounter is a key experience for participants to reconstruct their world view. This will enable the hyper-reality of a world view socially constructed from television images and urban experiences to be challenged and enriched through interactions in nature.

Many education centres have been moving towards these orientations for some time, whilst others may become monuments to our zeal for nature to solve environmental problems by making people aware through experiential encounters which change their 'heads and hearts.'

Another important trend is that many conservation bodies can no longer afford to staff centres with environmental education professionals. This has meant that teachers who continue to use these centres have to plan and conduct their own fieldwork programmes. The enforced change has been lamented by many as a retrogressive step but the debate has revealed the untenable futility of environmental education as a process of 'moulding young minds' in the wilds.

Comment

Modernist / apartheid notions of experiential intervention and targeted messages are alive and well with prevailing political economies (institutional policies and funding) still supporting information communication and nature centres to cause awareness and change. Unfortunately, potentially more tenable alternatives often appear confused or complex. Clarifying these issues and seeking practical alternatives is thus an arduous and challenging process fraught with competing positions, vested interests, egos and complex language.

The rhetoric of academic debate has also contribute little illumination. It has, more often than not, tended t foster even greater confusion with the notion tha 'everything goes and anything is ok' because eac education situation is unique.

Personal experience of working through these issues nature reserves, curriculum projects and classrooms h provided some clarity on an enhanced orientation. Th is to be found where environment and developme education processes give rise to agendas for 'CLEA ACTION.' At the risk of oversimplification, I will fi spell out some CLEAR guiding principles to modify a enhance features of the rational intervention and nat experience models of the past. This is followed ACTION, an example of a participatory investiga framework to foster environmental problem solving : local level.

CLARIFYING CLEAR ACTION

Together, 'CLEAR' and 'ACTION' are acronym clarify features of a widening range of structures processes that are likely to be more productive thar 'top-down,' messages and wildlife experiences of past. They are useful for viewing the school community of learners and for planning fieldwor

were primarily constructed with practitioners working in conservation and community development situations. The idea of communities interacting within socio-ecological frames of reference (eg. catchment, biosphere. globe) is likely to be more useful than the categorisations in terms of race and language that have characterised social life in South Africa.

The idea of 'CLEAR Principles' (Jacobsz 1992) for environment and development education was constructed through contact with field centres and development projects throughout southern Africa. CLEAR is an open framework intended to enable development and environmental education initiatives, both inside and outside the classroom, to get to grips with critical features of participant-centred approaches to education.

The CLEAR Principles

The 'CLEAR' acronym attempts to capture, through key words, some of the critical factors that make up a developing environment that is likely to foster empowerment and change.

Community

Meaningful communication needs a situation of sharing and trust - a sense of community. This does not simply exist but has to be co-constructed through participation that gives voice to relevant needs, empowers people to make choices and establishes the credibility of supporting partners. Another key feature can be community structures to support conflict resolution and to mediate disputes. Central to this are democratic and representative forum structures and a sense of ownership and communal progress towards a better quality of life and more sustainable resource utilisation options. Community needs analysis strategies are likely to be less successful than approaches centred on local opportunities.

Learning

Meaningful learning needs a common purpose, an action orientation with 'hands-on' encounters and reflexive critical processes that have the potential to foster change. It should be life-long, appropriate and enable developing environments where people engage in 'inside' discursive meaning making as well as draw on 'outside' ideas, skills and training services to solve local problems. Through these democratic structures and processes people will, hopefully, construct the conceptual, technical and social skills for environmental management and problem solving.

Environment

Four interacting factors are needed to frame a suitable conception of the environment:

* *Political*
  Every action and decision has political implications, where politics is seen in its widest sense as power and decision making processes within international, national and civic structures.

* *Economic*
  Economic realities are decisive in any environment: Unemployment and poverty promote as much environmental destruction as monopolies and uncontrolled growth.

* *Social*
  The organisation of social space and relationships between people are key environmental considerations that influence economic, political and biophysical quality.

* *Bio-physical*
  Earth resources, ecosystems and life-support processes underpin and are influenced by all of the other key environmental factors.

All of these contribute to a conception of the environment as *a socio-ecological phenomenon which presents as a physical reality and is manifest within diverse socially constructed world views. These vary in terms of scale and context.*

Active awareness

The conceptual, technical and social capacity to foster change necessitates a sense of relevance that grows through positive attitudes / awareness that is co-constructed through clarifying encounters and actions rather than simply received as messages from 'outside,' or manipulated through contrived simulations.

Resources

Sustained and meaningful change needs access to, and the local mobilisation and grounded functioning of the necessary human and physical resources.
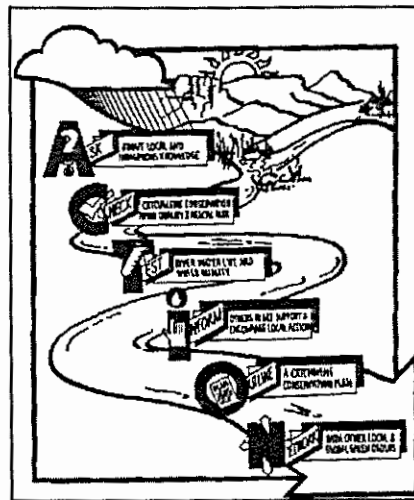
CLEAR suggests that environment and development education is much more than messages about problems and awareness experiences in nature. It sketches a picture of interdependent processes of social reconstruction through *community*-centred *learning* actions in the *environment*, with the tools to foster *active awareness* and the mobilisation of *resources* to promote change in diverse contexts of empowered decision making and choice. Much of this clarifies, broadens and enhances existing approaches to environmental education in both formal education and community development contexts.

CLEAR thus provides ideas for fuller conceptions of environment and development education, framing what might be necessary and how we may best go about it. Although better conceived, it is likely to be of little value unless it can be used to frame a relevant local agenda of issues and the necessary enabling structures and processes for change within community and school contexts.

To illustrate some of the changing orientations that might be necessary I will now look at key features of 'ACTION;' an example of a framework for fieldwork by schools, youth groups and community action groups.

An ACTION framework for fieldwork

The 'ACTION' framework for water quality fieldwork is a practical programme structure that was developed in South Africa as part of an international water quality monitoring project with GREEN, the Global Rivers Environmental Education Network. It attempts to map some of the key enabling features for an action research and community problem solving process by either a school or a community action group.

It is important not to see this as a fixed routine or a recipe but rather as an example for clarifying similar enabling frameworks for better approaches.

By asking others and talking about local issues to start with, much of the conventional wisdom is mobilised and a cohesive group with creative potential and skills can start to take shape.

Opening ideas usually need to be grounded in a local situation. This can be done through fieldwork with supporting check-lists which can give further form and focus to an investigation.

A battery of 'hands-on tools' is then applied to test, isolate and clarify water quality problems.

The phrase 'report, get support and encourage action' provides an open framework for participants to work out who to contact and what to do.

The idea of outlining a plan of action is supported with 'tools for action.' These may be found or developed locally or can even be written with teachers and local conservation specialists. These 'tools for action' may range from cures for dehydration to better toilets and revegetation guides.

The potential of child-to-child report-back sessions, conferencing and computer networking with other projects around the world (GREEN) is of more than novelty value. These introduce participants to democratic communication processes and to new technologies which may soon be an everyday reality.

ACTION is simply an example of an enabling framework for fieldwork that was developed with teachers working on water quality issues. What has been learned is currently being applied to many other fieldwork topics and environmental issues.

Comment

The CLEAR Principles and the ACTION example of a framework for fieldwork allude to environment and development education involving much more than messages and experiences. They point to the need for a refocusing of intervention strategies, suggesting that we need to support the structures and 'tools' for environmental problem solving among participants at a local level rather than continue concentrating our efforts on awareness through external messages and wildlife experiences.

These clarifications have implications for:

* field centres;
* the school curriculum; and
* community development contexts.

POSSIBLE CHANGING ORIENTATIONS

There will be considerable diversity within environment and development education initiatives as they are influenced by local history, environmental tensions and widening perspectives like, for example, peace education, human rights education, technology education and vocational education. To conclude this review I will sketch some of the trends that are already appearing and allude to other possibilities that might be productive.

Field centres

Most field centres are struggling to meet these challenges, although some have been trying to operate as models of alternative technology, and lifestyle choices, that have less impact on the environment. Many centres are broadening their orientations to function as resource centres producing education materials with, and for, local schools (Taylor 1989), and a few have gone as far as trying to meet other local needs with skills training for small business development and adult literacy. Other centres are supporting teachers in curriculum development initiatives (Levy 1992). Many are also enhancing their all important function as nature areas or urban environments for hands-on encounters. This involves introducing groups to 'tools' for local enquiry and supporting them to investigate and solve local problems. All of these are productive directions but the challenge of achieving both greater relevance and clarity of purpose has hardly begun.

Curriculum

Environmental education and the formal education curriculum is currently being investigated by an EEASA working group (Clacherty 1993). This is an important initiative because the proposal for a science, technology and vocational focus to curriculum renewal (Department of National Education 1992) has overlooked the White Paper on Environmental Education (Department of Environment Affairs 1989). The dilemmas of the developing environment of southern African must have a key place on any agenda for curriculum change. Professional processes of curriculum reform should include classroom action research (Robottom 1987, 1991) and also involve parents, employers and even pupils as participants. For this process, Baczala (1992) and McNerney (1992) offer useful tools for 'environmental auditing' within curriculum contexts. These cover an environmental education policy, the curriculum and resource use pattern in schools.

These developments are likely to establish environmental issues as a key agenda in formal education, thus firmly demolishing the myth that environmental education is something that is done by conservation specialists through experiential encounters at centres in wild areas.

Developing communities

Another major challenge is a broadening of the scope of prevailing environmental education actions into the development arena. Development is a modernist notion that has a long history of failed 'centre to periphery' strategies. Its progressive response to environmental issues over the last decade, and a recent switch to 'grass-root' orientations, has produced a conceptual battlefield shrouded with rhetoric and rife with vested interests. CLEAR is an open framework for approaching environmental issues within 'school-in-community' contexts. This has led to environmental issues being addressed within the notion of environment and development education (EDE, Barrett & van der Merwe 1993) and through processes of 'action research and community problem solving' (Wals 1992). Another curriculum and community initiative concerned with appropriate technology and local problem solving is 'Education with Production' (Van Rensburg 1990).

Field centres, school curricula and development approaches all complement each other and overlap in numerous ways. This makes it difficult to continue dividing environmental education into distinct categories within formal, non-formal and informal education.

DISCUSSION

The historical influences of modernism, intertwined with apartheid, appear to have contributed to environmental education being centred on 'hard-facts, heads and hearts' within a predominance of 'message communication' and 'nature experience' strategies. Weaknesses in these orientations appear to he linked to technicist and structural functionalist assumptions that environment and development education are intervention processes that can be managed, infused / implemented and evaluated.

This error is apparent in both modernist and anti-modernist assumptions which hold that change must be enacted through rational processes of reconstructive intervention. This is true for 'top-down' initiatives and for 'grass-root' facilitatory approaches, both of which are seen to be emancipatory towards utopian notions of sustainable living. This appears to have led to the recent modernist logical assumption that environment and development education must be a rational process to achieve sustainable development. Jickling (1991) explores some dilemmas in attempting to enact this orientation as 'education,' in his challenging and entertaining paper entitled, "Why I don't want my children educated for sustainable development."

Beck (1992) provides a unique critique of modernism which may resolve many issues within current approaches to environment and development education. To refute the notion of a paradigm[4] shift to an holistic

'post-modern' utopia (Capra 1982) Beck illustrates that enlightenment is still with us in the 'post-enlightenment' age of modernism. He also demonstrates that 'reflexive modernisation' is already apparent within reconstructive social processes redressing problems and reducing 'uncertainty' within our 'Risk Society.' Pierre Bourdieu (Robbins 1992) also treats post-modernism as a useful clarifying ethos and mode of critique rather than a switching pathway of utopian escapism. Nel (1993) complements these positions with insightful explorations of aspects of post-modern critique.

My purpose in citing these ideas has not been to spell out the features of a revised framework for environmental education but merely to suggest some authors and orientations that are likely to contribute to a clarifying process to enhance our endeavours.

TOWARDS AN ENABLING SYNTHESIS

Historically, environmental education has embodied 'risk,' 'uncertainty' and the potential to construct agendas of issues within reflexive social processes of evaluation and change. It has, however, tended to be enacted as a series of narrow interventions[5] to communicate 'hard-facts' or to experientially engineer[6] 'heads and hearts. Our environmental education efforts might best have been centred on enabling environmental issues to be placed on agendas within curriculum and community contexts rather than on attempts to implement and evaluate particular methods or processes for causing awareness and values change[7].

Enhanced approaches that are both revising and departing from these narrow orientations are starting to emerge. These developments suggest a positive reorientation with environment and development education becoming an enabling focus for diverse *social processes which might inform and transform society.* For this to take place we will have to clarify approaches that might foster engaged change within socio-ecological contexts of environmental stress and reduce past modernist orientations that have set out to change heads and hearts through various forms of instrumental intervention.

A clarifying of the underlying orientations that distinguish between enabling and engineering curriculum and communication processes is at the root of how we might best approach environment and development education in a wide range of school/community, rural/urban and mass media contexts. If approached as an emergent critical process to co-construct an agenda for critique-in-action, rather than as an intervention to be implemented, it might well enable education to be enacted as:

   reflexive[8] social processes of evaluation and change through which people can restore and

coexist within the earth's capacity to sustain an interdependent system of living things.

For education to include processes that successfully co-construct local agendas for research and change we might well give some attention to:

   who sets the agenda of concerns;

   how might environmental issues best be put on the curriculum / community agenda; and

   which contexts and orientations foster reflexive change in community and school curricular situations?

Attention might also be given to enabling structures and processes for environmental management and change at, for example, community, regional, national and global levels. On this issue, after a review of environmental management trends in Western Europe, Ching-shyang Hwang (1993) suggests that:

   public awareness of environmental problems, public access to environmental information and public participation in environmental policy-making are key to the success of environmental protection (p.102).

Past orientations in southern Africa appear to have made the error of treating environmental education as a concept to be enacted through processes of rational intervention involving 'hard-facts, heads and hearts' when it might rather have been treated as an idea to foster an agenda of locally relevant issues and actions.

In whatever shape or form, we urgently need tangible alternatives to the modernist models of environmental management and education that have proliferated in southern Africa over the last decade. There are, as yet, few coherent examples but numerous concrete features of existing fieldwork and participative programmes offer hope for CLEAR ACTION which casts off untenable modernist assumptions that have inhibited many past initiatives. This change in orientation is now overdue if we are to meet the challenges of the next decade within the developing environments of southern Africa.

EE Riddle

Q: What, when you've done it, can turn out to be a better way to do what you should have been doing before you started it?

A: EE!

ACKNOWLEDGEMENTS

NOTES

1. Environmental awareness is an 'objective' term commonly used in nature conservation groups to distinguish their environmental education functions from those of formal education agencies.

2. This may manifest itself in a desire to travel to areas of pristine beauty to escape environmental problems which are accepted as a reality of modern life that they are powerless to address.

3. A Zulu word meaning 'no smell'.

4. Thomas Kuhn (1962) uses this term to describe radical shifts within 'scientific revolutions'. It has, questionably, been applied to competing research traditions and to argue for a socially critical orthodoxy within environmental education.

5. 'Goal management' (Odendal 1986) and 'values education' (Opie 1990) are examples of rational intervention perspectives in South Africa.

6. Here I do not see a distinction between a notion of 'doing it to people' or of facilitating people to 'do it to themselves or to each other'. Both are questionable rational intervention orientations.

7. Examples of structural-functionalist approaches are: Odendal (1986) who sets out 'goal management' as a logic for evaluating targeted communication intent and Opie (1990) who, developmentally, maps individual awareness, isolates factors which mould attitudes and devises didactic orientations to foster better values.

8. This notion is widely used in social theory to refer to cultural reconstruction through critical social processes of experiential review (Bourdieu, P. In Robbins, 1991 and Giddens, A. In Cohen, 1989).

Following a recent formal education policy initiative by EEASA and the Department of Environment Affairs, this research has been used to co-construct a resource to encourage environmental education policy initiatives. This resource booklet on 'the environment, development and environmental education' is available for a cost recovery charge of R5.00 from:

SHARE-NET, P.O.Box 394, Howick, 3290.

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