



Environment and Sustainability Education in a Changing South Africa: A critical historical analysis of outline schemes for defining and guiding learning interactions

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Abstract

This paper examines how, in response to emerging risk, methodological narratives for conservation (CE), environmental (EE) and now sustainability education (ESD) were constituted in diverse settings within a changing South African state. After documenting an awareness creation perspective underpinning early extension and experiential activities, the study examines shaping social processes and changing outline schemes for defining and guiding planned learning interactions (methodology) within the broadening field into the present day.

The critical historical analysis developed in the study reflects a well-documented shift from early top-down (intervention/extension) to more participatory approaches (collaborative engagement/stewardship). A situated process-mapping of changing orientations also reveals characterising methodological features across the contours of an increasingly diverse field of conservation, environment and sustainability education. The maps resonate with and reflect situated learning interactions that involve:

- *Clarifying risk and associated information in context (situating story)*
- *Close review of an issue as a concern (moral proximity)*
- *Asking questions to understand the issue in context (enquiry) and*
- *Trying out ways of doing things differently (practical engagement)*

The review concludes that these open-ended processes are seldom found together in community and school curriculum contexts. It thus points to a need to examine:

- *Learner access to available knowledge resources*
- *Processes of close purposeful engagement and*
- *Practice-based deliberation in the mediation of socially responsible choices*

Finally the study examines processes of exclusion across the outline schemes for education. Noted is the knock-on effect of the separation of people and nature at the fences of nature reserves. Here ecology developed as a conservation science of interdependence that was deployed in early awareness programmes against the unawareness of rural land management. Later perspectives reflect landscapes as intermeshed social-ecological systems at risk. Here it is somewhat ironic that the indigenous knowledge practices of rural people are often deployed as idealised models of sustainability against the wasteful practices of modern age.

The analysis recasts environment and sustainability education as open processes of situated re-search and deliberative meaning-making interaction, notably reflexive social learning processes that are planned and undertaken in response to risk within in a community of practice.

An Opening Question

The study was undertaken as part of ongoing inquiry into the way in which learning interactions came to be oriented and narrated in and as environmental education (O'Donoghue, 1993; 1997; 1999; Lotz-Sisitka & O'Donoghue, in press). The research question arose alongside a regional consultative process on education for sustainable development (Lotz-Sisitka, Olvitt, Gumede & Pesanayi, 2006) that pointed to a rhetorical marking¹ of ESD practice, notable for this study in relation to the ways in which learning interactions are constituted (methodology). A reading of data gathered in the review of a professional development programme (Schudel, 2006) also pointed to methodological concerns in relation to active learning (O'Donoghue, 2001) in school curriculum settings.

The rhetorical problematique in ESD discourse and a concern for clarifying the outline schemes defining and guiding learning interactions (methodology) gave rise to the pedagogical question for this study, namely:

How are learning interactions being methodologically constituted in the developing contexts of our work?

In the context of work in the Environmental Education and Sustainability Unit (EESU), Rhodes University, we were concerned with methods and materials that engage learner purpose and provide immediate and tangible benefits in African contexts of poverty, risk and vulnerability. At another level, in work with researchers on indigenous knowledge practices, with the same concern for a more situated and purposeful pedagogy in mind, I also became more conscious of environmental learning as re-researching engagement around emerging questions of sustainability and lifestyle choice.

An Unexpected Turn in the Study

The outcomes of the critical analysis in this study are particularly challenging as some insights run counter to an earlier reading of changing methods (O'Donoghue, 1993; 1996). The earlier analysis of one immersed in an emerging story and the shaping axes of tension of the day partly account for the reading of methodological change as a developmental progression where the new displaces the old. Although this reading of developing methodology is consistent with and reflects socio-political change shaping changing methods, the earlier research did not adequately tease out continuities across succeeding perspectives that were surface-read as changing methods.

Data and experience within a longer time span and a wider and more fully developed field of conservation, environment and sustainability education now allows a review to derive more refined interpretative insight across continuities without an undue influence of the ferment of changing ideals. The reflexive experience of noting how comparative analysis in the earlier study had obscured a sense of developing continuities, sensitised this review to how, despite sustainability appearing to constitute a fresh focus in the global ferment of ESD, it was clearly manifest in earlier perspectives.²

Clarifying Sustainability within Narrative Ideals

Unlike in Europe and elsewhere in the West, where there was intense and protracted debate on distinctions between EE and ESD, the relationships between environment, society and development (viz. sustainability) was explicit and well established in many environmental education programmes in southern Africa. There was thus little oppositional posturing around EE and ESD as there had been in the earlier axes of tension amongst conservation, outdoor and environmental education (Irwin, 1989), much of which was more a matter of the social politics of the day than around conceptual and methodological concerns (Irwin, pers. comm., February 2007). Perhaps the lessons learned in these and other contestations left us unwilling to repeat the often futile dialectic politics that can accompany naming games, especially at the level of new movements and changing slogans.

Contemplating ESD with its more global origins and tracking the idea into southern Africa was thus approached as a critical review of the new in light of a concern to probe and enhance sustainability in what was already being done. The EESU concern informing the review was a consideration of the orientation of our activities and a more coherent taking up of sustainability concerns into the UN Decade of Education for Sustainable Development.

With regard to schooling, the question is contemplated in a similar way in relation to the advent of a new outcomes-based curriculum in South Africa. Here, changing ways of working with a curriculum where environment is purposefully designed in as learning outcomes is closely examined around learner purpose. Curriculum and learner purpose are assumed to coincide in meaningful learning, so the research gave critical attention to portfolio evidence of these interactions within a professional development course (Schudel, 2006).

In these ways, the study sets out to clarify methodology in relation to questions of sustainability, learning and learner purpose in the increasingly diverse settings of planned learning interactions around ever-widening questions of environment and sustainability in South and southern Africa. The research findings are intended to inform the professional development and community support work of the Environmental Education and Sustainability Unit within the UN Decade of Education for Sustainable Development. To this end, a critical historical and process-modelling research design was developed to review evidence of emerging pedagogical practice (methodology) in the southern African contexts of environmental education within which our activities and courses are undertaken.

Developing a Research Design for the Study

Working with a long-term vantage point on historical social processes after Elias (1989), and the historically constituted political sociology of Popkewitz (1991) in educational studies, the study identifies and probes social processes shaping and playing out in learning interactions within the developing methodological narratives informing environmental education.

Seemingly in contradiction to a prevailing sense that environmental education activities are mobilised against the destructive march of modernism, Popkewitz (1991; 2000a; 2000b) describes how diverse processes of education emerged as an integral part of the modernist

project. With this insight it is possible to note how, within the globalising trajectory of modernism in South Africa, first conservation, then environmental and now sustainability education, emerged over time and in response to the 'rubbish and risk'³ produced by and in the modern state. Insights into the apparent contradiction here, between education as resistance to modernism and as social re-orientation within the modernist project, is to be found in the mix of social movements and state institutions that took up narratives engaging nature at risk and human culture as cause. It is notable, for example, how education imperatives arose in conservation science institutions in southern Africa as interventions to create awareness. Here the interplay between ecological research and the enforcement of regulations (law) in these knowledge institutions gave rise to extension services and stewardship initiatives as regulatory land management interventions (structural functionalism) that later became more collaborative⁴ into the democratic state.

With the advantage of a longer-term view, it is possible to note how within the reduction of ambivalence into modern times:

- everyday ways of knowing and doing things under the mediating hand of community receded against the appropriation and knowledge management orientations of the institutions of the modern state,
- education developed as a 'tool' within the modern state for the institutional mediating of the orientation of citizens, and
- knowledge discourses of information dissemination for creating awareness of developing risk emerged to keep the modernist project on track.

To clarify the new global politics of changing ideas and labels Popkewitz (2000a) also notes that narratives of social and educational reform should be interrogated in ways that 'go against the grain'; in the sense that the systems of reason that are embodied in reform attempts and play out as education (e.g., EE and ESD) need to be viewed as potentially problematic and historicised. For this study the intention was to critically review (problematise/historicise/process-map) the shifting methodological landscapes of southern African conservation/environmental education.

To this end, the enquiry is conceptually situated and developed within a context of experiential learning and an historical analysis is taken up within axes of tension that began to develop within conservation and environmental education in the 1980s. The study notes how communication campaigns to get the conservation message across and to create the necessary awareness of risk to foster behaviour change (institutional structural functionalism) began to stand in contrast with experiential learning methods to create environmental awareness through hands-on learning in wild nature (liberal humanist/naturalist ideals). Divergent approaches to the framing of learning (methodology) and changing methods are identified and probed as they emerged amidst the twists and turns of diversifying fields of educational practice.⁵ How methodological propositions arose in resonance with the social politics of the day and were shaped as methods in the developing fields are critically represented and examined within the concepts of the day (problematized/historicised) and reviewed in developing context (historicised/process-mapped).

Situating the Research Design to Contemplate Changing Methodologies

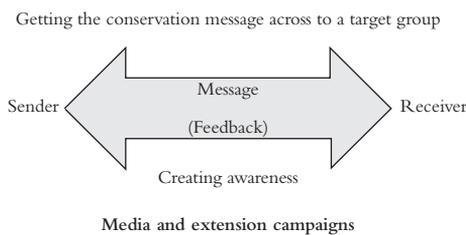
As noted above, a situated vantage point for the study was identified in emerging methodological tensions amidst structural functionalist communication campaigns and nature-based experiential learning. These methodologies are represented in Figure 1a & 1b as open-process maps. In the background of Figure 1b is a representation of the framework of propositions behind the more explicit scheme (Touch; Talk; Think) for defining and guiding experiential learning interactions.

Elias (2000) metaphorically likens social processes to a changing dance pattern or a game. He poses that tracking how processes of intermeshing change over time is useful for contemplating social change. By representing the steering ideas and changing methods in simple diagrams, I have contemplated and probed developing continuities in a context of methodological change that reaches into the ideas in play into the present day.

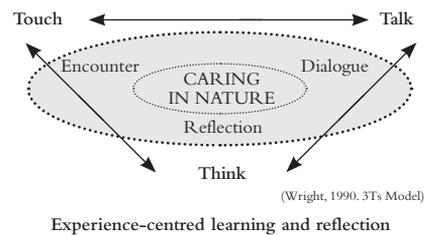
In Figure 1a, awareness creation in early conservation communication was extended to caring in nature (Figure 1b) through nature-experiences methods for fostering awareness in wild nature, particularly for modern children who had grown up in urban areas without much direct experience in the natural world. The nature-experience narrative coincided with the popularising of ecology and an opposing of nature at risk with a modern culture within which unawareness is giving rise to degradation of the natural environment.

Figure 1. Early methodologies

(a) Early Conservation Communication/Extension



(b) Experiential Learning



Within the ferment of tensions between nature at risk and cultural unawareness in the modern world, Symbolic Interactionism⁶ was used to frame and narrate (methodology) experiential learning. The perspective was first used in a participatory evaluation process in the 1990s and the idea of Touch – Talk – Think (Wright, 1988) came into use as an outline scheme for defining and guiding teaching and learning interactions (methodology) in that context. In the diagrams (Figures 1b; 2a & 2b), Symbolic Interactionism (Charon, 1995) is represented as an underlying perspective (encounter, dialogue, reflection) around the ideal of awareness creation through caring in nature.

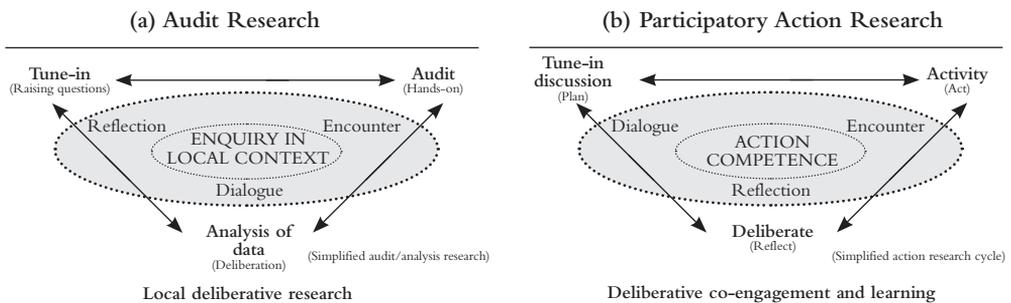
In the study, this open-ended representation is used as an historically situated referent to critically contemplate changes in orientation⁷ within changing schemes for defining and guiding learning interactions. The dialogue/encounter/reflection framework is thus

carried forward to process-map shifts in ideals and methods that emerged as environmental education that was methodologically reconstituted (Figure 2) within the democratic ideals of a post-apartheid South Africa today. Methodological continuities and trajectories within these processes of change are then contemplated in a synthesising representation (Figure 3).

A critical historical view of developing social processes allows one to note how early methodological perspective was constituted within the naturalistic culture of environmental movements that contrasted nature and culture. This dialectic arose in the modern condition as an alienating turn shaping experiential learning imperatives to bring awareness of nature back into the modern world of environmental degradation. As mentioned earlier, the focus on awareness was the same as earlier conservation extension and played out in how field guides at environmental centres took learners out on interpretative trails to experience nature (encounter) in deliberative contrast to the not always obvious 'rubbish and risk' in urban environments (dialogue and reflection).⁸ These early experiential interventions also included a directed action-taking imperative that took the form of clean-up campaigns. Clean-ups became firmly entrenched within widening education activities on annual calendars as awareness-raising activities for changing the attitudes, values and behaviour of individuals and bringing about change in the world.

Probing Emerging Methodologies of Local Engagement and Action

Figure 2. Enquiry and participatory methodologies



The contours of two methodologies for more local, critical and participatory approaches to environmental learning are depicted in Figure 2. Audit research (Figure 2a), for example, was added to nature experience programmes that sought to engage learners in the concerns of their local environment. This developed amidst the tensions of needing to attract clients to the environmental centres and a developing disillusionment with nature experiences being enough on their own to give effect to the desired changes in behaviour. Conservation agency staff running centres noted that most problems were outside the parks. Here the impact of human activities played out as habitat transformation and loss of indigenous species (biodiversity), change that impinged on wilderness and protected areas.⁹ Enquiry and problem-solving approaches thus developed for participants to carry skills of hands-on engagement in nature into problem solving encounters with local environmental problems. This subtle axis of

methodological change constituted a significant shift in the learning context (nature-home) and its orientation (experience-enquiry).

Into the early 1990s, widening environmental movements and rapid democratic change in South Africa (rights and social justice imperatives in response to the apartheid injustices and risk of modernity) shaped action research approaches on a wider landscape of people and nature. The loosening played out in an inversion of a continuing oppositional politics in relation to people and nature. 'Save the people, not the rhinos' emerged as a slogan response to earlier nature-centred ideology. A tongue-in-cheek 'save the whites, not the rhinos' emerged in humorous response reflecting some of the fears of a white minority being carried along in a whirlwind of social change as the African National Congress displaced the National Party in democratic elections to overturn the oppressive apartheid system.

Within these processes of change, a socially critical movement accompanied the emergence of critical pedagogy and was reflected in a rapid popularising of participatory action research. Participation was aligned with ideals of constructivist learning that shaped more action-centred and learner-led activities now facilitated by educators. This is most notable in *action research and community problem solving*, a methodology appropriated from a global engagement with water quality and sustainable watershed management. A little later, the Danish *action competence* approach was also widely appropriated in southern African educational activities, particularly into the late 1990s through the Danish-funded National Environmental Education Programme (NEEP).

Participatory action research and action competence approaches (reflected in Figure 2b¹⁰) also emerged in response to instrumental programme designs (institutional structural functionalism) in environment and health education. Action competence emphasised learner-led activities mediated by deliberative co-engagement that highlight respect for difference (plural dispositions) in democratic societies. Seen against the strong imperatives and dialectic re-orientation to people and action research from nature experience, and collaborative engagement in relation to communicative intervention, the processual re-orientation is once again slight but significant.

An Overview of Broad Shifts in Pedagogy

Ecology provided the symbolic capital of concepts that opened up a modern sense of the natural life-supporting systems and processes at play in the world. The new sense of awareness that came to those encountering these ideas in nature reserve settings gave rise to imperatives to educate others as they looked out at a degrading world that contrasted with the natural abundance in parks. Here, as noted earlier, environmental degradation was ascribed to unawareness in people and education in the form of extension programmes from conservation institutions and nature experience activities in parks emerged. Here, developing outline schemes (communication, extension and experiential) for defining and guiding learning interactions opposed ecological interdependence (nature and awareness) with human practices (culture and unawareness), initially in conservation and then later in environmental education. It is of note that the emergence of the one process (interaction with ecological propositions in parks) constituted

the axes of tension for the other (education), with these processes (education) referring back to the constituents of the first (ecology). In this way early environmental learning was constituted as somewhat of a closed, self-referential loop.

The methodological terrain that was initially opened up as natural environment (ecosystems and hands-on learning) was successively redefined and reconstituted around a broader view of environment as interacting political, social, economic and ecological dimensions. As these wider perspectives developed, the primacy of the early ecological knowledge capital fell away and was displaced by environmental learning as deliberative co-engagement in the challenges and risk of the day.

In the South African trajectories examined in this study, the initial ecological and later widening environmental learning processes were methodologically constituted (pedagogy), initially in experiential methodologies where learners would derive re-orientating experiential learning in wild nature modelled on the experiences of those initiating the new ways of learning. However, induction into the necessary knowledge capital was displaced by an idealising of the experiential encounter¹¹ in nature. The methodological ideal that experiential awareness in nature and hands-on encounters with environmental problems would lead to the desired changed in behaviour (behaviourism) was soon under critical scrutiny as more locally situated and participatory fieldwork methods emerged amidst new ideals of democratic social change in the region. For school curriculum contexts the ideals were reconstituted as active learning processes but, in a similar way, meaning-making work with the knowledge capital necessary for critical insights (socio-ecological, economic and political) was not always explicit as the learning interactions moved through subtle re-orientation as ideals of nature and sustainability were re-shaped within a more individualised, social construction perspective (constructivism) accompanying the social politics of a developing democratic state.

The advent of environment being designed into the new National Curriculum Statement and the learning outcomes of each learning area was heralded as a significant development. An outcomes based curriculum (OBE) is designed so that learner and curriculum purpose might coincide as prior knowledge is mobilised towards the attainment of specified learning outcomes that are assessed. Although environmental learning and the OBE curriculum has been extensively reported, little research has been undertaken on the environment and sustainability outcomes of the environmental learning interactions inscribed in curriculum. Schudel (2006) probes some of these concerns in teacher portfolio evidence assembled in a professional development programme. There is currently little evidence of lines of continuity from the coincidence amongst learner and curriculum purpose to the deliberation and enactment of more sustainable lifestyle choices. This may be too much to expect of a curriculum process and we may have to look at issues of educational quality to contemplate the wider question of social change and sustainability in African contexts of poverty, vulnerability and risk (Lotz-Sisitka, pers. comm., February 2007).

Conservation, environment and sustainability education initially implemented through campaigns to create awareness and to engage people in problem-centred learning interactions also reflect a decentring (situating) and participatory (collaborative) shift that creates the illusion that an imposing tyranny of the past is being displaced by a new democratic freedom. These

shaping influences played out in the early conservation and environmental education ideals of *getting to people* through campaigns and nature experiences to *getting people together* to engage diverse environment and sustainability concerns and to foster better ways of doing things in local context (collaborative extension and stewardship superseding earlier extension and communicative interventions).

Early behaviourist and later constructivist¹² approaches to teaching and learning that are often contrasted in environmental education texts, have a critical engagement with modernism in common, despite a concern for learning interactions in wild nature on the one hand and collaborative engagement around ideals of democratic agency and activism on the other. At one level the processes are not dissimilar but on the other the orientating ideals appear worlds apart. As the steering of education and change was increasingly deferred to participants constructing knowledge in local context, teachers have become facilitators in learner-led engagement with environment and sustainability concerns. The attendant shift and broadening of environment and sustainability within the intermeshed socio-political and methodological trajectories of change is reflected in a new National Curriculum Statement for education, namely, learning processes that reflect *the relationship between human rights, social justice, inclusivity and a healthy environment* (DoE, 2002).

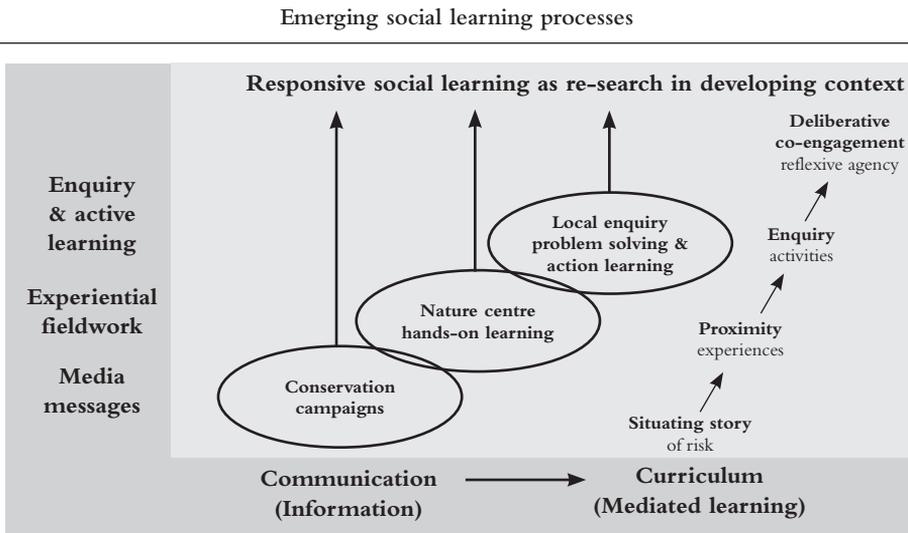
Probing Continuities within Methodological Change in a Diversifying Field

An earlier reading of some of these methodological shifts (O'Donoghue, 1993) suggested that old methods were being superseded by more contextually situated and participatory methods. All early and developing methods (communication, experiential, local enquiry and action research) are, however, still widely apparent in the field as campaigns, nature centres and co-engaging enquiry and action work in context. Process-mapping allowed the study to note how seemingly radical methodological shifts within the changing social politics of the day were subtle and not incompatible at the process level.¹³ Elias (2000) notes how small changes can have incrementally profound effects and Popkewitz (1991) points to how change can be somewhat superficial and rhetorical at the level of ideals that play out in intangible ways. Both of these processes seem to have been at play here as the methodological narratives have developed alongside a period of rapid social change. On the one hand we seem to have a rapidly evolving social politics of methodological change, with notable ideas like education for sustainable development emerging, whilst, on the other, there is a subtle re-alignment that has opened up a wider range of learning interactions. To examine the trends, the methodological shifts noted were each mapped in Figure 3 as they had emerged and characterising features were noted on the right-hand side of the diagram. The representation of methodological processes and trends reflects:

- A shift from communicative intervention (top-down) to a curriculum of learning activities fostering more locally engaging learning around environment and sustainability concerns
- Parallel trajectories in each area that reach into the broader orientations of the present day

- Methodological features that characterise these and loosely correspond with information transfer, nature experience and enquiry/action processes

Figure 3. Comparative review of developing methods



The historical representation in Figure 3 opens up a sense that there is a fuller reading of the emerging story. Whereas outline schemes for defining and guiding teaching and learning interactions for processes of social re-orientation have developed within the social politics of the day, there are characterising features that reflect key processes across the diversifying and broadening field. These perspectives point to a possible need to reconsider how educational imperatives are being methodologically constituted as pedagogy across society as a whole – for learning interactions in particular communities of practice and within formal education as a process of social induction and cultural re-orientation within the sustainability challenges of the day.

This representation of parallel and somewhat complementary trends reflects characterising features within a diversifying and interestingly homogeneous field. Another dimension, the interplay between learning as social induction within knowledge arising in intergenerational life and education as social re-orientation within a symbolic capital of institutional propositions, still needed to be closely examined in the study. This was opened up through an examination of the patterns of exclusion that accompanied the emergence of the developing social field of environment and sustainability education mapped out above.

Patterns of Exclusion in Emerging Education Imperatives

The narrative representation and critical analysis has, thus far, been centred on methodological drivers and trajectories within the developing field of educational activity – primarily on the

story of what was included in the emergent pedagogic field. However the critical historical perspective advanced for the study would not be fully developed without consideration of exclusions – what was overlooked or consigned to the margins.

The most obvious exclusion is how fenced parks became zones of exclusion for experiential learning in nature. In the history of conservation science this exclusion is written and read as something that was done to save wild ecosystems and biodiversity. Another reading is how the attendant exclusion of indigenous people (colonial game laws and fenced parks) constituted a rupture that made these communities more vulnerable in times of drought and in the seasonal patterns of grazing, cropping and hunting that sustained rural livelihoods.

These and other colonial and modernist ruptures contributed to a spiral of poverty and land degradation that gave rise to conservation and environmental education imperatives from the parks. Here education set out to reverse the resource depletion, biodiversity loss and attendant human suffering. The abundance of interdependent living things (biota) in parks had given rise to a new capital of ecological knowledge that came into educational use for the experiential induction of people, particularly young children, into the wonders of the balance of natural ecosystems. The new institutional knowledge capital was constituted as propositions in relation to the patterns of interdependence that constitute life-supporting systems.

These new ecological knowledge systems reflect the workings of nature so that natural systems could be managed. This provided necessary institutional knowledge capital for the wild areas that now excluded people, to be scientifically managed without the local people hunting wildlife, collecting resources and burning the landscape to create pastures as they had done in the past.

It is somewhat ironic that much of the early knowledge on wildlife relations necessary to construct the new institutional knowledge capital initially developed in interaction with the indigenous people excluded from parks. Ian Player (1997) cites numerous examples of how learning interactions with Magubu Mtombela allowed him to construct his intimate knowledge of wilderness and the web of life. Mtombela's wildlife knowledge capital related the intergenerational fabric of indigenous life experiences around the use of indigenous plants and animals to sustain seasonal livelihoods. In the telling, the indigenous symbolic capital was transformed (appropriated) into relational propositions for park management. These were used to relate the workings of the wild so that culling (management hunting) and fire (habitat management) could be used to maintain wild areas without a direct relation to people, a position reflecting the new legislative exclusion of people from parks of natural ecosystems. The new knowledge capital (ecology) for land management was then used in education as a mirror for creating awareness of land degradation under the destructive hand of man.

Developed in an institutional setting, ecological propositions came to stand outside the more relational knowledge of intermeshed patterns of wildlife interaction as these had related to the cultural lives of local people. This constituted a further radical transformation where education with the new institutional knowledge developed as mediating propositions (scientific abstractions on how the natural world works) to be appropriated by learners in experiential learning interactions. The experiential learning acquired in nature was intended for relation to daily life and to give effect to reflexive social change in local contexts of environmental degradation.

Here the detached narrative that developed through the exclusion of people from parks had two outcomes. Firstly, it shaped the emergence of ecology as an abstract institutional knowledge capital of propositions for modelling and managing nature. Secondly, the successful modelling and management of natural systems had the knock-on effect of ecology becoming the knowledge capital for education activities to remodel human induced environmental degradation. In this way conservation and environmental education pedagogy developed as salvation narratives (Popkewitz, Franklin & Pereyra, 2001:161) informed by a developing logic of idealism (Lotz-Sisitka, pers. comm., May 2007) that was initially constituted around ecology as a science for sustainable natural resource management.

The complex relational dynamics of exclusion in the constituting of conservation science and the anomaly of models of nature without people being used in an educative remodelling of human activities shed some much-needed light on the limitations of early information transfer and experiential outline schemes for defining and guiding environmental learning interactions. The historical exclusions also suggest why the recent methodological trend in environmental education is towards a return to the relational and social learning (Wals, 2007) as culturally situated and reflexive learning process of re-search on social-ecological contexts of developing risk. Here the early question of human impact has been coupled with the open question of resilience to allow us to begin contemplating the sustainability of social-ecological landscapes amidst an ambivalent mix of ecological, economic and rights idealisms (Lotz-Sisitka, pers. comm., May 2007).

Despite the anomalous ways that ecological propositions emerged and were taken into early environmental learning interactions, the explanatory narratives for natural systems have developed as a refined symbolic capital for understanding the workings of the world and for resolving many environmental problems. Recent environmental education research has thus probed how reflexive re-search involves the interaction of everyday knowledges and the modern institutional knowledge capital reflected in the school curriculum. Kota (2006) and Hanisi (2006), for example, have probed how indigenous knowledge practices can be explored by learners who then draw down scientific propositions that resonate with and disrupt these. They report how these processes have allowed both insights into the wisdom in older ways as well as opening up how things might be done better in the world today.

Some Concluding Questions and Perspective

A long-term view of these broad and diverse processes of cultural change (now playing out on a global scale within the digital information age) points to how sweeping cultural change has come into effect across humanity as a whole with the advent of modernity. Environmental education emerged within a multiplicity of educations that have accompanied these changes, initially as a wild form of awareness creation education around ecological interdependence in nature and now including wider concerns in environment and sustainability education.

I am struck by two intermeshed trends in the emergent environment and sustainability pedagogy examined in this study. Notably, how prior experience has recently come to be accentuated over (and sometimes as) knowledge capital and accompanying this, how an

emerging pluralism is playing out in environmental learning as individual matters of choice amidst differing and equally valid perspective.

The emergence of environmental learning as more open matters of social knowledge and choice is seldom critically questioned. Knowledge and choice are, however, intermeshed in pedagogy in a sense that prior experience is a foundation for meaning-making engagement with knowledge capital in wider socio-ecological context. Here the illusion of a multiple choice (plurality) is not always seen as being in tension with greater reality congruence of one perspective over another. This can disable meaning-making engagement towards an agreed best perspective with an attendant social responsibility of accountability for continuing reflexive practice.

A critical historical analysis of developing methods within the increasing ambivalence of the modernist project in southern Africa illuminates diversifying ideals of change within education imperatives stripped of key perspective, tools and processes necessary for the desired social re-orientation, namely, *reality-congruent knowledge, shared moral purpose and a situated capability developed within learning processes of active engagement in enquiring practice*. It is interesting to note how these processes (situated story, moral proximity and enquiry/action) have emerged as characterising features in the key areas of knowledge representation, ethical engagement and action-centred enquiry within our broadening field. In this study, however, these processes were not yet found intermeshed in any current outline schemes (curriculum or associated teaching and learning methods) for defining and guiding environmental learning interactions in a community or school curriculum context.

This suggests a need to look critically at current curriculum, methodological perspective and methods asking:

- Do the participants have access to all knowledge resources that might enable them to grasp and grapple more coherently with the issues they are engaging?
- Are learning interactions arising with close, purposeful social engagement in environment and sustainability concerns?
- Do learning interactions reflect practice-based deliberations that might allow the better mediation of choices that are more reality congruent and socially responsible?

The provision of better knowledge resources and the development of more engaging learning activities are an important curriculum challenge, particularly where curriculum is seen as contextually constituted and culturally inscribed.

The critical history and process-mapping methodology applied in this study has provided some insights to clarify methodological ambivalence with respect to sustainability and ESD. The knowledge capital and questions emerging in the study shed light on a need to probe research methodology and pedagogy for possible lines of coincidence within social history and developing contexts of risk. A review of lines of coincidence between how environment concerns are emerging and careful examination of how we are responding by way of outline schemes for defining and guiding education responses might yet inform pedagogy for situated environmental learning.

The study opens up the prospect of education processes being recast as social-ecological and historically constituted action competence (agency) emergent within environmental learning as situating re-search and deliberative meaning-making interactions; social learning in

response to risk so as to sustain social ecological landscapes of human livelihood (communities of practice) in the company of the life-giving processes sustaining the living beings of our finite planet. For this challenging enterprise we currently need to accentuate the provision of all knowledge capital (personal, intergenerational and institutional) within deliberation towards more sustainable knowledge-practices. Steering perspective here needs to be made explicit and socially mediated in continuing critical historical review amidst the more and more daunting questions of sustainability and the resilience of sustainable environments that confront us today. Social learning processes such as these are likely to generate diverse methodological perspectives over single answers.

Notes on the Contributor

Rob O'Donoghue works in the Environmental Education and Sustainability Unit at Rhodes University. He co-convenes a PhD programme and supervises MEd students. Many of the researchers he works with are pursuing an interest in aspects of local and indigenous knowledge, reflexive social change, environmental health and sustainable livelihoods. Email: r.odonoghue@ru.ac.za.

Endnotes

- 1 The language of sustainable development is picked up in a hollow and somewhat self-referential way that is not easy to narrate as tangible processes of learning and change.
- 2 A surface reading of ESD as a new idea and a developing turn in the field would be to fall into a similar trap of narrow analysis in the dialectic social politics of the day – an opposing and re-naming that can create a normalising illusion of change.
- 3 This term is a simple way of depicting waste (rubbish) as a latent manifestation that is accompanied by more hidden problems (risk) in the modern state. See Beck (1992) and Adam, Beck and Van Loon (2000) on risk and 'Risk Society' theory. Also see Engeström (2006) for a probing play on rubbish theory and its extension to humans and humanity as a debris of modernism – a topic taken up by Bauman in his books *Wasted Lives. Modernity and Its Outcasts* (2004) and in *Work, Consumerism and the New Poor* (1998), both studies to be read against his earlier writings on the Holocaust.
- 4 Here there was a complex pattern of landowners banding together to control their land holdings, notable in the conservancies movement and bioregional stewardship programmes to conserve biodiversity hot-spots on private land.
- 5 The study does not treat the educative engagement of the public, farmers and children in school as methodologically separate and distinct. Any distinctive pedagogical processes are examined within the broad sweep of educational imperatives in and in response to a globalising modernist project. Without the broader view one might tend to treat the school curriculum or stewardship initiatives amongst landowners as methodologically distinct, losing a sense of how these have developed as diverse imperatives within the modernist project.
- 6 It is notable that Charon (1995:25) describes Symbolic Interactionism as an approach to sociology that can be traced back to George Herbert Mead and was initially orientated with a philosophy of

pragmatism – an interest that Mead had in the naturalism of Darwin and the behaviourist perspective of the time that assumed humans should be understood in terms of their behaviour. These still resonate with the natural sciences institutional context of conservation education.

- 7 Here the notion of ‘rhetorical marking’ (Lotz-Sisitka, 2006) where methodologies conveyed a sense of somewhat hollow ideals or a sense of rhetorical ‘movement’ that can ‘create the illusion of change’ (Popkewitz, 1991) was useful for probing idealising turns in emerging social movements.
- 8 Planned ecological learning experiences were intentionally out of ‘sync’ with urban lived experience as an intervention to re-orientate the modern mind from a detached to a close engagement in the wilds – a mirror for a more sustainable future. Ecological representations were also abstracted and out of ‘sync’ with the life experiences of rural youth living within the rigours of poverty, vulnerability and risk in nature. A concern for indigenous knowledge methods emerged here for contemplating how continuities of earlier knowledge practices were disrupted with the advent of colonialism and ecology as a modern capital of detached propositions – now taught without cognisance of or reference to earlier symbolic schemes (cultural capital) that sustained communal social life. Only fairly recently has a concern for situated culture, relational and reflexive learning emerged. Exclusion by abstraction is examined later in the paper.
- 9 An irony here is that the erection of fences and the exclusion of local people from accessing the natural resources of parks contributed to the rapid rural degradation that gave rise to this reading of the problem from within the parks. Today the sustainable harvesting of the natural capital of parks is still in its infancy as ecological narratives cannot apprehend the environment as social-ecological landscapes and conservation narratives are built on the modelling of natural systems and processes to the exclusion of humans. The current struggle is to reconcile the modelling of natural systems with the nature of human interactions that are sustainable within these, a somewhat paradoxical dialectic since humans were both integral to the creation and a current reduction in the resilience of these. Exclusion and relevance is examined later in the paper.
- 10 This figure represents the outline scheme (framework) defining and guiding teaching and learning interaction in context. Note how the 3Ts methodological framework has been represented as an overlay of the Symbolic Interactionist process framing developed in the project.
- 11 In my earlier work in nature centres there was a clear notion of the learners being taught by nature as field teachers had experienced their learning in this way. The embodied experience around which this methodological proposition developed was blind to how a capital of ecological propositions had enabled these meaning-making interactions. Player (1997) ascribes much of his ecological literacy to having been mentored by Magubu Mtombela and the rich indigenous knowledge capital he had derived from his ancestors and a lifetime of living in the bush.
- 12 These terms are intentionally used in a loose populist sense here to reflect a shared colloquial authority that came with their use in the social politics of methodological narrates within conservation, environment and sustainability education.
- 13 As noted earlier, the analysis was undertaken with the Symbolic Interactionist propositions of the intermeshed contexts of learning interactions under review.

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