
**ENABLING REFLEXIVITY AND THE
DEVELOPMENT OF REFLEXIVE COMPETENCE
WITHIN COURSE PROCESSES:**

**A CASE STUDY OF AN ENVIRONMENTAL
EDUCATION PROFESSIONAL DEVELOPMENT
COURSE**

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THESIS

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DECLARATION

I, the undersigned, hereby declare that the work contained in this thesis is my own original work and has not previously in its entirety or in part been submitted at any university for a degree.

Glenda Carol Raven

Date

ABSTRACT

Enabling reflexivity and the development of reflexive competence within course processes: A case study of an environmental education professional development course

This research was undertaken in the context of socio-economic transformation in South Africa, and more specifically, in the context of change in education policy. To support socio-economic transformation in South Africa after the first democratic elections in 1994, a competence-based National Qualifications Framework (NQF) was introduced in 1995. In responding to the particular socio-historical context of South Africa, the South African NQF is underpinned by the notion of applied competence, integrating practical, foundational and *reflexive competence*, which is the key and distinguishing feature of this competence-based framework.

In this context of transformation, the research was aimed at an in-depth exploration of the notion of reflexivity and reflexive competence, and course processes that enable its development, with a view to providing curriculum development insights for learning programme development in the competence-based NQF, more broadly, and environmental education professional development programmes, more specifically.

To enable these aims, the research was undertaken in the context of the Rhodes University / Gold Fields Participatory Course in Environmental Education (RU/GF course), as a case example of a professional development course that aims to develop critically reflexive practitioners. Within an interpretivist orientation, a multiple-embedded case study approach was used to gain insight into the relationship between course processes, reflexivity and the development of reflexive competence to clarify and provide a critical perspective on how competence develops in the context of the course. Data was collected over a period of one year using observation, interviewing and document analysis as the primary data collection techniques. Data was analysed through various phases and layers to inform data generation and the synthesising of data for further interpretation.

Through the literature review undertaken within the study, various significant insights emerged around the notion of reflexivity and reflexive competence. Firstly, there appears to be a need to distinguish between reflexivity as social processes of change (social actions and interactions within social systems, structures and processes) and reflexive competence (a range of integrative elements of competence) that provides the evidence of an engagement within social processes of change. The second key insight emerging is the significance of social structure in shaping participation in reflexive processes, thus emphasising the duality of structure as both the medium for, and outcome of reflexive social actions and interactions and so challenges the deterministic conception of social structure. Further, the significance of an epistemologically framed notion of reflexivity and reflexive competence emerged, in the context of responding to the complex and uncertain quality of socio-ecological risks and in supporting change in context. Reflexivity, distinguished from processes of critical reflection, foregrounds a critical exploration of both knowledge and *unawareness*. As such a reinterpretation of reflexive competence is offered as a process of potential challenge to dominant and reigning forms of reasoning (knowledge frameworks) and consequent principles

of ordering. Through this reframing of reflexive competence, the potential exists to destabilise dominant forms of reasoning and principles of ordering to create a broader scope of possibilities for action and change in context.

This reframing of reflexive competence in the context of transformation in South Africa has critical implications for engaging within processes of learning programme design in the NQF to support an engagement within reflexive processes of change and the development of a range of integrative elements of reflexive competence. In this light, the study attempts to make the following contribution to curriculum deliberations within the context of environmental education and the NQF in relation to reflexivity, reflexive competence and change:

- ◆ Reflexivity is conceptualised as social processes of change with reflexive competence providing evidence of engagement within these social processes of change;
- ◆ An epistemologically framed conception of reflexivity and reflexive competence recognises how rules of reason and the ordering of the 'reasonable' person come to shape social life; and so
- ◆ Change is conceptualised as ruptures and breaks in dominant knowledge frames and the power relations embedded in these;
- ◆ Unawareness emerges as a key dimension within reflexive environmental education processes in responding to the unpredictable and uncertain nature of risks;
- ◆ An epistemological framing of reflexivity and reflexive competence highlights the need to develop open processes of learning to support the critical exploration of knowledge and unawareness; and
- ◆ Within this framing of reflexivity and reflexive competence, the difficulty emerges in specifically predefining reflexive competence to inform standard setting processes within a context of intended change.

In framing data within this emerging conception of reflexivity and reflexive competence, a review of course processes highlighted potential areas for reorienting the RU/GF course to support change in context, for which I make specific recommendations. Drawing on the review of course processes in the RU/GF course, and in light of the reframing of reflexivity and reflexive competence, I further offer summative discussions as 'possible implications' for learning programme design in the South African competence-based NQF, broadly and environmental education professional development programmes in this framework, more specifically.

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1.1 THE RESEARCH CONTEXT

Internationally the education and training arena is increasingly characterised by trends toward standards-based reform. Within these processes of educational reform, emphasis is being placed on the notion of life-long learning in preparing individuals to engage meaningfully and effectively with the complex nature of change in the contemporary world (see 4.4). In South Africa, through an alliance between government, business, labour and education, standards-based reform is being approached through the development and implementation of a National Qualifications Framework (NQF) which is outcomes-based and articulated in / as competence-based national standards and qualifications. A key and distinguishing feature of the South African NQF is the defining of applied competence (integrating practical, foundational and reflexive competence) aimed at addressing the economic and social priorities of the country in the post apartheid era (see 2.4 & 4.3).

In seeking to address a two-fold agenda underlying educational change, the South African NQF is described as having a hybrid character. This hybrid character is evident in the intention of the NQF to balance equally the social and economic priorities in the country, these priorities at times coming into conflict with each other. In as much as the NQF in South Africa provides opportunities for formal recognition of an increased range and scope of professional development processes, so too does it present challenges to curriculum developers in terms of a re-orientation of courses and curriculum development (see 4.3). Providing courses and programmes that meet the accreditation requirements of the NQF on the one hand, and encouraging open and reflexive processes of learning to respond to the economic and social priorities on the other, is currently a key priority for educational institutions as they develop and restructure courses, curricula and programmes.

Working as a researcher and course developer in the field of environmental education, I first began to explore the implications of the NQF competence-based framework for course, curricula and programme development in environmental education in 1998. Through an initial research project it became evident that the process of developing courses, curricula and programmes through which the development of reflexive competence is supported and enabled would be a challenge. The challenge arises in predefining competence, particularly reflexive competence, in relation to the need to retain open and reflexive learning processes that enable change in the context of socio-economic transformation in South Africa. This initial research

revealed that the development of practical and foundational competence were clearly observable through an analysis and assessment of participants' portfolios. These competences were similarly easy to articulate in the context of the course within which the research was being undertaken. In this research project the assessment of reflexive competence was more elusive and I struggled with finding evidence of reflexive competence (5.3.1). At this time and through the struggle with finding evidence of reflexive competence, it became evident that a deeper conceptual understanding of the notion of reflexive competence was required to assess the engagement within reflexive processes and the development of reflexive competence in the course. With this initial research as a backdrop this thesis explores the relationship between the development of reflexive competence and course processes in the context of an environmental education professional development programme for adult learners. This research study is undertaken in the context of the Rhodes University / Gold Fields Participatory Course in Environmental Education (hereafter referred to as the RU/GF course) as a case example of an environmental education professional development programme for adults (see appendix 1). With its alleged critically reflexive orientation and consequent nature, structure and curricula features, the RU/GF course encourages a critical and reflexive review in / of practice and as such has an intention to support the development of reflexive competence (see 1.3.2 & 5.4).

1.2 THE MOTIVATION, FOCUS AND AIMS OF THE RESEARCH STUDY

The 'family of courses' associated with the RU/GF course supports the professional development of a wide and diverse range of adult environmental educators all concerned with environmental issues and risks that confront them in varied contexts (see 1.3.1, 2.8 & 4.7). Between 1996 and 1998 an evaluation was undertaken in the context of the course (Janse van Rensburg & Le Roux, 1998). The purpose of this evaluation was to gain insight into the contribution made by the course to professional development amongst environmental educators in the southern African region and to highlight various issues which might be addressed to better support environmental education professional development amongst adults (*ibid*:4). Various insights were gained through this evaluation, amongst these the increasing demand amongst participants for formal recognition of participation and learning in the course (Janse van Rensburg & Le Roux, 1998:54).

Historically, not much attention had been given to issues associated with the accreditation of the course. Prompted by initial requests from participants, Rhodes University issues a certificate to participants at the end of the course recognising their participation and professional development in the course (Janse van Rensburg & Le Roux, 1998:54). This certificate of participation however, does not carry much weight in terms of formal professional recognition

and provides little opportunity for career advancement. Participants in the course are increasingly requesting formal accreditation to facilitate career advancement in their respective places of work ‘... for the effort and accomplishment of the course to be recognised and for the value, commitment and exciting products from the course to be recognised outside of the course’ (*ibid*). In responding to these needs of participants an initial research project was commissioned in 1998 aimed at exploring the accreditation possibilities for this course in the context of educational change in South Africa (Raven, 2000:25; see also 2.4 & 2.7). In the RU/GF course the underlying reflexive orientation of the course that encourages environmental education practitioners to develop professionally and improve their practice was seen to be linked to the development of reflexive and applied competence (see 1.3 & 5.3). The initial research, undertaken in the context of the 1998/1999 RU/GF course, was thus aimed at contributing to the redevelopment of the course in light of the competence framework of the NQF (Raven, 2000:25).

The research undertaken in 1998/1999 and reported in Raven, 2000:

- ◆ identifies various opportunities in course processes that enable the development of competence within the NQF (p61);
- ◆ highlights a range of competences being developed by participants in the context of the course and applied in practice (p65); and
- ◆ highlights the challenge of assessing and finding evidence of reflexive competence (p90).

Drawing on the findings in this initial research project, this current research focuses on exploring course processes in the RU/GF course that enable an engagement in reflexive processes and the development of reflexive competence. By examining the relationship between reflexivity, reflexive competence and course processes, the research seeks to clarify and provide a critical perspective on how competence develops in the context of the course. Through this focus the research aims to provide curriculum development insights for the development of environmental education learning programmes in the NQF outcomes-based, competency framework.

More specifically, this research aims to:

- ◆ critically examine and review an engagement in reflexive processes and the development of reflexive competence in the context of the RU/GF course;

- ♦ contribute to curriculum development in environmental education through a critical examination of the relationship between course processes, reflexivity and reflexive competence in the context of the RU/GF course;

with a view to:

- ♦ informing curriculum development and an associated re-orientation of course processes in the future development of the RU/GF course and other formally accredited professional development programmes in environmental education; and
- ♦ providing a critical perspective on curriculum development for reflexivity, reflexive competence and change in the South African NQF.

1.3 THE RHODES UNIVERSITY / GOLD FIELDS PARTICIPATORY COURSE IN ENVIRONMENTAL EDUCATION

The RU/GF course was started in 1992 with the aim of supporting the professional development of environmental educators in different work contexts in South Africa (see appendix 1). The particular orientation to the course seeks to enable the professional development of environmental educators to respond more effectively to environmental issues and risks that emerge in context (see 5.2 & 5.3). Through encouraging a critical awareness of, and active involvement in responding to environmental issues and risks the course seeks to enable participants to respond educationally to a range of complex socio-economic and ecological issues and risks.

1.3.1 The origin and expansion of the course

Janse van Rensburg and Le Roux (1998:3) note that since its inception the RU/GF course has made (and continues to make) a valuable contribution to environmental education in the southern African region. Subsequent to its development, the RU/GF course has been run as an annual course in South Africa and expanded to varied contexts and countries in southern Africa (see appendix 1).

Earlier trends in environmental education reflect a strong focus on bio-physical and 'greener' issues (see 2.6). Consequently, field centres formed the locus for environmental education programmes in the 1980s and early 1990s. Professional development processes in environmental education were mostly of a 'once off' nature with little follow-up and support. The development of the RU/GF course was prompted by the perception that field workers often

worked in physical and conceptual isolation and needed more of an ongoing orientation to professional development (Janse van Rensburg & Le Roux, 1998:3). Through a process of national consultation and deliberation amongst a group of South African environmental education practitioners, the course was developed and run for the first time in 1992 (see appendix 1).

Since its inception, the course curriculum has been adapted for different professional contexts and has supported the development of environmental education programmes in other countries (Janse van Rensburg & Le Roux, 1998:3; see also appendix 1). In 1995 it was used as a basis for a course for conservation educators in the then Natal Parks Board (NPB) and more recently in 2000, further developed for Kwazulu Natal Nature Conservation Services (KNNCS) with an emphasis on possible accreditation within the NQF. In 1995 it served as a basis for the Rhodes University / Worldwide Fund for Nature (RU/WWF) International Certificate Course which in 1998 developed into the Rhodes University / SADC Environmental Education International Certificate Course (Janse van Rensburg & Le Roux, 1998:117). This course has been run on an annual basis since 1995 for experienced educators at graduate level. The course curriculum was adapted for a teachers' course in two provinces in South Africa, run in 1997/1998 and provided the framework for an environmental education course for industry, business and local government run in 1998 and 1999, currently being redeveloped (2004). Aspects of the course curriculum framework were used more recently in developing a course for South African National Parks (SANParks) run for the first time in 2002. The course was further adapted and run in Zanzibar in 1995, Zimbabwe since 1996 to present, and in Swaziland for the first time in 2000. It has in addition, provided the framework for the development of an industry course in Zimbabwe (1998) and in Malawi (2001). In Swaziland the course is currently being adapted for the context of industry and in Namibia the course is being adapted for use in formal and non-formal education contexts. The course has also been run in Angola (1999) and Zambia (2001, 2002). Though extended to these different contexts, the course aims, orientation and structure remain the same and specific attempts are made to share insights gained in these various contexts to support and improve professional development in environmental education in the South African Development Community (SADC) (DF8, obs.notes, EEMeet - 26/10/00; see also 1.3.2). For example, collective insights gained from the experience of adapting the course were considered at the SADC Curriculum Frameworks Workshop and later articulated as a sourcebook, 'Developing Curriculum Frameworks' (Lotz, 1999a), widely used by course developers in environmental education. The growing demand for environmental education courses linked to this course has led to the formation of a course developers network in the SADC region which has attracted funding from DANIDA (Danish International Development Aid). This initiative is currently supporting nine courses in the region and is strengthening

capacity to support course development at five tertiary institutions in the region (SADC Regional Environmental Education Support Programme, 2001:11).

This study was conducted in the context of what has come to be known as the 'general' course in the 'family of GF courses', in the South African context and with participants from the 1999/2000 course. The research includes participants from the industry course since in 1999/2000 this course was run in parallel to the 'general' course (see 1.4). Though the context of the research focuses on reflexivity and reflexive competence in the South African NQF, the insights gained through this research could inform curriculum processes in both the different professional, and various country contexts (see 1.1 & 1.5.4).

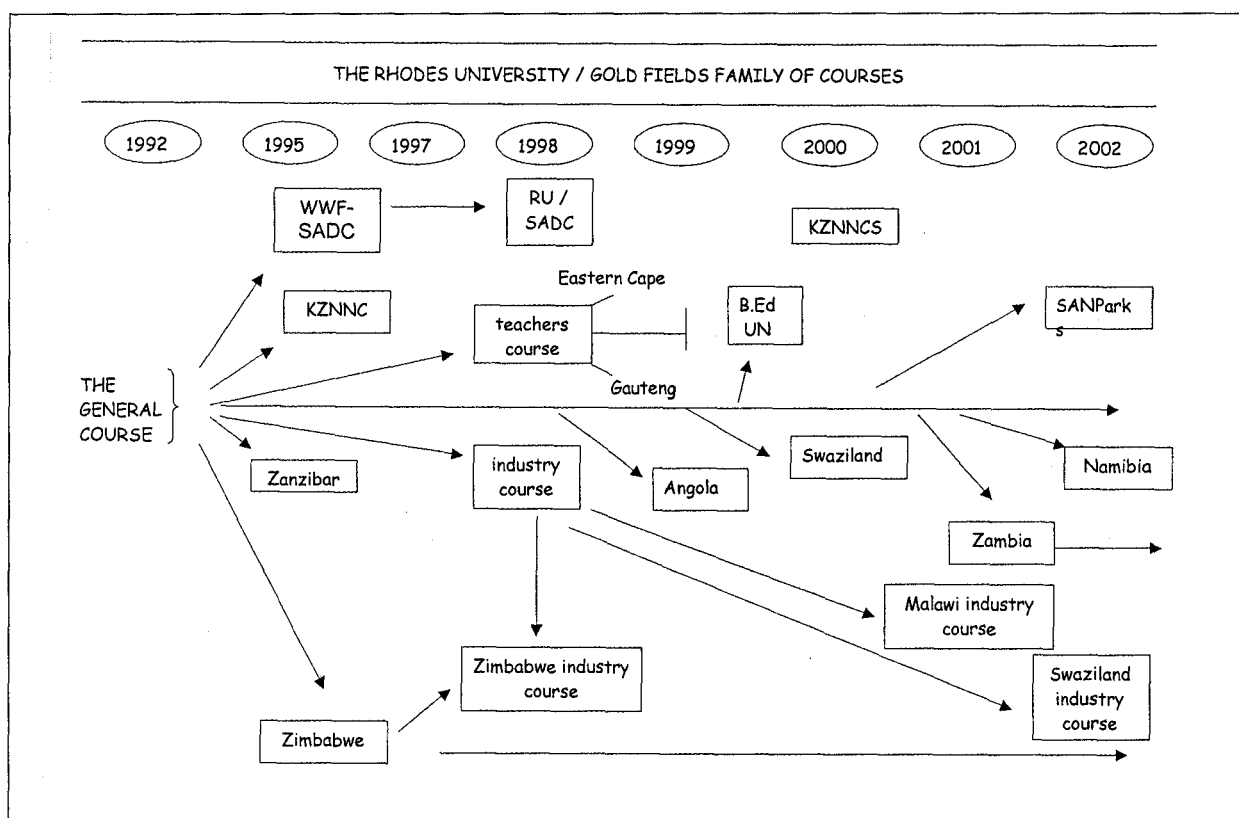


Diagram 1.1 The expansion of the RU/GF course since 1992 to present..

1.3.2 The aims, orientation, nature and structure of the course

The RU/GF course aims to develop the professional capacity of environmental educators in response to the diverse, complex and interrelated environmental issues and risks that confront them in context. Janse van Rensburg and Le Roux (1998:109) describe this development of professional capacity as developing a critical understanding of theories informing or shaping practice, '... exploring what stands under what we do'; articulating or expressing this understanding in relation to practice and attempting to improve practice through this process of

reflexivity (see 5.3). This particular aim of the course is facilitated through the conceptual framework informing the course and has particular implications for the nature and structure of the course.

The RU/GF course is grounded in the following key ideas that form the course orientation¹ and can be seen as the pillars on which the course rests:

➤ **History and context**

In recognising environmental issues and risks as being socially constructed (Lotz, 1999a:49; O'Donoghue & Janse van Rensburg, 1995:8) and environmental education as social processes of change we can better understand these issues and responses by considering the historical context within which they have occurred (Janse van Rensburg, 1994:14). Environmental issues and risks therefore cannot be generalised and responses to these are not generally applicable within all contexts (Lotz, 1999a:48). The course therefore provides opportunities for participants to gain a deeper understanding of the complex and contested nature of environmental issues and risks as these arise in particular socio-historical contexts (see 2.6 & 5.3.3). It also provides opportunities to critically reflect on the assumptions that shape the methods and processes applied in practice, encouraging change and improvement in these methods and processes to respond more effectively to contextual issues and risks.

➤ **Critical reflection**

The course seeks to encourage critical reflection on what practitioners do and the assumptions that underpin this practice with the aim of change to improve methods and processes in environmental education. Critical reflection is encouraged in the course through a critical engagement with theoretical perspectives that inform practice (see 5.3.3). Various opportunities are provided for in the course, for example, assignment work, to further encourage change and improvement in practice to respond more effectively to environmental issues and risks in context (see 5.4).

➤ **The social construction of meaning**

The introductory texts to the course materials describe the social construction of meaning as ‘... people mak[ing] their understanding of the world among themselves, within their life

¹ The course orientation can be described as the ‘outlook’ or ‘key features’ that underpin course processes (Lotz, 1999a:9), a way of thinking about learning processes.

experiences and everyday interactions with others' (Rhodes University Environmental Education Unit, Introductory Texts, 1999:11). This implies that since social systems and practices are created and interpreted by people these are open to change by individuals in interaction with others. Hence, people understand reality (the world or their environment) differently and these understandings are shaped by experiences within socio-historical context (see 5.3.3).

➤ **Praxis**

In the course theory and practice are seen as being inextricably linked thus fostering an integration of theory and practice or praxis (see 1.5.3 & 5.3.3). Central to this idea is that every theory is informed or shaped by practice and every practice reflects some theory or key idea. Various course processes encourage a better understanding of practice and the ideas that inform practice with a view to enabling an improvement in practice (see 5.4).

Informed by this orientation, key features of the course curriculum include curriculum processes that:

- ◆ are responsive to a diverse group of adult learners and their particular socio-ecological contexts;
- ◆ enable deliberation and reflexive review around contexts of action;
- ◆ enable participation;
- ◆ encourage an understanding of practice in relation to theory informing this practice;
- ◆ enable assessment processes that enhance learning.

(Janse van Rensburg & Le Roux, 1998; Lotz, 1999a)

To enable the enactment of the above curriculum processes, the course has a flexible structure that allows for adult learners to deliberate aspects of the curriculum (see 4.5.1 & 4.7). The course is run in a semi-distance format over a period of approximately one year. During this period three national workshops are held spaced approximately five months apart. These workshops serve to introduce key concepts, perspectives, ideas and trends that inform or shape environmental education processes. The workshops, supported by core texts and readings, encourage discussions around these ideas in relation to the work context of participants. The time between each workshop allows participants to work through these concepts, perspectives, ideas and trends, in relation to their practice, through work-based assignments. These work-

based assignments are supported by tutors and regional tutorials that are held between the national workshops (see 5.4).

1.4 INTRODUCING THE CASE STUDIES

This research was undertaken in the context of the 1999/2000 RU/GF course using a multiple embedded case study approach. To explore the dual foci in the research question, that of: (1) course processes in the RU/GF course; and its relation to (2) reflexivity and reflexive competence, I developed the multiple embedded case studies at three distinct levels (see 3.5.3).



Diagram 1.2 Participants in the 1999/2000 RU/GF course.

At a first level, I explored the RU/GF course as a case study (see 3.5.2.1). This provided an example of an adult education course for environmental educators, with its intention to enable the development of reflexive competence.

At a second level, I identified three tutorial groups within the course to provide deeper insight into more specific course processes emanating from the orientation and aims, and in relation to participants' needs and tutor orientations in particular regional tutorial groups (see 3.5.2.2). These tutorial groups were the Eastern Cape regional tutorial group (ECTG), the Western Cape regional tutorial group (WCTG) and the industry tutorial group (ITG). Regional tutorial

programmes are developed according to the needs of participants in this group and negotiated amongst the regional tutors and participants (Raven, 2000:57). The initial research undertaken reflects that course processes in the regional tutorials vary, the variance being linked to the professional development needs of participants in different groups and the skills and orientation of the tutors (Raven, 2000:79). I introduce this point here to motivate for the reasons for choosing to develop case studies around the three different tutorial groups, this issue being further expanded in section 3.5.3.2.

Tutors for regional tutorial groups are appointed on the basis of the size of the group and availability of experienced environmental education practitioners in the region (see 5.4.3). Jane and Lawrence were tutors for the ECTG. Jane had recently in 2000 completed a Masters Degree in Environmental Education at Rhodes University. Lawrence has been involved in the development, co-ordination and tutoring of the KNNCS and the SANParks courses (see 1.3.1). Wendy was the main tutor in the WCTG, supported by a second tutor. Through the course the support tutors in the WCTG changed three times, though the number of tutors in this group remained at two (see 3.5.2). Wendy had completed the RU/GF course the year prior to taking on the role of tutor in the WCTG. The three support tutors, Razeena, myself and Eureka all have experience in developing and / or participating in the course or related courses. Due to the number of participants in the industry group, I was the only tutor for this group.

At a third level, six course participants were identified around whom I developed particular case studies to provide insight into an engagement within reflexive processes offered through various course processes (see 3.5.3.3). I chose to work with six participants to reflect the diversity of course participants who participate in the course. The initial research reflects that the diverse group of participants in the course generally work in five professional contexts (Raven, 2000: 37). These are:

- ◆ formal education settings (teachers in secondary and primary schools, and teacher educators);
- ◆ centres and organisations (both governmental and non-governmental) who support environmental education processes at schools;
- ◆ organisations, (both governmental and non-governmental) working to support communities in addressing local environmental issues;
- ◆ participants involved in resource materials development; and

- ♦ participants working in an environmental management context in industry and business

(Raven, 2000::37-38).

One of the aspects guiding my choice of the six individual participants was work context, this diversity of context being reflective of course participants and environmental education practitioners more broadly². The case study participants and their work context are briefly introduced below.

Anton worked for the Centre for Conservation Education (CCE) in Cape Town and is involved in supporting teachers to initiate and develop environmental education programmes at their schools (DF10, C1)³. Vasintha taught at Rylands Primary School in Cape Town (DF10, C2). She was involved in a project at her school, supported by the National Botanical Institute (NBI) to develop and maintain a school garden (*ibid*). Cathy taught at Sans Souci Girls High School in Cape Town in the subject area of geography and was concerned with introducing environmental education processes into her teaching (DF10, C3). Daniel worked for Khutala Colliery based in Witbank, Mpumalanga and was part of the industry group (DF10, C4). His interest in environmental education processes stemmed from environmental management that was part of his portfolio as Technical Services Manager (*ibid*). At the time of the research Songezo was unemployed and lived in Grahamstown in the Eastern Cape and was involved in developing and initiating community-based environmental education programmes to address the dual issues of poor waste management practices in his community and unemployment (DF10, C5). At the time of the research Anastelle worked as a researcher for the National Botanical Institute (NBI), based at Kirstenbosch National Botanical Gardens in Cape Town (DF10, C6). At this time, she was involved in a community-based project in Namaqualand attempting to support communities to address the issue of desertification and the associated socio-economic consequences (*ibid*). Further details of these course participants are discussed

² As understandings of environmental issues and risks move beyond the realm of conservation to include issues of development, democracy and peace (Lotz, 1999a:47), individuals and communities in different and diverse contexts are seeking ways to respond educationally to these issues and risks that affect all areas of our lives. This has marked an increase in the range and scope of formal and non – formal contexts within which individuals and communities attempt to enable environmental education processes and accounts for the diversity in environmental practitioners joining the course.

³ Data gathered in the study has been arranged in data files, ranging from data files one to ten (see 3.7.2). The data files have been number coded as DF 1 to DF 10. Data file ten (DF10) contains the constructs that were developed for each of the six case study participants, each of the constructs being referred to as construct one to construct six, each coded as C1 to C6.

in section 3.5.3.3, and their engagement in reflexive processes is further discussed in chapters five and six.

The case studies developed at these multiple levels are considered through the research process as *embedded within* the particular socio-historical context of South Africa and more specifically within the context of transformation in the post apartheid era (see chapter 2 and 3.5.2).

1.5 CLARIFYING REFLEXIVITY AND REFLEXIVE COMPETENCE

As noted above and in the title of the study, a key focus in this research is reflexive competence. Very little literature however, currently exists around the notion of reflexive competence though reflexivity is explored in various contexts of the social sciences. Reflexivity appears to have emerged from within varying perspectives and is used in different ways in education, research and in social theory, more broadly. For purposes of orientating to the study, in this section I provide an introduction to some of these divergent framings of reflexivity. The aim of this introduction and discussion is to share with the reader the theoretical understandings that guided the process of inquiry and so provide an orientation to further sections of this research report. Here, I draw on the context in which the term is used or developed and look at some ways in which it is applied to reflect how my understanding of the notion of reflexivity and reflexive competence is shaped and how the notion of reflexive competence has come to shape educational discourse in South Africa. In particular I clarify:

- ◆ reflexivity as used in social theory;
- ◆ reflexivity as used in social science research;
- ◆ reflexivity as used in relation to practice; and
- ◆ reflexive competence as used in the South African NQF competence framework.

Out of these discussions of reflexivity in different social contexts, I conclude this section with a summation of the main ideas and perspectives that I draw on in developing an analytical framework for the study.

1.5.1 Reflexivity as used in social theory

Beck (1992:19) uses the term 'reflexive modernization' in the context of exploring environmental risks created through modern industrial systems and development economies (see 2.6). The consequences of scientific and industrial development are seen as a set of risks and hazards that can no longer be confined to defined national boundaries, the effects of which are likely to extend beyond specified time frames (Beck, 1992:19). 'Reflexive modernization' is seen by Beck (*ibid*) as a stage in modernization in which the logic of wealth production is displaced by the logic of risk avoidance and risk management, one where '... modernization is becoming reflexive; it is becoming its own theme'. Beck (1992:26) foregrounds reflexivity as increasing freedom from and critique of the dominance of science and expert systems in organising social life.

Giddens (1994:57) and Lash (1994:110) share Beck's (1994:174) thesis of 'reflexive modernization' as processes of social change, focusing on the political, economic and social origin of risks. Giddens (1990:36) talks of 'institutional reflexivity' as processes through which social institutions and practices are constantly examined and reformed in light of new information about them, thus altering those institutions and practices. Lash (1994:115), with more of a focus on the individual within social structures, talks of 'structural reflexivity' in which individuals become free from the constraints of social structures through reflection on the rules and resources of such structures. He (*ibid*:111) argues that receding social structures are continuously being displaced by '... information and communication structures'. These theses of reflexive modernisation all recognise that the more societies become modernised, '... the more agents acquire the ability to reflect on the social conditions of their existence and to change them in that way' (Beck, 1994:174).

These theses of reflexivity all indicate a key role of knowledge in processes of social change which Beck (1999:110) sees as forcing decisions and opening up contexts for action. However, what distinguishes Beck's (1992:175) thesis of reflexivity from that of Giddens and Lash is '... not knowledge, but rather non-knowledge that is the medium of reflexive modernisation', what Beck (1999:119) calls 'reflexive unawareness'. Beck (1999:109) distinguishes between 'reflection' and 'reflexivity', the former being described as '... bound in essence to knowledge on foundations, consequences and problems of the modernization process'. He (*ibid*: 109 – 110) sees reflexivity as an extension of reflection linked to unintended consequences of modernisation, the effects of non-knowing. In clarifying reflexivity as processes distinct from reflection, Beck (*ibid*:121) distinguishes between knowledge and unawareness. Unintended consequences, the result of the foundational narratives of industrial modernization are seen as

a part of knowledge, contested amongst different social groups (*ibid*:120). 'Unawareness' is seen as a product of '... highly developed expert rationality' which is gaining importance in processes of reflexive modernisation'⁴ (*ibid*:124). Beck (1999:122) describes unawareness as selective reception and transmission of the knowledge of risks, uncertainty of knowledge of risks, mistakes and errors, an inability to know and an unwillingness to know. The distinction between and distribution of knowledge and unawareness comes to be based on a social structure, a power gradient between expert systems and those who call those systems into question (*ibid*:125). In this light, Beck (*ibid*) argues for non-linear theories of knowledge in reflexive modernization which '... open, multiple field[s] of competitors acting on knowledge', opening up possibilities for exploring and addressing unawareness.

Beck (1992:31) recognises risks as embedded in social conditions, structures and relationships (see 2.6). Responding to environmental issues and risks thus requires a critical engagement with / within these social conditions, structures and relationships. As such environmental education moves beyond a focus on the ecological crisis, and becomes a critical social movement geared towards challenging and attempting to change the social institutions within which risks have emerged, are understood, managed and communicated. Furthermore, risks are constructed, understood, managed and communicated within dominant scientific and expert systems of knowledge that often serve to sustain socio-ecological disparities. In this sense, Beck (1999:109) foregrounds the significance of not just knowledge but also unawareness in engaging with modern day risks (see above). For Beck (1999:10) it is not only about considering what is known or not known about environmental issues and risks, but equally imperative is to consider *why* and *how* knowledge about environmental issues and risks comes to be known or not known. This conception of reflexivity, considered in the context of a 'risk society', resonates with Popkewitz and Brennan (1998:8) and Popkewitz's (1999:18) social epistemology wherein change is seen as challenging or disrupting dominant forms of reason (knowledge) and principles of ordering (see 4.6.3).

Like Beck (1992), Giddens (1984) uses the term reflexivity in reference to uncovering the boundedness of human consciousness and consequent actions to, in this way, open up possibilities for alternative action and change. Through his theory of structuration, Giddens (1984) offers a critique of functionalist and structuralist approaches to social theory which he argues creates a dualism between actors and their social structure and so reflects individuals primarily as 'cultural dopes' (cited in Loyal, 2003:37), products of social structure. Giddens

⁴ As society becomes more reflexive of the problems created through techno-economic development, reliance on scientific rationality increases as a means to managing socio-ecological risks and so gains prominence in shaping social organization (see 2.6).

(cited in Tucker, 1998:84) argues that people (agents) are integrally connected to social structure through social practice (agency) that he sees as the '... points of articulation between actors and structure'. Through emphasising the interrelationship between social actors and social structure the duality of structure emerges where social structure is seen as both the medium and the outcome of social actions and interactions. In this sense, Kaspersen (2000:381) argues that structure exists only virtually and derives from social practice through the actions and interactions of agents who draw on this very structure when they act. This challenges the conception of social structure as an external, deterministic frame of reference for action.

In recognising the interrelationship between agent and social structure, individuals are seen as reflexive, acting agents who engage in ongoing and complex social interactions and who are knowledgeable about, and can justify their actions (Tucker, 1998:80). Agency is thus linked to knowledge and reasoning (Delanty, 1999:161) and includes the capacity to act otherwise (Tucker, 1998:78). Delanty (1999:161) sees knowledge as the mediating link between social agents, agency and social structure. As social agents increase their knowledge about and recognize the conditions of social reproduction, they are subsequently motivated to act otherwise (*ibid*:162; Loyal, 2003:38). This process of ongoing production and reproduction of social life Giddens (1979:244) recognises as being the outcome of the innate reflexive capacities of social agents.

Loyal (2003:31) argues that knowledge of agents is bound in two ways. Firstly, the knowledge of agents is bound through spatial breadth that creates an unawareness of actors as to what goes on in other social environments. Secondly, drawing on Giddens' thesis of structuration, knowledge is bound by the unacknowledged conditions of action and the consequent unintended consequences of this action. For Giddens (cited in Loyal, 2003: 31) the primary role of the social sciences is then to uncover this boundedness of knowledge, consciousness and consequent actions that seek to reproduce social life. Structuration theory argues for the maximization of an agent's knowledge of the unknown conditions and consequences of actions so as to enhance the capacity for self-regulation (governmentality) and political action (Loyal, 2003:38). In this sense, Giddens' thesis of structuration links to Beck's thesis of unawareness (1999) through which alternative conditions of social life are sought through an exploration of what lies beyond the awareness of agents and that which shapes intentions, motivations and consequences of action. It similarly links to the thesis of Popkewitz and Brennan (1998) and Popkewitz (1999) who argue for a social epistemology to challenge the conditions and consequences of social life through an interrogation of the role of knowledge and power (a

historicising and contextualising of the forms of reasoning and principles of ordering knowledge) in the construction of society.

Tensions however, begin to emerge in structuration theory at two levels. The first tension emerges in an overemphasis on the individual reflexive capacities to act within / on social structure. Structuration theory locates the motivations and desires for action in the individual psychology of humans and thus offers a rather individualistic account of agency (Loyal, 2003:40). Despite the initial emphasis on the duality of structure, Giddens' thesis of structuration leans strongly towards individual agency and to borrow from Delanty (1999:171) '... presumes a strong programme of individualism to the neglect of collective agency ...'. This links to a second tension emerging in the 'taken for granted' 'knowledgability' of social agents assumed through structuration theory, where the confluence of knowledge, power and social structure is largely neglected (Delanty, 1999: 161, 149). Loyal (2003:40) similarly offers a critique of structuration theory in its individualistic account of reflexivity and argues that '... the active sociality of human beings as a basis for the contingent development of knowledge' needs to be re-emphasised in understanding the reflexive capacities of social agents to act within and change social structure. In this sense, Popkewitz's (1999:22) thesis of the socio-historically situated construction of knowledge becomes valuable in recognizing and interrogating how the social construction of knowledge and the power relations embedded in knowledge frameworks shape the principles by which social agents 'see' and act in the world.

In the context of social theory, Beck's (1992, 1999) thesis of reflexivity provides a basis for the conceptualization of reflexivity in the context of environmental issues and risks as processes of social change. Through a focus on what is known, together with a focus on what is not yet known about issues and risks, allows a framework within which to critically explore and respond to existing constructions of issues and risks and processes by which these are managed, communicated and responded to. Giddens' (1979) theory of structuration is similarly useful in providing the basis for conceptualizing the reflexive potential of social agents, albeit within a relatively narrow conception of knowledge and an individualistic framework for action (Delanty, 1999:177). Drawing further on Popkewitz's (1999:35) social epistemology, it becomes necessary here to situate the knowledgeability and consequent reflexive capacities of social agents within context to understand the socio-historical influences that have come to shape what is '... 'seen', felt, thought, and talked about as ... possibilities of action, participation and reflection'.

1.5.2 Reflexivity as used in social science research

Reflexivity in social science research is used in relation to critically reflective processes and the demystification of hidden assumptions, systems, structures and 'silences' inherent in processes of inquiry (Janse van Rensburg, 1995a:97). Usher (1996:48) talks of reflexivity in research as a process of '... researching our research ... ' which I see as attending to the research design decisions we make ' ... *and* ourselves as researchers ... ' (my emphasis) which implies self-reflexivity of how personal views and interests have shaped the research process. Lather (1991) highlights not only the need for self-reflexivity in research, but also methodological reflexivity in the context of socially transformative research (see 3.4; see also Janse van Rensburg, 1995).

Lather (1986b:65), informed by a critical theory perspective, argues for reflexive research processes which challenge the neutral and objective nature of scientific research that mystifies ideologies inherent in research and legitimates class, race and gender privilege. Janse van Rensburg (1995a:201) describes a reflexive orientation to research as one underpinned by critical reflection aimed at challenging the existing conventions, ideas and forms of reasoning inherent in social research processes. These perspectives links to Beck's (1999:109) notion of reflexive processes that encourage a critical interrogation of existing knowledge systems and opens up possibilities to explore inter-epistemological deliberations in research, for purposes of effecting social change and Popkewitz and Brennan's (1998:8) social epistemology which similarly probes processes of knowledge construction and embedded power relations.

As an alternative to positivist approaches to research, Lather (1991a:15) proposes reflexive processes where we (as researchers) '... attend to the politics of what we do and do not do' (Lather, 1991b:13). I interpret this proposal as one that calls for a critical reflection on, and re-orientation of the way in which we undertake research. It suggests building into research practices, procedures and methods that challenge us to consider the relational dynamics in research settings and the politics and epistemological framings that influence methodologies, methodological procedures and consequent knowledge production (see 3.4.2).

Bozalek and Sunde (1993/1994:78) describe reflexivity as critical self-reflection of the researcher and how he / she has shaped the research process. They (*ibid*) refer to this as being 'personal reflexivity' which reflects how the interests and values of the researcher shape the research process. Lather (1991b:2) similarly argues for processes of self-reflexivity to make explicit the shaping influence of researchers values and interests in the research process. I draw on Lather's (1991b:2) view, described within a context of action for change and as an

extension of Bozalek and Sunde's (1993/1994:78) view to describe self-reflexivity as processes of ongoing reflection on and change in the role that I as researcher played in shaping the processes of inquiry (see 3.3 & 3.4.3).

Similar to conceptions of reflexivity as used in social theory, in the context of social science research reflexivity appears to imply a focus on the reflexive capacity of social agents to effect social change through recognizing and critically challenging the principles of knowledge construction (and power relations embedded in these) and constitution of social life to open up possibilities for alternative actions and processes of change.

1.5.3 Reflexivity as used in relation to practice

Reflexivity in practice is used to emphasise action for change initiated through a critical review of practice. Central to the idea of reflexivity in practice is the idea that theory and practice are inextricably linked and that we can better come to understand our practice through an interrogation of the theoretical ideas underpinning and embedded in action (see 1.3.2 & 5.3.3). Janse van Rensburg (1995a:97) uses reflexivity interchangeably with processes of critical reflection situated within action and experience. In reconsidering the nature of practice, Usher *et al* (1997:137) calls for praxis as a form of practice, '... which is both reflective and reflexive'. In recognising that theory and practice are mutually interactive, informal theory (the conceptual frameworks that guide intentions) is brought into consciousness and becomes open to change, in light of practice. Practice then itself has the potential to change as a result of the changes in informal theory.

Janse van Rensburg and Le Roux (1998:104) draw on the ideas of Usher *et al* (1997:137) in describing praxis in the context of the RU/GF course. In the RU/GF course praxis is seen as '... mindful practice from within a critical orientation' (Janse van Rensburg & Le Roux, 1998:104). Praxis is about exploring the 'why' question which underlies what we do and how we do it and feeding this exploration back into practice. Building on the ideas of Usher *et al* (1997:137), Janse van Rensburg and Le Roux (1998:105) see the aim of exploring the theory underlying actions as being to improve what we do and how we think about what we do. I favour and wish to add to a description of praxis used by a RU/GF course participant as being '... informed critical action' (Janse van Rensburg & Le Roux, 1998:105). This description encapsulates the ideas of both Usher *et al* (1997:137) and Janse van Rensburg and Le Roux (1998:104), implying the *critical* exploration of theories embedded in practice to *inform* further *action*. In the context of the RU/GF course I understand praxis to mean 'informed critical action *for change*'.

Here I draw on Lather's (1986a:258) description of research as praxis '... committed to critiquing the *status quo* and building a more just society'.

This notion of reflexivity in practice, through attempting to change practice by becoming conscious of informal theory can be linked to Beck's (1999:119) idea of reflexivity focusing on knowledge and unawareness (not yet knowledge). In praxiological processes the theory – practice relationship plays a key role in supporting processes of knowledge construction and uncovering unawareness to open up opportunities and expand the potential for change.

1.5.4 Reflexivity in the South African competence framework

The notion of reflexivity has recently emerged as an integral part of standard setting processes in the South African NQF, thus being used to frame educational practices and processes. In this context reflexivity is used to describe an aspect of applied competence. Reflexive competence is defined as a particular 'kind' of competence to be considered in the development of national standards and qualifications.

The National Training Board (1997b:109) described applied competence as '... the demonstrated ability to perform a set of tasks with understanding and reflexivity'. Useful in understanding this notion of reflexivity is considering the three interconnected types of competence that it describes, namely practical, foundational and reflexive competence. Practical competence is described as the ability to review a range of possible actions in an authentic context, decide on an appropriate action to follow and perform the chosen action (Department of Education, 2000:10). The chosen action is grounded in foundational competence that is the demonstrated ability to understand the knowledge and thinking that underpins action (*ibid*). These two types of competence are integrated through reflexive competence through which a learner shows the ability to connect his / her performance and decision making to the underlying understanding and adapt to change or unforeseen circumstances and be able to explain these adaptations (*ibid*).

Drawing on Beck's (1999:119) thesis of reflexivity as distinct from reflection, the use of reflexive competence in defining specific national standards appears to be addressing the notion of reflection rather than reflexivity (see 1.5.1). Specific reflexive competences for teacher education have been developed and defined in the Norms and Standards for Educators Document (Department of Education, 2000:15-22). Some examples of these competences are '... reflecting on strategies to assist educators working on integrated teaching programmes and in team teaching' (Department of Education, 2000:18) and '... critically analysing the degree to

which the school curriculum addresses barriers to learning, environmental and human rights issues' (*ibid*:20), indicating an intention to encourage critical reflection. These examples, however, do not appear to encourage learners to move beyond critical reflection towards engaging within processes of change. Other competences appear to encompass the idea of action for social change. For example, '... reflecting on how race, class, gender, language, geographical and other differences impact on learning, and making appropriate adaptations to teaching strategies' (*ibid*:16). This appears to encourage an analysis of thinking and action within socio-historical context and through 'appropriate adaptation' implies a challenge to and addressing of social difference in the learning context. These examples of reflexive competence however, run the risk of narrowing learning opportunities by predefining the knowledge systems which learners are intended to interrogate (see 4.3.2). They further run the risk of limiting effective engagement with change by suggesting a reactive rather than proactive engagement with processes of change (see 4.6.1).

Reflexive competence, a relatively new concept in the South African qualifications' framework has not been explored much in the literature. The description of applied competence (see above) reflects some of the principles of praxis, in that it implies the recognition of theory in practice and opens up the opportunity to bring theory into the consciousness (see 1.3.2, 1.5.3 & 5.3.3). By focusing on 'reflexivity' it implies, through this 'conscientising' process, an enabling of change (see 1.5.1). Since reflexivity in the South African NQF was developed in the context of socio-economic and educational change (see 2.4 & 4.6), I infer an intention of active engagement in social processes of change in the post apartheid era. Despite the implications for social change, the description of reflexive competence in national policy reflects a reactive approach to engagement in change processes. The description of reflexive competence as being the capacity to '... adapt to changes and unforeseen circumstances', implies the development of competence to reactively respond to change initiated externally and emerging from within dominant political, economic and social systems, structures and processes.

1.5.5 Towards a framework for interpretation

In the South African context of transformation change in education, the development and implementation of the NQF, and more specifically reflexive competence as a key feature of this competence-based framework is underpinned by economic and development priorities on the one hand, and issues of human rights and social justice on the other (see 4.3.3). This research was conducted in the context of an environmental education professional development course and sought to gain curriculum development insights for environmental education specifically, which could provide insights to inform teaching and learning processes in the context of the

NQF, more broadly. A central focus of the study being to gain insight into the development of reflexive competence and how this development is / might be enabled within course processes. Given the limited literature on the notion of reflexive competence, I have drawn on the range of literature introduced above to inform perspectives around reflexivity, reflexive competence and social change. Through this literature review, I have drawn on the various perspectives shared above to develop a framework for the interpretation of data collected and analysed (see 3.7.2).

Firstly from this review, I draw a distinction between reflexivity as social processes of change and reflexive competence as the evidence of engagement within these reflexive processes. Drawing on the notion of reflexivity as used in social theory (see 1.5.1) and in the context of social science research (see 1.5.2), reflexivity is conceptualised as *social processes* of change. The emphasis on social processes signifies, for me, social actions and interactions within social systems, structures and processes and can thus not be equated to the range of competences that enable individuals to engage within these processes. From Giddens' (1979, 1984) structuration theory I have drawn on the notion of reflexivity in reference to social agents and their interchange within social structure, cognisant however of the limitations of emphasising individual agency (see 1.5.1). Complemented by Popkewitz (1999), the reflexive interactions of social agents need to be considered within the socio-historical context and power relations that have come to shape the possibilities for these interactions within social structure. I have thus come to see reflexive competence as the *evidence of engagement* in the complex actions and interactions that constitute processes of change in social systems, structures and processes. Data analysis in the research is thus framed around course participants' engagement within reflexive processes, reflexive competence providing the evidence of this engagement. Course processes and how they shape / enable participants engagement in reflexive processes are examined in some depth given the curriculum interest of the study (see 1.2).

In the context of the RU/GF course, I draw on Beck's (1992, 1999) thesis of reflexivity in attempting to gain insight into research participants' engagement within processes of change at two levels. Firstly, in the context of a risk society Beck (1999:35) argues for the inextricable link between human rights and social justice issues and '... wealth driven ecological degradation and technological – industrial dangers', situating environmental issues and risks in socio-economic systems, structures and processes. In the South African development context for example, issues associated with the provision of adequate sanitation, water related health risks, food security and land use management, illustrates the close association between poverty and environmental degradation and risk (see also 2.6). Environmental education processes, particularly in a South African context of change, become significant in responding to issues of socio-ecological inequality and risk. Secondly, Beck (1999) argues for the medium of reflexivity

extending beyond knowledge to include unawareness and that which is not yet known. Responding to the uncertain and unpredictable nature of risks requires a critical consideration of the way in which risks are constructed within dominant knowledge frameworks, how these are managed and communicated and the education processes through which responses to these risks are developed. In this regard, structuration theory similarly offers a basis for conceptualizing of reflexive processes as attempting to uncover the boundedness of knowledge to open up possibilities for change (see 1.5.1).

Popkewitz's (1999) social epistemology has provided the lens for conceptualizing of processes of change as disruptions and breaks in existing and dominant knowledge frameworks and the power relations embedded in these (see 4.6.3). In this sense, an engagement in processes of change is seen as challenging the systems of knowledge that come to shape and generate action and participation. Through challenging and destabilising these dominant forms of reason possibilities for alternative ways of knowing and acting are created, increasing the options for change. Popkewitz's (1999) social epistemology has thus provided me with a critical lens for reflecting on participants' engagement with / within dominant forms of knowledge and participation in reflexive processes of change.

Further, Popkewitz's (2000:13) '... stories of global / national relations' has opened up an analytical lens to critically review the way in which reflexive competence has come to be constituted in the discourse of change in education and training in South Africa. In this context, Popkewitz (2000:11) refers to the way in which global discourses of change are brought into a relation with specific national discourses and comes to shape interpretations and possibilities for national practice. Competence frameworks of education and training, a global discourse motivated by economic rationalism (see 2.3 & 4.3) has become integrated within the socio-economic context and priorities of South Africa (see 2.4 & 4.3). This appears to have led to a mix of intentions embedded in the defining of reflexive competence in the competence-based framework of the South African NQF. Reflexivity, on the one hand, reflects an intention to encourage social change. Used in the context of a competence-based framework could however shape interpretations within an economic rationalist framework and so limit possibilities for change. Drawing on Popkewitz's (2000) globalisation / regionalisation thesis, that alerts us to the way in which ideas come to be constituted within socio-historical context, I reflect critically on the implications of global discourses of competence shaping possibilities for reflexive social processes in the context of transformation in South Africa (see 4.6).

Collectively, these theses have provided me with a framework for analyzing the data gathered through the research. This section serves to introduce the theoretical perspectives that have informed the framework of analysis which is discussed in more depth in chapter three.

1.6 OVERVIEW OF THE THESIS

Chapter two provides an overview of the context within which the research was conducted. Throughout the research experience, I was confronted and challenged by the shaping influence of the broader and immediate context on the research. This chapter thus explores the notion of context as an important methodological and epistemological issue as a backdrop to the research design decisions made and the framework for analysis of data. These are discussed in chapter three. As such, this chapter introduces international trends in adult education and the move towards lifelong learning. It briefly introduces processes of standards-based reform and sketches some of the critiques surrounding these changes towards competence-based education and training. It similarly sketches the national context of change in education and training with a focus on the development and introduction of the South African NQF. It provides a brief overview of trends in environmental education processes and highlights some of the opportunities in the South African NQF for environmental education. It further explores the RU/GF course as an example of an environmental education course for adults encouraging the development of critically reflexive practitioners seeking to respond educationally to environmental issues and risks in context.

Against the backdrop of the contextual factors introduced in chapter two, chapter three attempts to clarify and motivate for the research design decisions that I made and which guided the study. It explores the multiple and varied roles which I (as researcher) played in the research process and highlights some of the dilemmas, tensions and issues that emerged out of these multiple and varied roles. It further clarifies the interpretivist research orientation within which the study was conducted and highlights the notion of reflexivity in research. It further describes the multiple embedded case study approach used in the research and highlights the significance of a case study approach in exploring phenomena that cannot be abstracted from social context. This chapter provides an overview of the data collection techniques and data analysis processes applied in the study and focuses specifically on the framework of analysis drawn from the literature review undertaken through the study.

Chapter four explores the notion of a changing political economy of professional development in adult learning. As such, it involves an interrogation of the nature of professional development amongst adult learners and attempts a reinterpretation of the notion of reflexivity within the

South African NQF. Given the context of the RU/GF course as an adult education course for environmental education practitioners as research 'site', the central theme here is reconfiguring professional development processes for adult learners in a context of global change. Here I explore the theme of adult learning from both a global perspective, and more specifically adult learning in the context of the South African NQF and environmental education processes. In this chapter I focus on the shaping influence of globalisation on education and training processes, highlighting specifically trends towards lifelong learning. I explore in further detail international processes in standards-based reform and the emerging trend of competence as a defining framework for education and training. Here I provide a further critique of standards-based reform processes following on from the introduction in chapter two and provide some insight into the hybrid nature of the South African NQF. I further explore the notion of lifelong learning and the implications for environmental education professional development programmes. This chapter is concluded with a critical review of reflexive competence in the South African competence-based framework.

Chapter five focuses on case of the RU/GF course as an example of a course encouraging the development of reflexivity through its orientation, intentions and course processes. I begin this chapter by highlighting the need for reflexive processes to respond more effectively to the increasing scope of contextual environmental issues and risks. Further, I introduce the challenges in attempting to assess reflexive competence and I introduce various integrative elements of competence that supports an engagement in a reflexive review in / of practice. I further provide a more detailed account of how the aims, structure and orientation of the course shape different course processes and how these course processes enable and support an engagement in reflexive processes and the development of reflexive competence. This chapter provides a general account of opportunities inherent in course process that enable and support an engagement in reflexive processes and the development of reflexive competence. These course processes are explored in further detail in chapter six as they were observed in the tutorial group case studies in the research process. The chapter is concluded by highlighting the course as one in transformation and provides some insight into some of the changes in the course over time, supported by various research projects.

In chapter six I provide a descriptive account of participants engagement within reflexive processes and the development of reflexive competence drawing on the analytical framework introduced in chapter one and three. Given the emergence of the significance of socio-historical contexts shaping reflexive agency, I firstly introduce the six case study participants and the multiple social contexts that have shaped their participation in the reflexive opportunities provided for in the course. In this introduction, I focus on participants' academic background,

professional background, experience in environmental education, professional contexts and their expectations of the course. Secondly, in this chapter I provide a descriptive account of the range of course processes as they 'play out' in the three tutorial group case studies to similarly provide insight into the social actions and interactions within these tutorial groups. Thirdly, I describe participants' engagement in reflexive processes and the development of reflexive competence in relation to course processes introduced in the previous section. This section draws on the various integrative elements of reflexive competence developed through the literature review of the study. In concluding the chapter I locate participants' engagement in reflexive processes in the multiple social contexts out of which reflexive agency has emerged. In this section I highlight various tensions that emerged as participants' engage within processes of exploring new and different ways of thinking about and responding to environmental issues and risks in contexts shaped by dominant and scientific knowledge frameworks and the social roles and identities inscribed in these.

Chapter seven encompasses a discussion of and recommendations for the reorientation of course processes in the RU/GF course. In this chapter I draw specifically on the ideas and perspectives around the reinterpretation of reflexive competence, as introduced through the literature review in this research study. I further draw on the perspectives of reconfiguring adult learning processes with the intention of gaining insight into various pedagogical practices that support the development of reflexive competence. In using the theoretical perspectives introduced through the thesis, an attempt is made to gain deeper insight into course processes that support and enable an engagement in reflexive processes and the development of reflexive competence. Drawing on these discussions of reflexivity in relation to course processes, certain recommendations are made with respect to a reorientation of course processes in the RU/GF course. These recommendations include suggestions for a reorientation of course assignments, assessment processes, the role of theory in reflexive explorations and tutorial support processes. These recommendations also emphasises the need for closer attention to the reflexive orientation and aims and how these shape course processes that support change in context.

The thesis is concluded with chapter eight which includes concluding discussions of the implications of reinterpreting reflexive competence, as introduced through the literature review in the thesis, and as explored in the RU/GF course case study, for learning programme development in the context of the South African NQF competence-based framework. In particular, the chapter reviews the challenges of standards-based reform in a context of transformation, as these relate to the interpretation of reflexive competence in the South African NQF. The chapter argues for a need to reinterpret reflexivity if the transformation goals of the

NQF are to be considered critically by course developers (particularly environmental education course developers). Following this, the chapter provides a summative perspective on *course design and course processes* as these relate to an engagement in reflexive processes of change and the development of reflexive competence. This presents course developers with 'possible implications' for learning programme design, generally in the context of the NQF, and more specifically for environmental education professional development in the NQF. The chapter also summatively reflects on some of the *challenges associated with a re-configuring of adult learning processes and professional development*, as these became evident in the RU/GF course case study. These insights are again offered as 'potential implications' for learning programme development within the NQF, more broadly, and for environmental education professional development, more specifically. The chapter and thesis is concluded with a further reflexive review of the research study (following on from the reflexive review in chapter 3) and makes recommendations for potential future research to enable and support an engagement in reflexive processes and the development of reflexive competence in the context of the RU/GF course and the South African NQF.

CHAPTER TWO

CONTEXTUAL FACTORS SHAPING THE RESEARCH STUDY

2.1 INTRODUCTION

Wolcott (1992:6) describes any research process as having '... dual facets ... two sides to the same coin' these being the ideas that drive the research process (methodology) and the inquiry procedures (methods) with which these ideas are pursued. Through the research experience, I have come to recognise the significance of the research context in shaping these dual facets of the research study. I concur with Goodson (1985:126) on the importance of clarifying the research context '... to understand how thought and action has evolved in ... social circumstances'. In this chapter and as a precursor to discussing the research design decisions and framework for analysis (see chapter 3) I discuss the research context as an important methodological *and* epistemological issue. In particular, I focus on the following contextual factors:

- ◆ international trends in adult education and training;
- ◆ international trends in the development and implementation of standards-based reform processes;
- ◆ the changes in education and training in South Africa, specifically the development and implementation of a National Qualifications Framework (NQF);
- ◆ an overview of environmental issues and risks, focusing particularly on the southern African context;
- ◆ trends in environmental education processes;
- ◆ opportunities for environmental learning in the South African NQF; and
- ◆ current issues in the RU/GF course.

2.2 THE CHANGING LANDSCAPE OF ADULT LEARNING

In the 1960's and 1970's, adult education (internationally and to a lesser extent in South Africa, except in development settings) was '... founded on a mission of social change' (Nesbit, 1999:271) and was dominated by learning for emancipation, empowerment and social transformation (Lotz, 1999a:56; Stock, 1996:11). Parallel to these processes of '... education by and for the workers [as] a major engine for social and political change' were more instrumentalist forms of adult education processes focusing on staff training and development (Stock, 1996:11). Trends in the 1980's and 1990's reflect economic rationalism and the growing market economy as underlying the upsurge in the demand for and provision of adult education programmes (Edwards, 1997:77; Tuijnman, 1996:26). Particularly in more industrialised countries greater emphasis is being placed on workforce competences and skills as means of production become more complex in terms of technology, production systems and organisational structures (Tuijnman, 1996:31; Stock, 1996:18).

As recent economic, cultural and social transformations bring into question traditional assumptions of and practices in education, adult educators are challenged with designing learning opportunities which move away from instrumentalist forms of learning characterised by the transfer of knowledge and skills (Nesbit, 1999:265). Knowles (1996:83) notes that in rethinking adult education processes it is no longer functional to define education as a process of transmitting what is not known, but rather as a process of lifelong discovery of what is not known. This rethinking of adult education processes implies the need for reflexive learning processes that encourage ongoing learning beyond existing and dominant knowledge frameworks (see 1.5). The challenge for adult educators is to design learning opportunities that develop the capacity for learning how to learn so that people may continue to learn by themselves throughout their lives (Nesbit, 1999:265).

In countering the socio-economic inequalities that traditional education practices generally seek to reinforce, learning should be seen as a means to constructing knowledge that liberates oneself and others from power (Edwards & Usher, 1994:2). As such '...learning becomes a societal endeavour instead of merely an educational venture' (Nesbit, 1999:274). In expanding on earlier trends in adult education of emancipation and empowerment, Jansen and van der Veen (1996:123) call for adult education processes which initiate and act as agent for broad cultural debate. This view is supported by Stock (1996:21) in arguing for learning processes that enable learning to understand and change a hostile social milieu. These perspectives on adult learning processes suggest the need for learning as social processes of change that challenge the power relations embedded in dominant knowledge frameworks, reflecting a social epistemology approach to change as proposed by Popkewitz (1999; see also 1.5).

Recent trends in adult education processes reflect the recognition that adult learners cannot be taught as children have traditionally been taught, given the particular characteristics of the adult learner (Knowles, 1996:83). Adult learners have a different self - concept from children and have more experience to draw on in learning situations. Adult learning is determined by social roles that are often problem focused with significant implications for adult learning processes (*ibid*:84). More importantly, adult learners seek knowledge that is relevant to their life experiences, '... really useful knowledge' (Usher *et al*, 1997:33) and would most likely reject education processes which appear irrelevant to them (Knowles, 1996:83; Stock, 1996:21). These trends in adult education foreground the important shaping influence of context⁵ in defining educational discourses, forms and practices (Usher *et al*, 1997:24). This shaping influence of context brings with it educational forms which express difference in their diversity and provides a space for diversity of voices and so lessens the power of the educator to define purposes, contents and forms of learning (*ibid*). Within this context of evolving thinking about adult education processes, adult educators are confronted with challenges of what is worth knowing, what the purpose of knowing is and how best to enable learning amongst adults (Lotz, 1999a:57).

In this section I have used the term adult education to describe the shifting trends in provision of learning programmes for adults. Edwards (1997:70) however argues that the notion of 'adult education' suggests certain boundaries that serve to exclude certain forms of learning which fall outside of this boundary (see 4.4.2). An example of this is that of institutional boundaries that marginalise learning taking place outside of the formal institutional setting (Edwards, 1997:70). Further in the report I use the term 'lifelong learning', inclusive of adult learning processes that seeks to emphasise learning and the learning process rather than focusing on the provision of learning programmes to an exclusive group of adults in particular settings (*ibid*:75). In using this term, I attempt to reflect in this research a broader view of learning and learning opportunities for a varied group of learners taking place in varied and new sites and incorporating alternative purposes and new forms and contents of learning (see 4.4).

2.3 STANDARDS BASED REFORM: AN INTERNATIONAL TREND IN EDUCATION AND TRAINING

Internationally, education and training policies and practices are currently being influenced and shaped by processes of globalisation as more and more countries are integrated into the global capitalist market economy (Kallaway *et al*, 1997:1; Sedunary, 1996:387). For some countries,

⁵ The term context used in this study draws on Popkewitz's (1999:22) challenge to modernist conceptions of context as bound within particular geographical spaces fixed within a changing sequence of time to viewing context as '... discursively constructed practices' shaped by a range of socio-historical factors and processes (Popkewitz & Brennan, 1998:12).

such as the United Kingdom, Wales and Northern Ireland initial education and training reform processes have been primarily motivated by imperatives to meet the needs of the changing global economy, by improving the skills base of the labour force (Usher & Edwards, 1994:103). In others, such as Australia and more recently South Africa the motivation for restructuring education and training is being argued from an economic perspective as well as from a social perspective to address inequalities perpetuated through traditional educational policies and practices (Sedunary, 1996:386; see also 2.4 & 4.3). Irrespective of the motivations for change, transformation in education and training is taking the form of developing national standards being articulated as competences and commonly referred to as competence-based systems of education and training.

As is characteristic with change in any arena, the introduction and implementation of competence-based systems has not been without difficulties. Lively debate and critique around competence-based systems of education and training has ensued and many questions have been, and are being raised with regard to the development, use of and assessment of competence. Some critiques argue against competence-based systems questioning whether competence is an adequate conceptualisation of human activity and thus a valid means of assessment (Edwards & Usher, 1994:1). Others argue that competence has been too narrowly conceived (Kraak, 1999:46; McKernan, 1993:346) not reflecting the significant relationship between thought and action (Barnett, 1994:76) and that they '... marginalise knowledge and understanding unrelated to workplace performance' (Usher & Edwards, 1994:105). A further argument, suggested by Edwards and Usher (1994:1) is not about whether competence-based systems will work or not, but rather about the role that competence plays in 'imposing' power over people (see 4.3.2) thus opening questions surrounding the social epistemology of competence-based systems. Usher and Edwards (1994:103) see competence as a '... normalising gaze' that seek to encourage self-management of people (governmentality), in relation to a set of predefined norms, thereby imposing power over and controlling individuals (see 4.3.2).

The critique outlined above appears to be mainly at the level of defining and using competence for assessment. Usher and Edwards (1994:106) and Kraak (1999:50) suggest an extension of the range of competences generally defined to include a wider resource of knowledge than that which is normally defined to underpin specific work related performance. This broader range of knowledge Usher and Edwards (1994:106) describe as '... resistant and oppositional knowledge and understanding engendered through alternative discourses'. Barnett (1994:74) suggests that competence needs to take account of specific educational aims so as to define and assess competence as part of the broader learning process. His (*ibid*) recommendations are made in relation to his critique of narrow definitions of competence in the United Kingdom

National Vocational Qualifications that are primarily vocational and skills focussed. Sedunary (1996:389) further suggests a consideration of the learning context in defining and assessing competence, so that the learning process is grounded in social practice. This view is similarly noted by Kraak (1999:47) in commenting on the assumption in competence-based models of the transferability and applicability of learning in differing knowledge and societal contexts. He (*ibid*) notes that generic competences are usually acquired within a specific context and as a result are not applicable in other knowledge or occupational contexts.

In responding to these critiques of competence-based systems, this research attempts to answer Edwards and Usher's (1994:13) call to examine more critically the role of competence in society through a focus on reflexivity and reflexive competence in the South African context of transformation (see 4.3 & 4.6). The research further attempts to provide deeper insight into the implications of competence-based education and training in the context of the NQF and through this support / challenge the development, use and assessment of competence in the design of curricula for courses and professional development programmes for adult environmental educators.

2.4 THE CHANGING CONTEXT OF EDUCATION AND TRAINING IN SOUTH AFRICA

South Africa post 1994 is characterised by significant change aimed at addressing past inequalities and striving towards developing a nation free from all forms of discrimination. In the education arena standards-based reform is being introduced through the development and implementation of a National Qualifications Framework (NQF). The NQF attempts to address some of the shortcomings of national qualifications frameworks in other countries, specifically the too narrow focus on competence determined by capitalist market forces and associated economic rationalism that influences the way in which these frameworks are articulated (see 4.3; see also National Training Board, 1998:30). As such, the NQF places a strong focus on the idea of reflexive and that attempts to move education and training beyond mere skills training encouraging the development of lifelong competence to engage with processes of change (see 1.5.4).

Over the past four decades education has been a site for significant struggle against the political ideologies of colonially derived apartheid. Education and training was characterised by a segregated and unequal system of education, authoritarian decision-making structures, curriculum and resource materials largely irrelevant to the lives of many South Africans, teaching methods which 'domesticated' learners and schools that played a significant role in reproducing an inequitable society (Jansen, 1999:4; National Training Board, 1998:13). In response, this period was marked by the emergence of various social groups exploring policy

options that would seek to address the consequent socio-economic inequalities characteristic within South African society under the regime of the National Party government (Badat, 1997:15). Through some of these social movements, the historical roots of principles and policies underlying transformation in education and training and particularly the NQF can be traced (Jansen, 1999:4; Chisholm, 1997:50).

Kraak (1999:21) traces the history of outcomes-based education and the establishment of the NQF in South Africa through three historical phases from 1970 to present day. These include: (1) the Peoples' Education Movement emerging during the 1970's and early 1980's; (2) the period of South Africa's re-entry into the global market prior to the 1994 elections; and (3) the introduction of an outcomes-based system of education and training following the 1994 elections.

2.4.1 The Peoples' Education Movement

The Peoples' Education Movement grew out of widespread revolt over conditions in schooling around mid 1980's (National Training Board, 1998:13). In attempting to respond proactively to the crisis in education it aimed to put forward a vision for education and training in the future of South Africa (*ibid*). Central to the principles of the Peoples' Education Movement was its commitment to contributing to the development of a just and democratic society (*ibid*). Some of the key propositions include the democratisation of education, relevance in education, equal accessibility and bridging the gap between theoretical knowledge and practical life (Kraak, 1999:22). In addition, it called for transformation in educational content and processes to encourage critical and creative thinking that promote the values of democracy, non-racism, collective work and active participation (National Training Board, 1998:14). The initial proposals of the Peoples' Education Movement were taken forward through the National Education Policy Investigation (NEPI, 1992), whose recommendations for educational policy options were articulated in a series of publications (*ibid*). NEPI provided a framework for thinking about education after apartheid, emphasising non-racism, non-sexism, democracy, equality and redress as a basis for restructuring education (Jansen, 1999:4).

2.4.2 South Africa's re-entry into the global market

Following the unbanning of the African National Congress (ANC) and the release of key political prisoners, South Africa's re-entry into the global market necessitated significant restructuring in education and training. In response to the economic needs of the labour market, the National Training Strategy Initiative (NTSI, 1994) later reconstituted as the National Training Board (NTB) put forward a proposal for integrating education and training and thinking about learning as a

lifelong process (Kraak, 1999:30). Despite its departure from the more radical proposals for democratic change emerging from the Peoples' Education Movement and the NTSI's preoccupation with a rapidly globalising economy (Jansen, 1999:6) some similarities do exist in the proposals made (Jansen, 1999:6; Kraak, 1999:24; National Training Board, 1998:14). These include the demand for a single, non-racial national system of education and training and the breaking down of traditional barriers between mental and manual labour and education and training (Kraak, 1999:24).

2.4.3 The introduction of outcomes-based education in South Africa.

Following the NTSI's proposals were various ANC led policy documents such as the ANC's 'A Policy Framework for Education and Training' (1994) which reflected a vision for an integrated system of education and training premised on the idea of lifelong learning (Kraak, 1999:34). At around the same time members in The Congress of South African Trade Unions (COSATU) were in constant dialogue with their labour counterparts in Australia sharing frameworks, proposals and experiences on an integrated system of education and training based on competence (Jansen, 1999:6). The White Paper on Education and Training published in March 1995 first officially sanctioned the idea of a flexible and integrated system of education and training (Chisholm, 1997:60; Kraak, 1999:34). In October of the same year, the South African Qualifications Act was promulgated that provided for the establishment of a single national South African Qualifications Authority (SAQA) whose responsibility it would be to develop, implement and manage a NQF (Kraak, 1999:35).

Processes of transformation in education and training in South Africa have been prompted from two perspectives. On the one hand, an integrated and unified system of education and training is motivated for in bringing about greater equity and redress and, on the other hand, to improve the quality and relevance of learning for the world of work (Chisholm, 1997:50; De Clercq, 1997:143). To facilitate this twofold agenda the South African NQF is premised on an integration of education and training, flexibility to enhance mobility between learning contexts, accessibility for all to learning opportunities, promoting lifelong learning and providing for the recognition of prior learning (Christie, 1997:113).

In support of the development and implementation of the NQF, the Education, Training and Development Practices Project⁶ (ETDP) undertook research to inform the process of standards generation in the field of education, training and development (National Training Board, 1998:42). In attempts to develop a process for standard setting, the ETDP project drew on

⁶ The ETDP project emerged from the initial work put forward by Working Committee 3 of the National Training Board of 1993.

experiences of various industrialised countries that have engaged in standards-based reform processes, such as the United Kingdom, Scotland, Australia and New Zealand (National Training Board, 1997a:49). In considering the context of socio-economic and political change in South Africa, the ETDp project proposes a model for standard setting in the NQF which defines competence beyond the narrow, technicist view of operational 'know how' (see 1.5.4 & 2.3). Competence is defined in a way that supports a commitment to lifelong learning, bridges the old theory-practice divide and captures the capacity to learn about and from our own learning (National Training Board, 1997a:49). This competence now used for standard setting processes in the NQF in South Africa has been termed applied competence integrating practical, foundational and reflexive competence (see 1.5.4). Harley and Parker (1999:185) note that reflexive competence, the distinguishing feature of the South African NQF (see 2.3), is linked to critical and ethical dimensions, to the values and dispositions that are linked to life-long learning and to citizenship. These visions, for a competence-based system of education and training imply a response to some of the critiques noted in 2.3. It similarly suggests some resonance with current trends in adult learning and lifelong learning, discussed in section 2.2.

This broad redefining of competence in itself does not however, ensure an alternative approach to the defining, use and assessment of competence in the South African context (see 4.6). Deacon and Parker (1999:65) write that competence statements in themselves are empty, what gives them meaning are their link to practice and assessment in a specific context. Important in defining, using and assessing competence is considering the transformation agenda (economic, political and social) underlying the introduction of a competence-based model in South Africa. To this end, Deacon and Parker (1999:72) re-emphasise that '... it is [in] their translation into learning programmes ... that transformation will occur'.

In this research I attempt to critically examine how the development of reflexive competence can be integrated into environmental education learning programmes to meet the transformation agenda underlying economic, political, social and environmental change in South Africa (see 4.6.3). While the focus of the research is on reflexivity and reflexive competence, this is considered within the broader framework of applied competence in the South African NQF competence framework.

2.5 THE STATE OF THE ENVIRONMENT

Environmental concerns have gained increased significance through a range of international conferences over the past three decades. Most notably amongst these were the first global environmental conference held in Stockholm (1972), the Tblisi Declaration (1978), the World Conservation Strategy (1980), the Earth Summit (1992), the Earth Summit +5 (1997) and the

World Summit on Sustainable Development (WSSD, 2002). A significant outcome of the 1992 Earth Summit, carried forward by the Earth Summit +5 and the WSSD is Agenda 21, a comprehensive blueprint for global action addressing increasing environmental degradation. Through these conferences the relationship between environment and developmental concerns were prioritised on the international agenda and various governments committed themselves, through the adopting of Agenda 21, to addressing development issues including addressing environmental degradation through sustainable development. Debates surrounding the WSSD, held in Johannesburg, South Africa in August / September 2002, provide a somewhat bleak picture of the state of the global environment and global societies' ability to respond to environmental and development issues. In reflecting on the thirty years since the first international environmental conference in 1972, the 'Global Environment Outlook 3' report (United Nations Environment Programme (UNEP), 2002) reflects the continued destruction of 70% of the natural world, the mass extinction of species and the collapse of human society in various countries.

As reflected in some of the more recent State of the Environment Reports (World Wide Fund for Nature (WWF), 2002; UNEP, 2002), natural ecosystems continue to decline, ecological pressure of humanity on the earth continues to increase, the number of people living in absolute poverty continue to increase and an increasing number of the world's population of children remained deprived of any schooling. For example, twenty five percent of all plant species could be extinct by the year 2025 and extreme weather events have left three million people dead in the past five years (Department of Environmental Affairs and Tourism, 2002:1-13). According to WWF's 'The Living Planet Report' (2002:4) human consumption of natural resources exceeds the earth's biological capacity by twenty percent. In developing countries ninety-five percent of sewerage and seventy percent of industrial waste is dumped untreated into watercourses (Department of Environmental Affairs and Tourism, 2002:10). Income of the richest one percent of the world's population is equivalent to the income earned by the poorest fifty-seven percent (*ibid*:5). The world's skewed economy means that the rich have more buying power than the poor and the rate of illiteracy for Africans over fifteen is forty-one percent (*ibid*:4).

In southern Africa, communities are experiencing the effects of severe levels of poverty that have dire consequences for human, social and economic development. Three hundred and fifty million people in sub-Saharan Africa live on or less than one US dollar per day with one hundred and fifty million children living below the poverty line (UNEP, 2002:40). Agriculture forms a primary part of economic activity in many African countries, however large quantities of crops produced are exported leaving the threat of severe food shortages in various countries. For example, between 1975 and 1999 cereal production increased from fifty-eight million tons to one hundred and six million tons though at least sixteen countries experienced food shortages in the

same period (*ibid*:70). Expansion of agriculture has led to the clearing of natural habitats, reducing vegetation cover and exposing soil to water and wind erosion that often has the effect of the need for applying more chemicals to productive processes to ensure productivity (*ibid*:71). Fifty percent of southern African wetlands have been lost due to drainage for agriculture and urban development, overgrazing and the collection of firewood and pollution due to effluent discharge (*ibid*:128). Many people die annually from water related illness due to poor water supply and sanitation (*ibid*:159). These are amongst some of the increasing scope of environmental issues and risks confronting communities in southern Africa and poverty, famine and malnutrition continue to threaten the lives of many living in this region.

The 'State of the Environment: South Africa' report reflects severe habitat losses, threats to biological resources, increased demand on physical resources and some significant poverty related issues amongst the largest sector of the population (Department of Environmental Affairs and Tourism, 1999b:17). For example, fifty percent of wetlands have been transformed for cultivation purposes and human settlement (*ibid*). Various plant and animal species are threatened and all major rivers have been dammed or modified to meet the demand for water (*ibid*). Fifty percent of the South African population lives in urban areas and nearly half of the population lives in informal dwellings (*ibid*). Forty-five percent of the population does not have access to clean water and only sixty percent have access to electricity (*ibid*). Twenty percent of households earn less than five hundred rands per month and nearly twenty percent of the work force is HIV positive (*ibid*).

'People, Planet and Prosperity' was the slogan for the WSSD (Department of Environmental Affairs and Tourism, 2001/2002:5). This reflects the inextricable link between the environment and social and economic development, an idea introduced at the first Earth Summit held in Rio de Janeiro in 1992 (Department of Environmental Affairs and Tourism, 2002:2). As a follow on to this initial Earth Summit, the WSSD in recognising poverty and inequality as the biggest threats to global sustainable development called for an improvement in the quality of life for all the world's people without increasing the use of natural resources beyond the earth's carrying capacity (*ibid*:1). Through a series of preparatory meetings an attempt was made to generate high-level political commitment for action at the WSSD (Mail & Guardian, 2002b:14). Though 80 percent of a plan of action was agreed on, there remained various issues of contention, many of which remained unresolved following the WSSD (*ibid*). The main areas of disagreement revolved around the 'economic platform' of sustainable development focusing on issues of trade and finance (*ibid*). Developing countries, for example, see addressing issues of unfair terms of trade, recognised as an important cause of poverty, as a significant aspect for consideration in a strategy for poverty eradication (*ibid*). Developed countries also tended to differ from developing countries on the resourcing of the implementation plan (*ibid*). These issues of

disagreement highlight some of the key issues of poverty and inequality as contributors to increased environmental degradation, a concern highlighted in the preamble to Agenda 21, which reads:

'Humanity stands at a defining point in history. We are confronted with a perpetuation of disparities between and within nations, a worsening of poverty, hunger, ill-health and illiteracy, and the continuing deterioration of the ecosystems on which we depend for our well being'.

The WSSD sought to foster the vision of Agenda 21 in encouraging a global partnership for sustainable development to address issues of disparity between and within nations (Department of Environmental Affairs and Tourism, 2002:13). In this sense, environmental education becomes particularly significant in the South African context of change in fostering sustainable development and promoting issues of human rights and hence the focus of this study.

2.6 ENVIRONMENTAL EDUCATION AS AN EMERGING RESPONSE TO ENVIRONMENTAL ISSUES AND RISK

In addition to the prioritisation of environmental concerns through the range of international conferences environmental education has been recognised globally as a key response to the increasing range and scope of environmental issues and risks (Lotz, 1996:1; O'Donoghue, 1993b:29; see also 2.5). In particular, Chapter 36 of Agenda 21 highlights the crucial role of education in promoting sustainable development. The important role of education in responding to environmental issues and risks and the challenges of sustainable development was highlighted again at the WSSD, through a proposal to declare a United Nations Decade of Education for Sustainable Development.) However, the continued increasing scope of environmental degradation and the nature and extent of emergent issues and risks implies that past and current responses to environmental issues and risks appear to remain minimally effectual, if not largely ineffective (Beck, 1992, Beck, 1999 & Beck, 2000). This requires us to consider critically the processes through which we respond to environmental issues and risks and attempts to seek more effective responses to these through education.

Earlier conceptions of the environment and environmental issues reflect a narrow focus on the bio-physical or 'nature / natural' components of our surroundings. In this sense Beck (1992:24) comments critically that debates around environmental problems are often conducted exclusively or dominantly in terms of natural science and '... runs the risk of atrophying into a discussion of nature *without* people' thus ignoring issues of social and cultural significance. Common responses to environmental concerns include targeted messages, awareness raising and nature-centred experiences (O'Donoghue, 1993b:29). Increasingly the futility of these

narrow approaches to responding to environmental issues and risks are being recognised and particularly its inadequacy in responding to the complexity of contemporary issues and risks (Lotz, 1999a:49).

Janse van Rensburg (1994:1) views the environment as a social construct, referring to a system of interacting bio-physical, social, economic and political dimensions (O'Donoghue & Janse van Rensburg, 1995:18). Environmental issues and risks are inextricably linked to political, social and economic systems, structures and processes, highlighting the complexity and interrelated nature of these (*ibid*, Lotz, 1999a:49). This perspective on the environment places people at the centre of the environment and environmental issues become understood as '... social problems, problems of people, their history and living conditions, their relation to the world and reality, their social, cultural and living conditions' (O'Donoghue & Janse van Rensburg, 1995:18; Irwin, 1995:168). This perspective on the environment is reflected in Agenda 21 and was reiterated through the central issues of focus at the WSSD (see 2.5). Within this changing conception of environmental issues and risks, environmental education processes come to extend beyond issues of conservation to include issues of development, human rights, peace and social justice (Lotz, 1999a:49).

Beck (1992:21) talks of environmental issues as global risks unleashed through processes of increased industrialisation and overproduction (see 1.5.1). As economic growth is fostered and remains unchecked, more and more unknown and unintended consequences result which cannot be contained within specific national boundaries and specified time frames (Beck, 1994:176). In this sense Beck (*ibid*) talks of a 'world risk society' where no one remains unaffected. However, some people are more affected by risks than others that often follow class or strata positions, thus leading to the emergence of social risk positions (*ibid*). For example, the African continent has felt the first effects of global warming and climate change said to be the result of globally produced excessive gas emissions (Department of Environmental Affairs and Tourism, 2002:10). Extreme weather events such as droughts and floods have resulted in vast crop failures and a large proportion of the southern African community is threatened by severe food shortages and starvation (Mail & Guardian, 2002c:12). This situation exacerbates the already alarming levels of poverty existent on the African continent. Guha and Martinez-Alier (1997:47) further describe various examples of the natural resource base in Latin American countries being taxed by the dual impact of production for export markets and local consumption. Export markets, primarily located in developed countries, encourage increased production with the allure of the 'benefits' of increased economic growth. In addition, many African and Latin American countries are forced to repay large international debts through the export of cash crops and forestry products (*ibid*:51). Resources are then further taxed by local consumption. In this sense, Guha and Martinez-Alier

(1997:46) refute the notion that poverty creates environmental degradation and argue that environmental changes in developing countries need to be seen in the context of international division of capital (*ibid*:51). These examples highlight the critical effects of global inequality in perpetuating environmental degradation and the crucial need, reflected in the vision of the WSSD, for collaborative action in seeking effective responses to environmental issues and risks (see 2.5).

Global risks Beck (1992:23) argues are constructed in terms of the knowledge that exists about them and in this way '... knowledge gains a new political significance'. Open to social definition and construction risks can be changed, dramatized or minimized within dominant knowledge frameworks that represent particular socio-political and economic interests and from which emerge key social, economic and political positions within society (*ibid*:23, 31). Complex and interrelated environmental issues and risks are thus seen as having their causes in deep-seated values, social systems, structures and practices (Janse van Rensburg, 1994:1).

As we come to a broader understanding of environmental issues and risks and probe more deeply into their root causes, different approaches are emerging to effectively respond to these (Janse van Rensburg, 1995a:22). Recent approaches view environmental education as social processes of change initiated through critical and contextual review and action (Janse van Rensburg, 1994:14; Lotz, 1996:7). Reflecting a socially critical orientation, environmental education processes seek to encourage a critical examination of and active challenge to dominant socio-economic and political systems, structures and processes that give rise to and sustain power relations predominant in society and from within which environmental issues and risks emanate (Fien, 1993:16; Lotz, 1996:1). Socially critical approaches to environmental education can however, become narrowly interpreted and foster an instrumentalist approach to learning as educators seek to 'empower' others and so (paradoxically) sustain the power relations which they intend to challenge (Lotz, 2001b:12). Socially critical approaches foster an ideological critique as a basis for challenging the *status quo* (Fien, 1993:37). In this sense responses to socio-ecological issues and risks could be narrowed to a mere critique of existing social systems, structures and processes without a possible exploration of alternative ways of thinking of and acting on / within these issues and risks (see 4.6.3). This could either limit the effectiveness of such responses or result in inertia, as these systems, structures and processes appear to be too powerful to confront and challenge (Janse van Rensburg & Du Toit, 2000:35).

Reflexive modernisation is a stage in modernity where society begins reflecting on the problems resulting from globalising, techno-economic development and unknown and unintended consequences become a dominant force in history and society (see 1.5.1; see also Beck, 1992:19-22). The focus of political and economic problems shifts from an opposition to

traditional class divisions to the unpredictable and uncontrolled influences (risks) of scientific and technological innovations in society (Jansen & van der Veen, 1996:123). Scientific rationality comes to play a dominant role in an attempt to manage the socio-ecological risks resulting from techno-economic development. New technologies are developed to organise labour and communication amongst people (eg, computerisation, mass media) that come to reform the social organisation of life (Jansen & van der Veen, 1996:123). The consequence of this is that new risks for social and biological life are unleashed bringing with it more unpredictability, more uncertainty, and more unintended consequences (*ibid*). In this sense Beck (1994:9) writes that '... risks are infinitely reproducible' as they reproduce themselves with the decisions and viewpoints resulting from attempts to manage these risks.

This unpredictable, uncertain quality of unintended consequences necessitates different and *new ways of thinking about and acting on / within* the increasing scope of socio-ecological risks. Linear approaches to responding to these socio-ecological issues and risks assume a closed circle of formally responsible experts and people within social foundations, systems, structures and processes, who explore options and act on issues and risks (Beck, 1999:125). These approaches do not take account of alternative forms of thought and action that might exist outside of these closed social foundations, systems, structures and processes, and as such cannot accommodate for the uncertain and unpredictable character of risks. *Responding to this unpredictable and uncertain quality of issues and risks requires reflexive, non-linear approaches that enables open processes of learning which encourage an exploration of new and different possibilities of thinking about and acting on socio-ecological issues and risks* (Ward, 2002:29, my emphasis). These concerns are central to this study, and its intention to investigate reflexive competence.

Through processes of continuous reflexive review, the RU/GF course attempts to seek more effective ways of supporting participants to respond to the complex and interrelated socio-ecological issues and risks that confront them in context. Central to this idea of effective responses is the notion of reflexivity that focuses on the uncertain and unpredictable nature of unintended consequences. For Beck (1999:132) an important issue in the period of reflexive modernization is how to deal with unawareness and how to '... decide in and between manufactured uncertainties' (see 1.5.1). This research project attempts to explore environmental education processes that encourage participants to not only explore more critically what is known (critical reflection), but to also acknowledge and address unawareness and explore options for change (reflexivity) in the context of socio-ecological issues and risks in southern Africa.

2.7 OPPORTUNITIES FOR ENVIRONMENTAL EDUCATION PROCESSES IN THE NQF

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In line with international trends, various recent national policies in South Africa reflect the importance of responding to the increasing scope of environmental issues and risks. The constitution of South Africa (section 24) enshrines the right of every citizen to an environment that is not harmful to his / her health or wellbeing and to an environment protected for the benefit of both present and future generations. Environmental concern is highlighted in the National Environmental Management Act (1999), by stressing environmental education as a means to encouraging community participation in addressing environmental issues (Department of Environmental Affairs and Tourism, 1999a:36). The White Paper on Education and Training (Department of Education, 1995:22) further advocates that environmental education processes are '... a vital element of all levels and programmes of the education and training system ... to create environmentally literate and active citizens [to] ensure that all South Africans ... enjoy a decent quality of life through sustainable use of natural resources'. In the NQF SAQA (see 2.4) has defined critical cross-field outcomes, which serves as a set of core outcomes and must be integrated into all qualifications (Department of Education, 1998:41; see also 4.6.3). Amongst these critical outcomes are those that reflect education as a means to developing a critical understanding of and encouraging collective action for problem solving and addressing environmental and other social and economic concerns. The recently published National Curriculum Statement (2000) emphasises the relationship between human rights, a healthy environment, social justice and inclusivity, thus foregrounding environmental education processes in the context of human rights issues in all areas of General Education and Training Band. These policies reflect the recognition of education as an important process aimed at enabling South African citizens to respond to environment and development issues at a local level (Lotz, 1999b:2).

Learning in the NQF is organised around twelve fields, including Field 05 for Education, Training and Development (Government Gazette, 1986:6). Each of these twelve fields of learning has sub-fields, for example, adult education as a sub-field of Field 05 for Education, Training and Development (*ibid*). Standards setting structures in the NQF include, amongst others, National Standards Bodies (NSBs) and Standards Generating Bodies (SGBs), made up of representatives of major stakeholder categories (McKay, 1999:29). NSBs are legally constituted bodies for each of the twelve learning fields, responsible for approving and registering qualifications in the NQF developed by SGBs in that field (*ibid*:35). SGBs are legally established for each of the sub-fields within a field and tasked with the development of qualifications (*ibid*). Within these standard setting structures of SAQA, a SGB for environmental education training and development practices (EETDP) has been established and has developed standards and qualifications incorporating environmental education

processes for EETDP practitioners working in diverse sectors, for example, industry, conservation and others (Environmental Standards Generating Initiative, 2000a:2; see also 2.4). Drawing on national policy that stresses the importance of environmental education at all levels and programmes in education, an Environmental Standards Generating Initiative was established by the Department of Environmental Affairs and Tourism in 1999 to support the incorporation of environment as a cross-field concern and has supported the development of qualifications across the twelve learning fields (Environmental Education Standards Generating Initiative, 2000b:13). A number of environmentally oriented SGBs have been established, for example, Environmental Management in Field 10 (Physical, Mathematical, Computer and Life Sciences), Environmental Health in Field 09 (Health Sciences and Social Services) and Heritage in Field 02 (Culture and Arts).

These standard setting processes in the NQF open up opportunities for the accreditation of environmental education in diverse learning programmes. The challenge to the SGB for environmental education has been to develop national standards, which enable reflexive learning processes, to meet the social change agenda of environmental education (see 2.6). As indicated in section 1.2, this research project with its focus on competence development in the NQF seeks to provide insight into the design of learning programmes for environmental education professional development in the context of South Africa's NQF.

2.8 CURRENT ISSUES IN THE RHODES UNIVERSITY / GOLD FIELDS PARTICIPATORY COURSE IN ENVIRONMENTAL EDUCATION

Janse van Rensburg and Le Roux (1998:3) in an evaluation report note the valuable contribution made by the course to environmental education in the region (see 1.3.1). This evaluative study particularly highlights the significant contribution to the professional development of environmental education practitioners from a diverse range of contexts (*ibid*: 79). For many participants in the course the professional development experience is simply summarised as being able to do your job better (*ibid*). More specifically, this involves a critical understanding of the work they do, developing a broader understanding of environmental issues, environmental education processes and the professional field of environmental education practitioners (*ibid*). Most participants also note the development of various skills, such as writing, reading and presentation skills and developing a professional network which contributes to working more effectively (*ibid*:80). These aspects of professional development point to the strengthening of capacity to develop and run courses and programmes in environmental education and supporting and encouraging more effective responses to environmental issues and risks in context (*ibid*:1).

The RU/GF course is an open entry, open exit course that draws participants from a diversity of academic and professional backgrounds and spans the formal, non-formal and informal domains (Janse van Rensburg & Lotz, 1997:4). The course provides various opportunities for professional development (see 5.3.3 & 5.4) and participants generally make use of these opportunities as they respond to individual professional development needs (Raven, 2000:36; see also 5.3.3 & 5.4). Given the opportunities for environmental education processes and professional development in the NQF and the principles of flexibility, mobility and recognition of prior learning, this qualifications framework holds much potential in responding to participants' requests for formal accreditation (see 2.4 & 2.7). A key issue however, facing course developers is re-orienting the course to meet the competence requirements of the NQF without compromising the open structure of learning opportunities provided and the reflexive orientation of the course.

Much concern has been raised amongst course co-ordinators and tutors with respect to re-orienting the course in the NQF competence framework. A particular concern raised is that this reorientation might narrow down learning opportunities in the course (Personal communication, Kelly, 2000). This research remains mindful to the open structure of learning in the RU/GF and the need for retaining an open and reflexive framework of learning in the context of developing effective responses to the increasing scope of environmental issues and risks. It further considers reflexive learning processes and the development of reflexive competence in the context of transformation in South Africa, responding equally to social and economic priorities (see 4.6). As such the research responds to the concerns noted and remains mindful of the potential danger of narrowing down learning opportunities simply to meet the requirements of the NQF.

2.9 CONCLUDING REMARKS

Chapter two introduces the research context as an important methodological and epistemological issue. Drawing on Popkewitz's social epistemology it describes how constructs such as reflexivity, reflexive competence and risk become socio-historically signified in society and how these begin to shape and structure knowledge and actions (eg. learning programme development). The chapter is structured around the various contextual factors out of which the research question (see 1.2) has emerged and which has shaped the various research design decisions and framework of analysis for the study (see 1.2 and chapter 3). As such, this chapter is an attempt to locate the research methodology and processes of inquiry within the changing context of South Africa, shaped by both global trends and national priorities.

As noted before, the research was undertaken in the context of a professional development programme for environmental educators within a broader context of change in education and training policy and processes in South Africa. As such various developments and trends shaping the RU/GF course are introduced in this chapter and are further explored through the thesis. These developments and trends include a brief exploration of changes and trends in adult learning processes to gain deeper insight into course processes that respond to the needs of adult learners and best support adults in their learning (see 2.2 & 4.5). In attempting to respond to the accreditation needs of course participants, the RU/GF course is being shaped by changes in education and training policy and practice in South Africa through the implementation of the NQF which is, in turn being shaped by international trends towards standards-based reform. This chapter introduces some of the main critiques of standards-based reform, discussed further in section 4.3, and explores the socio – political and economic factors that have shaped the development of the NQF in South Africa. This is offered as a background sketch to a critical analysis of reflexive competence in this competence – based framework, discussed in more depth in section 4.6 (see 2.3 & 2.4). In the context of the NQF it looks at opportunities for environmental learning in this competence based framework and raises some concern as to the appropriateness of predefining competences within reflexive learning processes (see 2.7 & 2.8). With the research being undertaken in the context of an environmental education course this chapter also provides an overview of environmental issues and risks which confront society generally and more specifically in the southern African context and introduces recent trends in environmental education, which view environmental education processes as processes of social change (see 2.5 & 2.6). From within this context and noting the various critiques and concerns of reorienting the course within a competence-based framework, the particular research question emerged: exploring course processes that enable the development of reflexive competence in ways that are enabling of processes that respond reflexively to environmental issues and risks (see 1.2 & 3.2). In addition to shaping the ideas that motivated the research (the research methodology) this context also emerged as significant in shaping the inquiry process (the research methods) and thus emerged as a significant methodological issue. These research design decisions are discussed further in chapter three.

The context within which the research is located however, also emerges as a significant epistemological issue. In drawing on Popkewitz's (1999) social epistemology, the research context emerges as significant in understanding how systems of knowledge (rules of reason) have come to be structured and how they in turn structure practices for change. In this sense, a consideration of socio-historical context has provided the backdrop to critically analysing change processes in a South African context of transformation more broadly, education and training more specifically and the research participants engagement within these processes of change as a central theme within the research. In particular a social epistemology and its

emphasis on socio – historical context is drawn on in this study to provide a lens to understand and critically analyse the developing narrative of reflexive competence in the changing landscape of education and training in South Africa, to review its implications for curriculum design (see chapter 4) and to critically review data of participants' engagement within reflexive processes (see chapters 5 & 6).

Context, as introduced in this chapter thus provides the backdrop for further discussions around the research methodology and processes of analysis in the rest of the research report.

3.1 INTRODUCTION

Ely *et al* (1991:30), supported by Wolcott (1992:42) notes that any research question emerges from a researcher's professional and social commitments. Working in the changing context of education and training in South Africa (see 2.4) I was, together with other course developers, confronted with the challenge of course design in environmental education processes and professional development programmes for adults, within the NQF competence-based framework. More specifically, working in the field of environmental education, the challenge is to design professional development programmes that counter narrow, technicist approaches to interpreting competence and so confine learning and options for change to, and within existing knowledge and social systems, structures and processes (see chapter 4). From within this context emerged the question of designing open-ended and reflexive course processes and learning opportunities that enable and support participation in reflexive processes of change and the development of reflexive competence. This research question, emerging from within a context of change (see chapter 2) and intended to enable and support participation in processes of change largely influenced and shaped the research design decisions made.

The following chapter discusses and motivates for the various research design decisions made. Rather than using a comparative framework in which I compare different orientations in research and then select one, I draw on the research context and question to motivate for an interpretivist research orientation, as a methodologically appropriate guiding framework for the study (see 3.4.1; see also Cantrell, 1993:85). From the position of participant observer in the research process, I undertook the research through a multiple embedded case study approach (see 3.3.2 & 3.5). This involved the development of multiple layers of case studies, each embedded within, and connected to each other and more importantly embedded within the context of change in South Africa (see 3.5.2). Through focusing on multiple layers of case studies and considering the embedded nature of these cases within socio historical context, I was able '... to probe *deeply* and ... analyse *intensively*' (Cohen & Manion, 1980:16, my emphasis) the professional development experience of course participants, their engagement within reflexive processes in the course and the development of reflexive competence. I collected data through observation of participants' interaction *within course processes*, interviewing and document analysis (see 3.6). I undertook data analysis at various stages in the research process, to inform further data collection strategies (see 3.7.1). Further data

analysis was undertaken through writing the research report to gain a deeper understanding of issues emerging out of the research question (see 3.7.2).

In line with the theme of reflexivity and reflexive competence (see 1.5) as a central focus in the research (see 1.2), I have attempted to describe the research context and clarify understandings through a reflexive review of the research design decisions that I made (see 3.4.2). In acknowledging that social inquiry is not neutral, but value laden (Lather, 1991a:9) and that the research process was shaped (in part) by my personal identity and experiences (Bozalek & Sunde, 1993/1994:73; see also 3.3), I attempt to respond to Lather's (1986b:63) call for an '... openly ideological approach' to the research process and the need for '... self-reflexivity, of a[n] ... awareness of how researcher values permeate inquiry' (Lather, 1991b:2).

In keeping with the idea of fostering a self-reflexive approach throughout the research process, I have chosen to prepare the report by writing in the first person. In reporting of previous research projects (Louw, 1996; Louw, 1998; Raven, 2000), I have often chosen to write from what I perceived as 'the safe position' of the third person (Diamond, 1993:513). Through writing in the first person, I attempt to write myself into the research process and so make explicit my value position and subjective experience within the process.

3.2 DEFINING THE RESEARCH QUESTION AND FOCUS

Chapter 2 provides an overview of some of the shifts and trends shaping environmental education processes and professional development programmes for adult learners in the context of change in South Africa. This context brings with it a particular challenge for developers of environmental education professional development learning programmes. Of particular concern amongst environmental educators is the appropriateness of developing national standards congruent with the aims of environmental education '... to construct, transform, critique and emancipate' (Wals & van der Leij, 1997:13). In the context of the South African NQF, a further concern is the potential problem of linking the notion of reflexivity, as open processes of re-orientation and social change (see 1.5), to a set of pre-defined competences that meets the requirements of the NQF (Personal Communication, O'Donoghue, 2000). This concern is particularly relevant in light of the key focus of 'unawareness' and the uncovering of bounded knowledge as being central in reflexive processes associated with responding to risks (see 1.5.1, 2.6 & 5.2), highlighting the difficulty of predefining reflexive competence.

This research process is not specifically concerned with the development of national standards. The development of national standards does, however, have implications for the development

of learning programmes that enable these. Through this research, I explore the practical implications (the development of course processes and learning programmes) of change in education and training policy, with a particular emphasis on the developing narrative⁷ of reflexive competence in a context of change in South African society.

The question emerging from the context discussed in chapter two is how do course developers design courses, in keeping with the orientation of environmental education as processes of social change, in ways that authentically meet the requirements of the NQF. To explore this particular research question, I identified two focus areas, namely course processes in the RU/GF course and course participants' engagement within reflexive processes and the development of reflexive competence. More importantly, I look at the relationship between these two aspects and how participation in reflexive processes and the development of reflexive competence is enabled through and within course processes.

I have been involved in the RU/GF course for a number of years in different roles (see 3.3.1) and through my involvement developed a particular interest in the course aims and orientation (see 1.3.2). This involvement and interest gave me an exciting, yet challenging opportunity to explore the research question within the context of the course and through interaction with fellow environmental educators. From within the context of the RU/GF course, as research 'site', the following research design decisions were made, guided by the particular research question being explored.

3.3 MY ROLE AND INTEREST IN THE RESEARCH

Ely *et al* (1991:47), together with Wolcott (1988:193) and Lather (1991a:15), amongst others, agree on the importance of clarifying one's role as played out in the research and how this affects the research. Ely *et al* (1991:47) note that:

'... important issues are that we participate as closely in line with the needs of our studies, that we make ourselves as aware as possible of the ripples caused by our participation, that we attempt to counter those ripples that might hinder the participant observer relationship and hence the study, and that we describe in the report both what worked and what didn't work'

⁷ I refer here to reflexive competence as a developing narrative since it appears to still be in an emerging form in the context of standards generation and learning programme design in the NQF. Reflexive competence has been applied in the context of ETDP deliberations (see 2.4.3), it has been used in developing a framework of competence to guide teacher professional development in the Norms and Standards for Educators (Department of Education, 2000; see also 1.5.4) and has been mentioned in the Labour Bill (1997). It has more recently been put back on the national agenda through the work of Vorwerk (2004) and in a paper presentation at the SAQA national conference in September 2004, where he (*ibid*) begins to question the notion of '... knowledge in action' in the context of applied competence.

The following section attempts to clarify my role in the research process, outline some of the circumstances that defined this role and highlight some of the tensions that arose as a consequence of that role.

Since my first engagement with the RU/GF course in April 1997, I have played varied and sometimes multiple roles in the course. These include the role of course participant / student, course developer, course co-ordinator, tutor and researcher. These varied and multiple roles have influenced my understanding of curriculum processes in the course, and have similarly been shaped by the insights gained. I had the opportunity to develop insight into, and deeper understandings of, the course orientation, course processes and professional development processes from different perspectives. At the same time these insights and understandings shaped / influenced the varying levels of participant and observer roles that I ultimately played in the research process (see 3.3.2).

3.3.1 Multiple and varied roles in the RU/GF course

In April 1997, I joined the course together with two colleagues from the Environmental Unit – Peninsula Technikon (EU-PT), where I worked as a co-ordinator for different community-based projects aimed at addressing local environmental issues. At the time the EU-PT had just initiated an extension of an existing project, involving participatory approaches to curriculum-based resource materials development (Louw, 1998). This initiative was to support the implementation of the new school curriculum framework, through which local environmental issues and risks could be addressed. The objectives of the project, amongst others, were to involve all community members in the process of developing curriculum-based resource materials, including a group of fisherman confronted with the challenge of making a living from a declining marine resource.

At the time of joining the course, I had recently completed a Masters Degree in Environmental Education (Louw, 1996). My research during this Masters Degree involved an action research project working together with teachers and learners in the local community of Grassy Park and Lotus River, in Cape Town, where I taught at the time, seeking to address local environmental issues (Louw, 1996:3). I emerged from this Masters Degree frowning on any environmental education processes that did not foster a socially critical and participatory action research approach to education and research (see 2.6). These approaches provided the theoretical framework within which the research for my Masters Degree was undertaken and I was caught up, at the time, in a bind of my 'pet' theories (Lather, 1991b:62). Professional development approaches in the RU/GF course and the realities of the context in which I worked strongly challenged the arrogance of my thinking at the time. The RU/GF course processes, particularly

assignment work (see 5.4.1), challenged me to reflect critically on environmental education processes in the EU-PT project, to rethink our approaches in this project and adapt the objectives to be more congruent with the practical realities of the community context. This was my first engagement with the reflexive opportunities provided for in the course, though at the time I did not understand them as such. Through this experience, I became less arrogant about popular theory and began to open myself up to counter-interpretations of research experiences with which I was involved. In a sense, I began to embrace the complexity of the world that popular theory often shields us from (Lather, 1991b:62).

As I was busy with the assignments and other requirements of the course, at this time I did not focus too much on the course orientation and its implications for course processes and professional development. In 1997 I became involved in adapting the course for the industry, business and local government context (Lotz, 1999c:3). This created the need and opportunity for me to engage more closely with the course orientation and course processes. It was at this point that I was able to see the significance of the course aims and orientation for my own professional development. I was thus able to develop a better understanding of the course aims and orientation, course processes and professional development, through this experience. Of particular significance to me were the ideas of 'critical reflection' and 'praxis' (see 1.3.2 & 5.3.3) and the process of 'assessment as learning' (see section 5.4.5). As a tutor in the industry course, I had further opportunities to work practically with the conceptual framework underlying the course and in this way I continued to develop a better understanding of professional development processes in the context of the course.

In February 1999, I undertook a research project, exploring the development of competence in the context of the course in relation to the emerging NQF (see 1.2, 2.4 & 2.7). Through this research process I engaged more closely with the course orientation that shaped course processes (see 1.2). I had the opportunity to look more closely at course processes and how these enable the professional development of course participants.

In addition to my varied roles in the course from 1997 to 1999, I similarly played various roles in the 1999 / 2000 course. Firstly, I co-ordinated the industry course and was also the tutor for this group of participants (see 1.4). I was also the co-tutor for the WCTG for a period during the course (*ibid*) and played the role of participant observer in my role as researcher in the course.

Given my own experience of professional development in the course and the significance of the course orientation in relation to this, I was interested in sharing this experience with other course participants and encouraging participants to share in the richness of the course and opportunities provided. This had particular implications for the specific role that I assumed in

the course, and ultimately shaped my role as researcher and the data collected during the research (see 3.3.2, 3.3.3 & 3.6).

3.3.2 My role as participant observer

In the context of the 1999 / 2000 course, the research was undertaken with a specific focus on six case study participants with whom I worked in three tutorial groups (see 1.4 & 3.5.2). This was the challenging time that I walked what Wolcott (1988:187) describes as the fine line in participant observation between being ‘... aloof ... with too much distance and perspective ... or too much familiarity’ in the multiple and varied roles that I played in the RU/GF course (see 3.3.1).

Cohen & Manion (1980:122) describe participation observation as a ‘... methodological approach’, a way of being in the research setting (Atkinson & Hammersley, 1994:249). In the context of the RU/GF course, considering the multiple and varied roles that I played (see 3.3.1), the role of participant observer became a naturally assumed one. Being a part of, irrespective of the specific role played out in a social situation, implies participation. I agree with O’Donoghue (1999:17) that the only non-participative social condition is ‘... extreme mental illness or death’. Observation similarly implies being a part of, since we cannot practically study / observe the social world without being a part of it (Atkinson & Hammersley, 1994:249). I further agree with Wolcott (1988:193) that we are participant observers in everything that we do, differing in the extent of the level of participation and observation.

In this research, I have straddled the role of participant observation between the two extremes on a continuum, ranging from full participant on the one hand, to mute observer on the other (Ely *et al*, 1991:45). The extent of participation and observation was influenced by various conditions in the research setting and the consequent roles that I assumed in the course (see 3.3.1). During national workshops (see 5.4.2) for example, I was not involved in presentations for the general course participants and was able to assume a mute observer role. In discussions with industry course participants, during these workshops, and at ITG meetings, I was a full participant, and my observational role became somewhat marginalised. In the ECTG I was able to, primarily assume the role of mute observer since I was not involved in presentations at all and rarely participated in discussions. In the WCTG, I tried to balance between participant and observer in my joint role of co-tutor and researcher. A particular tension for me during the research was trying to ‘... resolve the tension between involvement and detachment’ (Wolcott, 1988:187), at times more successfully than at others.

My roles in the course prior to this research	
Course 1 – The RU/GF 1997 / 1998 Course	Course participant (student)
Course 2 – The 1998 / 1999 Industry Course	Course developer, co-ordinator and tutor
Course 3 – The RU/GF 1998 / 1999 Course	Researcher (initial research)
Course 4 – The RU/GF and Industry Course of 1999 / 2000	Researcher, co-ordinator, tutor, my role varying in relation to the multiple layers of cases



My roles relative to the multi-layered case studies in the 1999 / 2000 course (the focus of this research)		
Case / context	Role in the course / case / context	Position on the participant / observer continuum
National workshops in the course	Researcher	Mute observer
ECTG	Researcher	Primarily mute observer
WCTG	Tutor and researcher	Straddling the role of participant and observer
ITG	Co-ordinator, tutor and researcher	Full participant

Diagram 3.1 Multiple and varied roles in the RU / GF course.

3.3.3 Some of the challenges of my multiple and varied roles in the research process

As tutor working with the industry group participants (see 3.3.1), I assumed the role of 'active participant' (Wolcott, 1988:194) '... having a job to do in the research setting as well as being the researcher' (Ely, *et al*, 1991:45). This largely influenced the course processes as well as the data collected, since in this role of tutor I had the freedom to shape course processes through my own developing understanding of them. For example, at an industry tutorial I decided to discuss the process of assessment as learning (see 5.4.5) with course participants (DF8, obs.notes, ITG-10/03/00). I thought it useful to discuss assessment processes, since I got the sense that these were not clearly understood, particularly the notion of assessment as processes of learning (see 5.4.5). It appeared as if participants simply responded to my comments in their assignments, without further thinking through issues in their context (DF10,

C4). Daniel notes the significance of this discussion in understanding the alternative approach to assessment in the course (see 5.4.5). He notes that ‘...I eventually did become more comfortable with the assessment process in the end ... seeing the comments as ...things that I needed to think about a bit more’ (DF10, C4). Through this incident in the course, I felt that a deeper understanding of the course orientation would allow participants to optimise the opportunities in the course for engaging within reflexive processes and developing reflexive competence (see 5.3.3 & 5.4). Being centrally involved in this discussion, I was not able to record detailed observational notes, and had to rely on memory in subsequent recordings of this discussion. In similar discussions in the ECTG, Lawrence and Jane discussed assessment processes in the context of the course. Jane discussed with participants the process of commenting on assignments as intended ‘... to encourage further thinking about issues raised’ (DF8, obs.notes, ECTG - 22 –23/01/00). As mute observer in this tutorial, I took particular note of participants’ responses to this discussion and recorded these. There appeared to be an unfolding of a deeper understanding of assessment processes in the course, reflected in ‘... [it] opens our minds ... to think of things you might not have thought [about]’ (DF8, obs.notes, ECTG - 22-23/01/00). I tried to initiate a similar discussion in the WCTG as co-tutor in this group. Participants in the group were, however, less responsive to these discussions. Being involved in the discussions and similarly being preoccupied with participants’ reluctance to discuss this issue, the data recorded on this discussion was a lot less detailed.

These examples highlight the different roles that I played in different contexts in the course and the research. From full / active participant in the ITG, to a mute observer in the ECTG, to walking the tight rope between active participant and observer in the WCTG. It similarly highlights the shaping influence of my understanding of the course and research processes in the ITG and WCTG. It further highlights the shaping influence of these understandings and consequent roles on the data that I collected, which varied from one tutorial group to another. All of which, in retrospect, appear to have potentially influenced the ‘natural’ flow of the research process, hence the need for reporting self-reflexively (see 1.5.5 & 3.1).

During the research process I had the opportunity to compare the different contexts of the ITG, the WCTG and the ECTG and my role in these tutorials. I realised that course processes in the three groups were somewhat different (see 3.5.2 & 5.4.3), my role in the groups was different (see above) and the kinds of observation notes recorded in the group meetings were also different. In reflecting on these differences I tried to find explanations for these differences, through discussions with course co-ordinators and tutors. Firstly, I realised that tutorial processes in all regional groups are different and participants have different professional development needs, and no structured guidelines exist for tutorial support (except for a broad set of orienting guidelines) that allows for different responses to these needs (see 5.4.3 &

5.5.2). Secondly, I realised that from my perspective as a researcher, I wanted to observe certain things in these regional tutorials that were in line with the aims of the research project (see 1.2). At times I found myself steering course processes towards what I was seeking insight into in the research study, particularly when I was a 'full participant' in the ITG and WCTG. And thirdly, I realised the difference in quality of data in the three groups, since in the ECTG I was able to see more in the role of mute observer. Whereas in the ITG and the WCTG, some things were lost as a result of my over involvement, which Wolcott (1988:193) describes as one of the problems of being too closely involved. This was a point at which I needed to remind myself to step back and that my role as researcher was to '... describe, not fix, not judge' (Ely *et al*, 1991:52). Thus, through ongoing reflexive review of the data generation process, I was able to address these arising threats to validity in the study by trying to 'self-correct' where necessary.

3.4 RESEARCH METHODOLOGY GUIDING THE STUDY

When I started the research study, I was initially confronted with a dilemma of choosing a specific research orientation to guide the study. Working in the context of environmental education in the changing context of South Africa I felt 'obliged' to draw on the critical social sciences, where knowledge becomes emancipatory and social action follows from research processes (Lather, 1991a:12; Connole, 1998:7; Robottom & Hart, 1993:24). At this time I also viewed the various research paradigms as clearly delineated 'boxes' within which researchers and research are to be classified. In considering my research question and the realities of the research context, I soon realised that 'locking' myself within a particular research orientation would be problematic in terms of the research design decisions made. Through reflecting on the issue of choosing an appropriate framework to guide the research, I have come to understand research paradigms as loose frameworks that guide research (Lather, 1991a:11) and help one to '... reflect on the pinches, binds and gaps' inherent in our thinking and doing in research (Solsken, 1993:316). Schwandt (1994:118) talks of research paradigms as 'sensitizing concepts' and cites Blumer, (1954) in describing these as suggesting directions along which to look in research rather than descriptions of what to see. I concur with Patton (1990, cited in Cantrell, 1993:86) who advocates for a '... paradigm of choices [which] recognises that different methods are appropriate for different situations', rather than positioning one paradigm against the other.

3.4.1 Interpretivism as a guiding framework for the research

The aims of the research (see 1.2) guided me towards an interpretivist orientation as the most appropriate framework within which to conduct this research. I came to see the appropriateness of an interpretivist perspective in its primary emphasis on understanding and interpreting

meaning (Connole, 1998:15), through social interaction (Rhodes University Environmental Education Unit, Orientating Reading Two, 2001:16), within a particular social context (Terre Blanche & Kelly, 1999:125). Within this framework, the notion of reflexivity and reflexive competence could be explored in relation to course processes in the RU/GF course. My role in the course (see 3.3) gave me the opportunity to make meaning of participants' professional development experience, through interaction with fellow course participants (see 3.6 & 3.7.3).

Though I draw primarily on an interpretivist orientation as a guiding framework, certain features of a socially critical orientation are inherent at three levels in the research. Firstly, though the research does not reflect a primary aim of enabling social change and transformation, it does, however, aim to inform and support educational change processes, in the context of political and socio-economic change in South Africa. Secondly, my evolving understanding of the reflexive orientation of the course (see 3.3.1) encouraged me to shape course processes to enhance the professional development experience of participants where I had the opportunity (see 3.3.2). Thirdly, I draw on the socially critical framework in attempting a reflexive approach within this research project (see 3.4.2).

While exploring the various paradigms provided me with the conceptual 'lens' for clarifying the methodology guiding the research (Lather, 1991a:11), they could also be limiting and hamper the potential of the research (Lotz-Sisitka, 2001a:9). At various points in the research I experienced this constraining influence in the role that I played in the research. Section 3.3.3 describes an example in which I attempted to effect change through the research process, which might be likened to a socially critical approach in research (see 3.4). I similarly note here that my role in the research was to describe, not fix or judge. This example highlights the difficulty I had in deciding whether to 'interfere' with course processes which might enhance the professional development experience of participants or to hold back and allow the research process to flow 'naturally'. These are some of the 'untidy' realities of the research context (Lather, 1991a:11) for which the delineating approach to paradigms does not prepare us as researchers. It thus becomes more useful to see these paradigms as guiding frameworks rather than boundaries within which our practice might be constrained.

3.4.2 Interpretivism and reflexivity

Research informed by an interpretivist perspective, is critiqued as 'subjective' by proponents of the positivist paradigm who argue for scientific neutrality and objectivity in research (Lather, 1991a:8). Positivist theorists view reality as a given, existing apart from the researcher and can be discovered through processes of inquiry (Cantrell, 1993:84). In contrast, researchers working in an interpretivist framework view reality as constructed, and processes of inquiry as

offering interpretations that become reality to the extent that they are agreed upon (Smith, 1989, cited in Cantrell, 1993:84). In interpretivist research, the researcher is seen as the primary research instrument in the collecting and analyzing of data (Terre Blanche & Kelly, 1999:126). Inevitably then, the process of inquiry is shaped by the views, values and understandings of the researcher (Lather, 1992:91), who comes to '... confer their own signature on their work' (Eisner, 1991:169).

Within the interpretivist framework of this study I agree with Ely *et al* (1991:122) that we cannot lose our subjectivity or wish it away, '... for human perception [and interpretation] is by nature and definition subjective'. What we can do is, that by recognising and acknowledging our myths and prejudices, '...we can more effectively put them in their place' (*ibid*). In acknowledging the inseparable bond of values and processes of inquiry (Cantrell, 1993:84; Rhodes University Environmental Education Unit, Orientating Reading Three, 2001:9), I draw on Lather's (1991a:15) call for reflexive processes of inquiry which makes '... its biases part of its argument'. Lather (1991b:62) likens the search for ways to build reflexivity into our research designs as '... a journey into uncharted territory' and suggests constructing research designs which pushes us toward a more vigorous self-awareness (Lather, 1986b:66).

In this research process I have attempted to address the issue of subjectivity through adopting a reflexive approach to the research. This I have done by:

- ◆ providing an overview of the methodological ideas and understandings that have shaped the research (see chapter 2 & 3.2). By doing this I attempted to offer, to the reader, grounds for accepting my description and analysis (Lather, 1991b:52) and the issues emerging from it. I have attempted to make explicit the theoretical assumptions (see 1.5, chapter 2, chapter 3 & chapter 4) guiding the research, to assist the reader in interpreting the research findings and minimize the distorting effect of my personal bias on these research findings (Lather, 1991b:64).
- ◆ drawing on Lather's (1991b:55) suggestion for building reflexivity into the research process, I have attempted to strive towards a reciprocal relationship between theory and data, which allows for '... theory building which is open-ended, non-dogmatic, [and] speaking to and grounded in circumstances of everyday life' (see 3.7.2).
- ◆ I further draw on Lather's (1991b:59) idea of 'reciprocity', in designing an interactive and contextualised research process, which invites joint participation in exploring the research issue (see 3.7.3). Through mutually negotiating meaning, I attempted not to impose my own

meanings on situations, but involve the research participants in ‘... the construction and validation of knowledge’ (see 3.7.2).

3.4.3 Reflexivity in research

Through its particular orientation, the RU/GF course is characterised by reflexivity, inviting participants to engage in processes of critical reflection to clarify and reveal the ‘... ordinarily hidden structures, assumptions and conventions situated [in] our action and experience’ (Janse van Rensburg, 1995a:97). These critically reflexive processes are intended to enable a ‘co-construction of new ways of thinking about and acting on environments’ (Janse van Rensburg, 1995b:279).

Through my involvement in the course (see 3.3) and the research process that flowed from this involvement, I started engaging with the notion of reflexivity more deeply. Initially, I engaged with reflexive processes in my work context at a more unconscious level (see 3.3.1). Recently, as I started developing a deeper understanding of the notion of reflexivity and its implications for practice, my own reflexivity as an environmental education practitioner was raised to a more conscious level. Through this research process I explored the professional development of environmental education practitioners, focusing specifically on their development as reflexive practitioners. An important question that plagued me was, what then of my own reflexivity as an environmental educator and how is this reflected in my practice? Through the research design I attempted to address this issue through self-reflexivity in my role as researcher in the process (see 3.4.2). A key principle in the RU/GF course is that ‘... we are all learners and educators’ (Rhodes University Environmental Education Unit, Introductory Texts, 1999:2). Lather (1991b:63) similarly argues that at the core of transformation is a reciprocal relationship between teacher and student, in which one learns and teaches. In the research process, I attempted to confront the traditional power relationship between researcher and research participants, by inviting a joint exploration of the research issue (see 3.4.2). Lather (*ibid*) notes that this challenges ‘... the “naturalness” of social arrangements ... so that the social actors can see both the constraints and the potential for change in their situations’.

Through the research experience I have developed a deeper understanding of myself as a reflexive practitioner in environmental education. In previous work in research in environmental education, I attempted to probe and question what lies beneath my practice and attempted to respond through action to these questions. Critical reflection in action was, however, more focused on what I could clearly see playing out in environmental education and research practices and so lacked a focus on the binds of my own knowledge and action. An important further development for me as a reflexive practitioner is attempting to interrogate what is not so

obvious and what lies deeply covered and bound in educational processes and environmental issues and risks and attempt, more boldly, to challenge these conditions and its influence on social actors and the environment.

3.5 A MULTIPLE EMBEDDED CASE STUDY APPROACH

As noted above, a central focus in the research was to gain insight into a reflexive review in / of practice as participants engage *in* learning processes through the course. In supporting the aims of the research (see 1.2 & 3.2), I was prompted to look for rich, descriptive information of a qualitative nature (Rhodes University Environmental Education Unit, Orientating Reading Two, 2001:16). The collection of this rich, descriptive information would allow an in-depth focus (Cantrell, 1993:90) on participants' engagement in reflexive processes of change and the development of reflexive competence in relation to course processes (see 1.2 & 3.2). Considering this need for in-depth focus and rich, detailed information, I chose a multiple embedded case study approach to explore the research issue. The description of this approach as multiple embedded case studies, I have borrowed from Yin (1994:51) to reflect emphasis and focus on multiple layers of cases *embedded in* context.

3.5.1 Case study methodology

Stake (1994:237) describes case study research as concentrated inquiry into the specifics of one or more cases. The specifics of the case study approach is reflected in the research focus on the reflexive orientation to the RU/GF course, the consequent course processes and the relation of these to participants engagement within reflexive processes and the development of reflexive competence. Yin (1994:1) further argues that case study research becomes a preferred approach when questions of 'how' and 'why' are being explored through the research question. The research attempted to gain insight into 'how' participants have engaged in reflexive processes and the contextual factors shaping this engagement in reflexive processes, bringing into focus the question of 'why'. Drawing on Stake's (1994:237) description of, and Yin's (1994:1) motivation for case study research, I argue for a case study approach as appropriate within the context of this research and in supporting the aims of the research. Further, the need for depth, detail and intense analysis further supported the choice of a case study approach as appropriate in the context of the research.

Drawing on Stake's (1999:237) categories of types of case studies, I have identified two types of cases in the multiple levels of case studies in this research, namely intrinsic and instrumental case studies. Intrinsic cases are those that can be identified as apart from any other case with specific intrinsic features of interest in a research process. In the context of this research, the

RU/GF course with its particular reflexive orientation, aims and processes, I have identified as an intrinsic case study. Instrumental case studies are described as examining a particular case to provide insight into an issue, the case then in itself becomes of secondary interest, but plays a supportive role in facilitating an understanding of something else (Stake, 1999:237). The tutorial group case studies and individual participant case studies, I have identified as instrumental case studies, since my interest in them was more instrumental to understanding participants engagement within reflexive course process and no intrinsic feature of these, apart from other tutorial groups or participants within these different professional contexts (see 1.4.), guided my choice. The choice of the tutorial case studies and the participant case studies could have been either of the nine regional tutorial groups or any of the approximate sixty-five course participants / students. The motivation guiding the choice of these particular case studies relate more to the management of the research process and reflecting the diversity amongst participants in the course (see 1.4 & 3.5.2).

Various concerns are raised with respect to case study research, for example, the lack of precision in definition (Merriam, 1998:xii), its lack of rigour (Yin, 1994:9) and its failure to produce useful and transferable knowledge (Stevenson, 2004:40), amongst others. The idea of generalizability, or the lack thereof in the context of case study research similarly dominates much of the literature on case studies and Yin (1994:10) for example notes one of the 'traditional prejudices' to case study research is that it offers little in terms of generalisation. Bassey (1999:53) argues that it is impossible to draw generalisations from case studies, since generalisation generally tend to overlook details of context and circumstances which gives meaning to the case study. In this case study research I have not become preoccupied with the issue of generalizability and the intention herewith is not to arrive at generalisations that can simply be transferred from one situation to another. Rather, in adopting a descriptive and explanatory approach to sharing the research findings and making explicit the context within which the cases are embedded (see chapter 2 & 3.5.3) it intends to provide the reader with additional 'lenses' through which to reflect on and analyse their own practice (Stevenson, 2004:46). To this end the research report is concluded with 'possible implications' rather than recommendations for course design (see chapter 8). These 'possible implications' reflect what Bassey (1999:53) refers to as 'fuzzy generalisations', or 'general statements' that are imbued with uncertainty.

3.5.2 The social epistemology embedded within case study research

Yin (1994:13) describes case study research as enquiry in real life contexts and argues that case study research becomes appropriate when contextual conditions are significant to the phenomenon under study and the boundaries between context and phenomenon are not clearly

evident. A key principle underpinning the reflexive orientation, aims and course processes of the RU/GF course is responsiveness to a diverse group of learners who interact with / within a diverse scope of environmental issues and risks (see 1.3 & 2.6). Giving effect to this key principle of responsiveness requires a careful consideration of context – the context shaping the course and the context within participants are learning and working. The case study methodology guiding this research provided the space for an in-depth exploration of the context within which the course plays out and the relationship between context, course, course processes and course participants, and so foregrounds the social epistemology embedded within case study research.

Participants' engagement within reflexive processes and the development of reflexive competence, as the main theme in this research is reviewed *within the* learning context offered through the course and the professional context within which participants attempt a reflexive review in / of practice. To make meaning of participants' engagement in reflexive processes, it became necessary to review the social actions and interactions of participants embedded within multiple social contexts. The multiple layers of cases developed in the research provide insight into the multiple social contexts that have shaped action, interaction and participation in reflexive processes (see 3.5.3).

Stake (1994:239) notes that cases have their own unique history and should be viewed as complex entities operating in a number of contexts. In the same sense, Popkewitz (2001:4) calls for a historicizing of the present to avoid the approach of '... an empty history'. He argues that a historical approach allows for a critical engagement with the present, '... by making the production of collective memories available for scrutiny and revision' (*ibid*). Methodologically, the social epistemology embedded within this case study research has had significant implications for the research design decisions made. In considering the socio-historical context within which the course plays out and within which participants engaged allowed for a consideration of '... how systems of knowledge organise our *being* in the world through the construction of rules of reason, the ordering of the objects of reflection' and consequently the principles that shape participation, action and interaction within reflexive processes (Popkewitz, 2001:5, original emphasis).

Flyvberg (2001:4) argues that social science should be seen as a form of social praxis, involving a reflexive analysis of values and interests (and power relationships) in social contexts. This reflexive analysis of values and interests he argues is a prerequisite for social transformation, and for socially just and enlightened political, economic and cultural development in any society. He (*ibid*) further argues that social science should be aimed at '... clarifying the problems, risks and possibilities that we face as humans and societies, and at contributing to social and political

praxis'. This intensive approach to research, Sayer (2000:20) describes as focusing primarily on '... what makes things happen in specific cases'. Through this multiple embedded case study approach I have attempted to reflect some of the complexities and tensions emerging out of real life relations and patterns of practice in context. Rather than attempting the impossible task of generating context-independent theory (Flyvberg, 2001:4) and general propositions, through a focus on case studies embedded in context, I have attempted to uncover some of the rich problematics experienced in the multiple and interrelated contexts of learning and practice to learn more about how to support the reflexive review in / of practice in environmental education.

3.5.3 Multiple layers of case studies

As noted before, the research attempts to capture 'instances' of a reflexive review in of / practice, supported by interactions *within* the RU / GF course. To this end, case studies have been developed at multiple levels to capture the range of contexts that have come to shape participants actions and interactions within reflexive processes. Drawing on Giddens' (1984) structuration theory and the duality of structure, the multiple layers of cases attempts to provide insight into social structures and substructures that shape and are at the same time the result of social action and interaction.

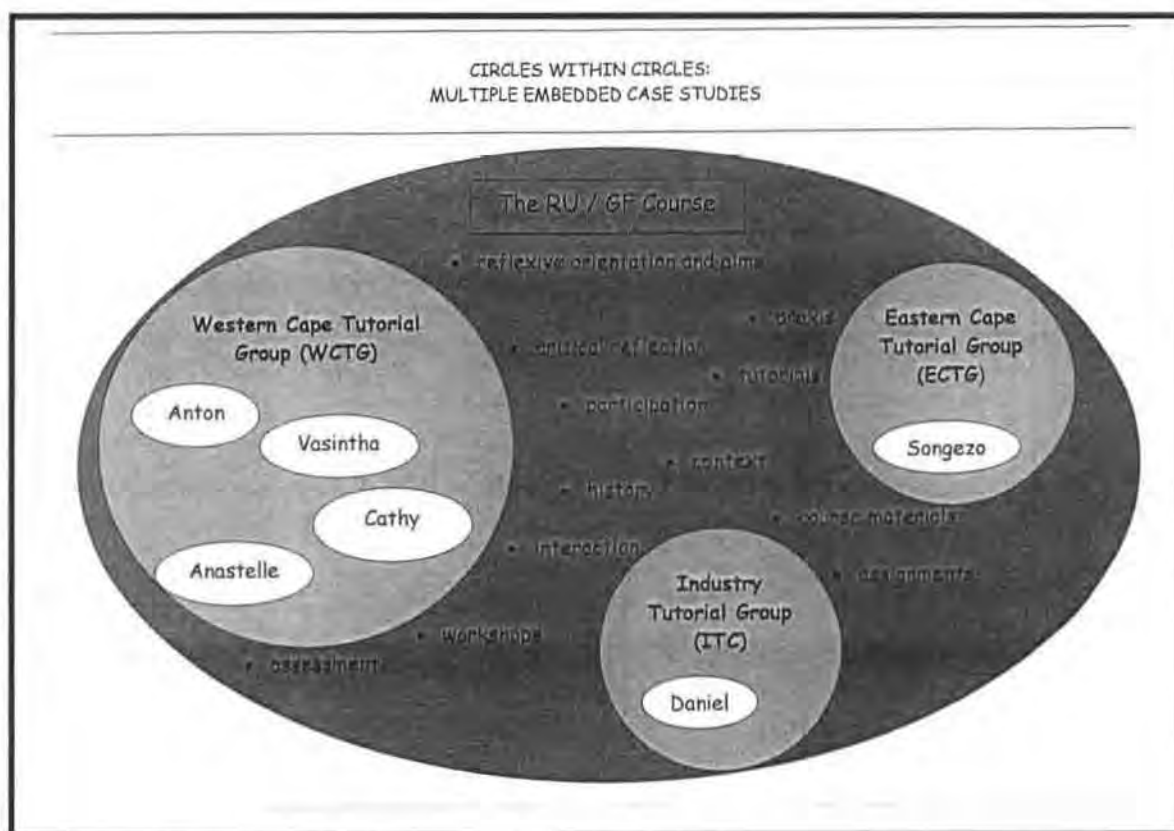


Diagram 3.2 Multiple embedded case studies.

Cases have been developed around six case study participants to review these 'instances' of reflexive review in / of practice and interactions *within* course processes. Similarly, these cases provide insight into the professional context of participants and aspects of their engagement within the learning context of the course. Cases were also developed around three tutorial group case studies. Tutorial groups in the course, though shaped by the common course orientation, aims and structure, play out differently in the regional or sector specific context depending on the tutor / s orientation to the course and the professional development needs of participants who make up this tutorial group, as described in section 1.4. To capture this variance in learning contexts I have chosen three tutorial groups, two of these in the general course context and one in the industry course context. Each of the six case study participants are linked within one of the tutorial groups chosen. The tutorial group case studies, with its variance as discussed in 1.4 & 3.5.3.2, provided insight into the different learning contexts that have shaped participants' engagement within reflexive processes and which have similarly been shaped by participants' interaction within these groups. The course itself is then reviewed as a case at another level, focusing on the orientation, aims and structure and how these shape the learning experience of participants. The course is however also reviewed in the broader context of changing trends and patterns in adult learning processes, in the context of environmental education and in the context of change in South Africa.

3.5.3.1 The Rhodes University / Gold Fields course as a case study

Rather than being chosen as a particular case study, my involvement and interest in the RU/GF course presented an opportunity to focus on the course as a case study (see 3.3). Stake (1994:237) describes the 'case' in case study as a 'functioning specific'. The 'functioning specific' of the course orientation, aims, nature and structure (see 1.3.2), and its intention to enable an engagement in reflexive processes and the development of reflexive competence, is the specific focus of the course as a case study.

Through the initial research (see 1.2), specific course processes and features were identified which support an engagement within reflexive processes and the development of reflexive competence (Raven, 2000:61). These course processes and features, shaped by the reflexive course orientation and aims and which formed the focus of this level of the multiple layers of cases are:

➤ Work-based assignments

Participants in the course complete a series of work-based assignments that are spaced over the duration of the course (5.4.1). This spacing of the completion of assignments is a significant

feature of the course since it allows participants the time and space for ongoing interactions within deliberative processes or exploring options for responding to environmental issues and risks in context (see 5.3.3 & 5.4.1). Over time participants are able to engage within the theoretical perspectives introduced through the course, discuss these with fellow course participants at regional tutorials and colleagues in the workplace, and draw on these theoretical ideas in exploring new and different educational responses to environmental issues and risks (see 5.4).

➤ **Workshops**

Three national workshops are held over the duration of the course (see 5.4.2). All course participants attend these workshops and these workshops provide participants with an opportunity to 'tap' into the broader learning network provided for in the course (see 4.5.5 & 5.4.2).

➤ **Tutorials**

Work-based assignments are supported by ten regional tutorials held over the duration of the course (see 5.4.3). These tutorials provide participants with the opportunity to reflect more closely on practice in relation to the theoretical perspectives with which they engage through the course, and through interaction with a smaller group of fellow course participants. Vasintha distinguishes national workshops as '... giv[ing] a broader view of theories and concepts' from tutorials that provides more specific focus on the individuals' work context (DF10, C2).

➤ **Course materials**

Course materials, consisting of core texts and readings provide participants with the theoretical 'lenses' through which they are encouraged to critically review their practice (see 5.3.3 & 5.4.4).

➤ **Assessment as learning**

Assessment in the course is a significant process of learning. Rather than being undertaken as a judgemental process, it serves to encourage participants to continuously reflect on and review their practice, through deliberations with tutors and fellow course participants (see 5.4.5).

I use the term 'course features' in addition to 'course processes' to encompass the various aspects of the course with which participants engage, some of which are not appropriate being 'labelled' a process. For example, course materials cannot practically be considered a course

process, though it is a significant feature of the course supporting other important processes, such as assignment work, tutorial discussions and assessment. I was similarly reluctant to use only the term 'course features' since I felt that it takes away from the important process orientation to the course (see 4.7).

The initial research highlights the significance of these course processes and features for the research question (Raven, 2000:61). These course processes and features therefore became one of the central foci of data collection (see 3.6) and data analysis (see 3.7) in the research process and are further discussed in section 5.4 and 6.2.3.

3.5.3.2 Tutorial group case studies

During workshops in the course (see 3.5.2.1) all participants meet as a group. This group consists of approximately seventy-five participants, including course participants / students, tutors, course co-ordinators and very often other participants interested in the course, such as researchers. Many participants in the course often 'fade' into the bigger group and their voices are often not heard.

Tutorials are usually comprised of regional groups and in the case of the industry tutorial group, participants from a specific professional context (see 5.4.3). Tutorial meetings are usually smaller and participation and interaction with / within course processes and features often becomes easier for participants. In addition, the workshops focus primarily on introducing theoretical perspectives and sharing amongst the bigger group (see 5.4.2). The tutorials are the space where the course processes are given effect. I chose to develop case studies around three tutorial groups to gain deeper insight into how the reflexive orientation and aims of the course play out in course processes and features at tutorial level and to observe closely participants' interaction with / within these.

The initial research shows that course processes in different tutorial groups differ relative to participants professional development needs, the tutor's orientation to the teaching and learning in the course and participants interaction with / within course processes, amongst other factors (see 1.4). This variance was similarly confirmed through the current research. To capture the variance in the way in which course processes play out in different tutorial groups, I chose to focus the research on three tutorial group case studies. These tutorial groups provided insight into the learning context within which participants engaged and that supported their engagement within reflexive processes and the development of reflexive competence.

The course is national and involves travelling to different centres in South Africa. For example, in the 1999/2000 course the first, second and third workshops were held in Grahamstown (Eastern Cape), Howick (Kwazulu Natal) and Delmas (Mpumalanga), respectively (see 5.4.2). Ten tutorials are held regionally between these workshops for the general course (see 5.4.3). In the 1999/2000 course, two tutorials were held specifically for industry course participants. Because the industry course group consisted of only four participants, I arranged individual meetings with participants when travelling to venues in close proximity to where they work and live. For further support, the industry course participants joined the regional tutorial groups of the general course, closest to them. The two industry group tutorials were held in Port Elizabeth (Eastern Cape) and Cape Town (Western Cape) as negotiated amongst course participants. Given the frequency of travelling involved in participating in the course, the deciding factor in the choice of the tutorial groups was geographic proximity. At the time of undertaking the research I lived in Cape Town that led to my choice of the Western Cape Tutorial Group (WCTG) and the Eastern Cape Tutorial Group (ECTG). The aim to capture diversity prompted the choice of the Industry Tutorial Group (ITG), which involves participants from a different professional context than that found in the other two groups. Geographic proximity was not considered in the choice of this case study, since as tutor of this group I would be travelling to meet with participants anyway.

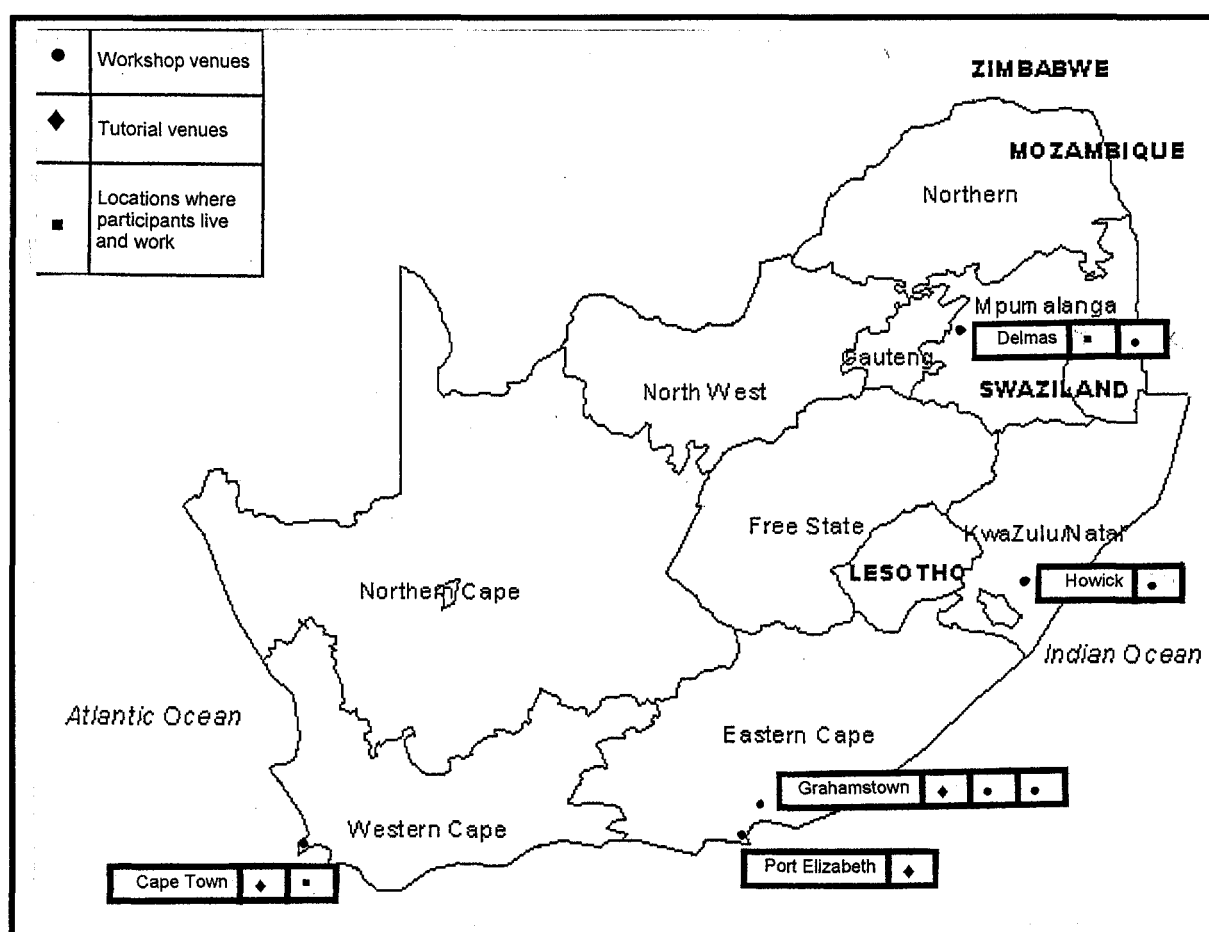


Diagram 3.3 Map of South Africa showing the location of workshops, tutorials, and participants' work contexts.

As in the initial research, that highlights difference in course process in various tutorial groups (Raven, 2000:79), the current research similarly highlights certain differences. Difference could imply a comparative approach to reviewing observational data. This is, however, not the intention. Difference as used in this context is intended to reflect diversity and variety characteristic within the RU/GF course, rather than comparison. In reviewing course processes in tutorials some similarities are found as well. In the following section I introduce some of the differences, as well as similarities, in tutorial groups to motivate for my choice of three different tutorial groups. The issues raised here are intended to reflect the nature of the three tutorial groups and how course processes played out differently in the three groups. These further provide insight into some of the factors shaping the professional development experience of participants in the course and their interaction within course processes.

➤ **Social cohesion**

In reviewing participants' engagement *within* course processes in the various regional groups social cohesion emerged as a particular issue, reflected strongly in some groups and to a less extent others. I raise this issue of social cohesion as I have come to see it as a significant factor shaping participation in ongoing deliberations to explore educational responses to environmental issues and risks in context (see 5.3.3 & 6.2.3). Social cohesion amongst course participants was more obvious in the ECTG and the ITG than in the WCTG.

At the time of the course, participants in the ECTG lived and worked in different regions in the province. Three participants lived and worked in Grahamstown, two in Port Elizabeth, one in East London and another in Kenton-on-Sea. Jane and Lawrence, the tutors, both lived in and worked from Grahamstown. Participants often had to travel substantial distances to meet at tutorials. To facilitate this distance and travelling, tutorials were often arranged over weekends. This allowed participants time together, over an extended period, to interact with each other. Since some participants were from 'out of town' it often meant sleeping over at a colleague's house. This might have supported the social cohesion in this group and at the end of the course, participants travelled to the final workshop together and stayed together at overnight venues.

In the ITG participants shared the same professional context and were all faced with similar challenges of implementing processes to support environmental management systems in their organisations. Participants often talked about the practical issues they were confronted with in their respective organisations and shared different approaches to dealing with these issues (DF10, C4; DF8, obs.notes, ITG - 10/03/00).

In the WCTG there appeared to be less cohesion, socially, amongst course participants. Participants in this group all lived and worked in the vicinity of Cape Town. Tutorials would often be arranged for single days, on a weekend or in the evenings. The single day tutorials as opposed to weekend tutorials was a possible reason, cited by Wendy (one of the tutors) for less opportunities for social interaction amongst course participants (DF8, obs.notes, TM - 05/02/00). Attempts were made in the latter half of the course year to provide opportunities for addressing this issue of social interaction, through arranging a field trip (DF8, obs.notes, WCTG - 17/02/00), and arranging the final tutorial over a weekend (DF8, obs.notes, WCTG - 06/05/00). Despite these attempts social cohesion appeared to remain an issue in the context of the broader group, highlighted through the observation of strong individualistic tendencies in this group (DF8, obs.notes, WCTG - 06/05/00).

➤ **Accommodating for diversity and difference amongst participants**

As reflected amongst course participants in the course in general (see 4.5), difference and diversity in professional context is similarly evident amongst participants in the regional groups (see 3.5.2.3). Because of the difference and diverse professional contexts within which participants' work, their professional development needs are often different. For example, Vasintha had the need to explore environmental education processes in the context of the school curriculum framework as a result of her teaching (DF10, C2). Daniel on the other hand was exploring environmental education and training processes in the context of environmental management processes, given his industry context (DF10, C4). Tutorial groups, given the smaller number of participants working together (see 5.4.3), serve to support the specific professional development needs of participants and as such become important spaces for accommodating diversity and difference in professional context.

Accommodating for diversity appears to have been an issue in the WCTG, which did not appear to be the case in the ECTG and the ITG. Accommodating for diversity in the ITG was not necessary since all participants shared a common professional context. In the WCTG there was a predominance of teachers and participants working in organisations that support environmental education processes at schools. Of the seven participants in this group, three are teachers, two, including Wendy as tutor, work in organisations supporting environmental education in schools. This predominance of teachers and support for teachers led to a focus on school-based environmental education processes (DF8, obs.notes, WCTG - 06/05/00). In the ECTG all participants work in diverse professional contexts, so that no specific professional context dominated this group. In addition to the focus on school-based environmental education processes, there appears to have been a formation of 'cliques' in the WCTG. These

two issues appear to have contributed to the issue of less social cohesion and influenced social interaction amongst participants (see above).

➤ Differences in tutorial activities

In addition to difference in professional context, difference amongst course participants is also found with respect to their academic backgrounds, their levels of experience in environmental education, proficiency with different languages, amongst other differences. In addition to different professional development needs, participants also engage with course processes differently. For example, Cathy with English as her mother tongue is likely to engage with readings easier than Songezo who speaks isiXhosa as a first language (see 6.2.3). Daniel, with English as a first language, might be in a position to articulate his ideas easier than Anton, who at first struggled with articulating his ideas in English, since he speaks Afrikaans as a first language (DF10, C1; see also 6.2.3). Tutorial groups, through various activities, are usually aimed at supporting some of these difficulties which participants experience in engaging with course processes, for example, supporting participants to access academic literature within which to engage with theoretical perspectives (see 6.2.3).

In the ECTG, as a result of the majority of participants being first language isiXhosa speaking, with English as a second language, much emphasis was placed on supporting reading through tutorial activities (see 6.2.3). In the ITG and the WCTG readings were supported to a less extent during tutorial meetings (*ibid*). Jane similarly cites the issue of language as the reason for working more closely with the assignment instruction in relation to core texts in tutorial sessions (*ibid*). Here Jane notes that ‘... because people are mostly second language speakers we work a lot slower or rather with more detail and we don’t assume that people understand’ (DF7, e-mail, J-22/02/00).

Other differences in tutorial activities amongst the three groups were seen with respect to explicitly working with the course orientation and aims of the course and in assessment processes (6.2.3). For example, in the ITG and ECTG, tutors worked more explicitly with the course orientation and aims throughout the course (see 6.2.3). In the WCTG this happened to a lesser extent (*ibid*). The course orientation and aims provide participants with a framework within which to frame learning in the course. Discussions of the key features that support the orientation and aims of the course appear to provide participant with greater clarity on the opportunities inherent in course processes and features, derived from the orientation and aims of the course and so appears to encourage deeper engagement within these processes. For example, many participants struggle with the idea of praxis in the course (see 5.3.3). In discussing this aspect of the course, and particularly the role of theory, might encourage

participants to critically review practice in light of an engagement within theoretical perspectives introduced through the course and support the exploration of new and different options for thinking about and acting within environmental issues and risks (*ibid*). For example, Songezo's assignment work reflects more of a praxiological approach to practice as he progressed through the course, supported through assessment processes and ongoing discussions of the role of theory in exploring options for change in practice (see 6.2.3). Many participants in the WCTG continued to struggle with the notion of praxis throughout the course (see 6.3.4). Daniel began to interact differently within assessment processes as a result of developing more clarity on assessment comments through tutorial discussions (see 3.3). Participants in the WCTG appear to have had a different understanding of various aspects related to assessment in the course and this might have led to less engagement within assessment processes in the course (see 6.2.3). A deeper engagement within course processes, as for example, in the case of Daniel and Songezo could possibly be ascribed to the development of clearer understandings of these course processes and the role of these processes in supporting a reflexive exploration of educational response to contextual environmental issues and risks (see 6.2.3).

With respect to assessment processes, similarities as well as difference were observed in the tutorial groups. Some similarities relate to the development of assignments in draft form (the number of drafts however differing from one group to another), the questioning orientation to providing assessment comments and processes of providing feedback on assignments (see 5.4.5 & 6.2.3). Differences observed relate to the number of assignment drafts which participants were encouraged to complete, the way in which feedback was provided and the process of negotiating assessment criteria. A different number of drafts of assignments were prepared by participants in the different groups, for different reasons, which had implications for participants' engagement within the deliberative processes provided for in the process of writing and assessing assignments (see 6.2.3). With respect to feedback on assignments, in addition to providing written feedback, as similarly evident in other groups, Jane and Lawrence set time aside to discuss with participants the written feedback that appear to have provided participants with more clarity on the feedback comments and how they could use these further reflexive explorations (see 6.2.3). Assessment criteria was negotiated and used differently in the three tutorial groups (*ibid*).

Differences in tutorial activities, as discussed above might relate to tutors background and experience (see below), in addition to accommodating for participants different professional development needs. For example, as tutor for the ITG, I had worked fairly extensively with the course orientation and felt strongly that a clear understanding of this helped participants to frame learning in the course. As a result of my experience with the course, I chose to discuss the course orientation and aims regularly with participants (see 6.2.3). Jane and Lawrence

similarly worked explicitly with the course orientation in framing the tutorial activities of the ECTG (*ibid*).

➤ **Tutor orientation to teaching and learning in the course**

Through my observation of course processes in the three tutorial groups I came to see the experience and background of the tutor/s play a significant role in shaping their orientation to teaching and learning in the course and consequently tutorial activities (see above). In the ECTG, Jane has extensive experience in processes of environmental education and Lawrence was involved in the development of two courses related to the RU/GF course (see 1.4). I have been involved in the course at various levels, which has shaped my understanding of the course orientation, aims and consequent course processes (see 3.3.1). As tutor in the ITG, I drew on this experience in developing and running tutorial programmes. Wendy, the tutor for the WCTG, completed the course the year before the 1999/2000 course. Course processes in the ECTG reflect significant clarity in terms of the course orientation, aims and processes that engage participants in reflexive processes and support the development of reflexive competence (see 6.2.3). Course processes in the ITG were largely shaped by my role in this group and my evolving understanding of the course orientation, aims and course and processes (see above). My role in the WCTG as support tutor was meant to involve assisting in the development of tutorial programmes, providing input at tutorials where necessary and assessing assignments together with Wendy. Wendy's experience in the course appears to have been primarily at an individualistic level of focusing on a critical review of her own individual work and self-evaluation in the course. These appear to be aspects that dominated the WCTG activities (see 6.2.3, 6.3.5 & 6.4.7). Wendy appears to have internalised the ideas of praxis, reflexivity and assessment as learning to a lesser extent that might account for the resistance to these ideas being integrated into course processes (DF7, e-mail, W-05/03/01). Wendy also found it difficult to work with the idea of '... co-learning / co-teaching' and reflected a lack of confidence in '... I don't understand the theory and do not feel confident to lead a discussion in that field' (DF7, e-mail, W-06/03/00). These aspects of difference in tutor background, experience and orientation to teaching and learning appear to have played a significant role in shaping course processes in tutorial meetings (see 6.2.3).

➤ **Processes of co-tutoring**

The number of tutors per tutorial group differs depending on the availability of tutors in a particular region and the number of participants in the group (see 5.4.3). In most cases, having more than one tutor enhances the process of engaging participants in ongoing and reflexive deliberations around responses to environmental issues and risks, in that tutors possibly

complement each other's strengths and weaknesses. Having more than one tutor per group could however also lead to tensions amongst tutors, creating a negative experience in the course for participants.

Tensions amongst co-tutors in the WCTG were evident from the start of the course and might have had implications for participants' experience of / in the course. Co-tutoring in the ECTG seems to have provided a more positive experience for participants and in the ITG, I was the only tutor. Two tutors were initially appointed in the WCTG, with Wendy as the primary tutor, supported initially by Razeena. Early in the course and due to increased work commitments Razeena was no longer able to fully participate in the course. On request, I agreed to take over the task of support tutor for this group. The initial understanding was that Wendy would continue to act as the primary tutor and I would support her through the course. However '... insecurities about 'academic' environmental education, a narrowing focus on assessment and accreditation, the struggle between structure and open process ... and the increasing 'professionalization' of the course' (DF8, obs.notes, WCTG - 06/05/00) gave rise to tensions between Wendy and myself. This tension was not resolved through the course and unfortunately '... formed a considerable proportion of this group's experience of the course' (*ibid*).

In addition to motivating for my choice to work with more than one tutorial group, the above discussion highlights the factors that have come to shape participants' engagement within reflexive learning processes in the course. It similarly highlights some of the challenges encountered in attempting to balance a course with a structured framework on the one hand and a more open-ended framework on the other (see 2.8 & 4.7). The above factors thus formed the focus of data collection in the context of tutorial group case studies and the implications of these for participants' engagement within reflexive processes are further discussed in section 6.3 and 6.4.

3.5.3.3 Case studies of individual course participants (DF10, C1 – C6)

To gain deeper insight into participants' engagement within reflexive processes and the development of reflexive competence, in relation to interactions with / within course processes, I developed case studies around six individuals in the course. Resulting from the open entry, open exit nature of the course and its history as a participatory professional development course, participants in the course usually reflect diversity and difference in their academic and professional contexts (Janse van Rensburg & Le Roux, 1998:36). Initially, eight participants were identified through which I had hoped to reflect the diversity and difference amongst participants who join the course. During the research I experienced difficulty in retaining contact

with two of the eight participants. Case studies were thus developed around six participants. Two specific aspects guided my selection of the case study participants. Most importantly, I used professional context (see 1.4) as a guide to choosing these case study participants. The second aspect guiding my choice was participation in one of the three tutorial group case studies, since interaction within tutorial-based course processes was a key focus in the research (see 1.2). Section 1.4 briefly introduces the individual case study participants and their interest in environmental education. This section highlights certain aspects of the individuals that guided data collection and analysis processes and provides further details on these participants.



Diagram 3.4 *The original eight case study participants in the research.*

➤ Participant's links to tutorial groups

The professional development of course participants is being explored in this research in relation to an engagement within reflexive process and the development of reflexive competence relative to course processes with which they engage. It is therefore important to see participants' engagement within reflexive processes and the development of reflexive competence in light of their participation in tutorial groups, with the differences and similarities as discussed above. Four case study participants were linked to the WCTG, one to the ECTG and the other to the ITG. Anton, Anastelle, Cathy and Vasintha were all part of the WCTG. Songezo was part of the ECTG and Daniel was a participant in the ITG.

➤ Professional contexts

Section 1.4 describes the different professional contexts that guided my choice of the six case study participants. I chose two participants from each professional context, to minimize the effects of possible practical problems that might be experienced during the research process over the duration of more than one year (see above). The choice of participants, based on their professional context however proved to reflect more diversity and difference than I had initially intended. Cathy and Vasintha are both teachers in the formal school context, the one at a high school and the other at a primary school (DF10, C2 & DF10, C3). The choice of one high school teacher and one primary school teacher was deliberate, since in my experience as a teacher at a high school and in working with teachers, I get the sense that teachers at the different levels have different teaching experiences. What was co-incidental in my choice was that Cathy and Vasintha teach at schools that represent difference in terms of the socio-economic background of the learners. In addition, Cathy was a subject Head of Department at her school, whereas Vasintha, at the time of the research occupied a post-level one position at her school (*ibid*). In the grouping of organisations supporting schools, I worked with Anton and Nohle. Anton worked for an organisation, managed by the Western Cape Education Department (DF10, C1). Nohle on the other hand worked for a Non-Governmental Organisation. Unfortunately as the research progressed, communication with Nohle became increasingly difficult and I did not develop a full case study with her. Anastelle and Songezo both worked in the context of supporting / intending to support community-based environmental education programmes (DF10, C5 & DF10, C6). At the start of the course and research, Anastelle worked for a para-statal organisation, where scientific research is dominant (DF10, C6). Songezo, unemployed at the time of the research, was working with an organisation for unemployed community members trying to address the issues of unemployment as a primary focus (DF10, C5). He attempted to work collaboratively with local government officials, looking at integrated waste management strategies as a means to generating employment (*ibid*). Whereas Anastelle worked from within an established organization supporting her work, Songezo was confronted with the difficulties of lacking a specific institutional context to support his proposals for environmental education programmes (DF10, C5 & DF10, C6; see also 6.2.2). In the industry group of participants I worked with Daniel and Beverley. No deliberate choice was made here since the industry group of participants consisted of only four participants, the other two being based in Kwazulu Natal. Co-incidental difference in this particular professional context was that Daniel worked at a senior management level in his organisation and Beverley was an environmental officer in her organisation (DF10, C4). During the research Beverley's company underwent severe restructuring, due to a takeover, and her interest in the course waned since she was no longer sure of her future position in the company. Communication with Beverley in the latter stages of the research was completely severed and I did not develop a full

case study record with her. I did not use the category of resource materials development (see 1.4) in my choice of case study participants since all participants are involved in one way or the other in resource materials development to support their environmental education programmes.

➤ **Academic background**

Diversity and difference in the group is, similarly shown in the academic background of participants. Daniel initially completed a Higher National Diploma at Witwatersrand University, followed by a Diploma in Datametrics at the University of South Africa and a Mine Manager's Certificate (DF10, C4). Anton, Cathy and Vasintha completed Bachelor of Arts (BA) Degrees followed by a Higher Diploma in Education (HDE), qualifying as teachers (DF10, C1; DF10, C2 & DF10, C3). Anton's major subjects were History and Afrikaans, and while teaching at a high school he completed a Bachelor of Education (Honours) (B.Ed. Hons) Degree (DF10, C1). Both these qualifications were completed at the University of the Western Cape (*ibid*). Vasintha had History and Psychology as her major subjects in her degree and noted that her initial interest was in speech therapy (DF10, C2). She initially saw teaching as a way of getting into speech therapy, but in the end settled on doing a HDE and teaching (*ibid*). Cathy's major subjects in her degree were English and Geography and she always wanted to go into teaching (DF10, C3). Vasintha and Cathy both completed their studies at the University of Cape Town (DF10, C2 & DF10, C3). Anastelle completed a Bachelor of Science (B.Sc) Degree at the University of the Western Cape followed by a HDE (DF10, C6). While doing some relief teaching she completed a B.Ed (Hons.) Degree (*ibid*). This was followed by a Masters in Science (M.Sc) Degree, which she completed at the University of Cape Town, while working simultaneously as a researcher at the NBI (*ibid*). Songezo undertook preparation for the examination of a matriculation certificate while in prison during the years of political struggle in South Africa (DF10, C5). He still requires two subjects to complete this matriculation certificate and has no post matriculation qualifications (Personal Communication, Lotz-Sisitka, 2002).

This section provides insight into the academic and professional background of participants around whom case studies were developed. More importantly it highlights diversity and difference, which is a key feature of participants in the course, and attempts to show representation of this diversity in the choice of case study participants.

3.5.4 Ethical issues in the case study research

Issues of ethics are inevitable in any research project (Blaxter *et al*, 1996:146) and become a particular concern in case study research where the interest is in personal views and circumstances (Stake, 1994:244). In the following section I discuss four ethical issues in this

research, which emerged as a matter of procedure rather than as dilemmas in the research process.

➤ **Access**

Access to the research setting did not pose a problem in this research, given my prior and current involvement in the course (see 3.3.1). My participation as a researcher in the 1999/2000 course was an outflow of prior research in the context of the course (Raven, 2000) and participants appear to have accepted the research process, and myself as researcher, as a 'natural' part of the course.

➤ **Informed consent**

Informed consent is highlighted as an important issue in research in most literature around issues of ethics (Burgess, 1989:6; Cohen & Manion, 1980:349; Blaxter *et al*, 1996:146, amongst others). In this research, as in most, informed consent was necessary to obtain the consent and co-operation of research participants (Cohen & Manion, 1980:349). At the first workshop of the course, in a session set aside to discuss the research process, I was able to address all participants in the course on the continuation of the research process, flowing out of prior research (see 1.2). In this session I briefly summarised the research findings emerging from the initial research project, highlighted some of the recommendations made (Raven, 2000) and motivated for further exploring the issue of professional development relative to reflexive competence in the NQF (DF8, obs.notes, NW - 10-12/09/99). I further provided participants with an overview of the research procedures to be undertaken for the duration of the course and informed them of my decision to work with specific tutorial groups and individual participants in the course. I shared with them the guidelines that would guide my choice of the tutorial groups and individual research participants.

After this workshop I decided on the three tutorial groups and the six course participants as specific case studies. I followed up with tutors of the tutorial groups chosen and the six individual participants, telephonically after this workshop. In these discussions I highlighted the process of data collection and attempted to provide the individual participants with a time frame for conducting interviews, undertaking observations and collecting various documents for analysis (see 3.6.1 & 3.6.2). Since all participants in the tutorial groups would be confronted with my presence and note taking (see 3.6.1), I discussed the details of the research process at the first tutorial meeting that I attended, following the first workshop (DF8, obs.notes, WCTG - 06/11/99 & DF8, obs.notes, ECTG - 22-23/01/00). At these initial tutorial meetings, all participants involved gave their commitment to supporting the research. All participants co-

operated optimally in the research process, evidence of which can be seen in individual participants taking it upon themselves to provide me with the documentation that I needed (see 3.6.3).

➤ **Confidentiality**

The issue of confidentiality was raised only once during the research project in discussions of some of the constraints facing one of the case study participants in the work context. To address this issue, and other possible instances of a breach of confidentiality, I undertook to circulate to participants the constructs developed from the original data sources (see 3.7.1.2). Participants were requested to comment on the constructs, suggest any amendments or deletions and respond to any possible misinterpretation of events. The issue of confidentiality further emerged in the process of writing the research report and relates to the use of participants' names and that of their organisations. In addressing this issue I requested permission from all participants to use their actual names and that of their organisations. My motivation for using actual names as opposed to pseudonyms, as discussed with participants, is that in keeping with the theme of reflexivity, I was attempting to present data accurately and factually. In my opinion the use of pseudonyms, appears to cover or mask data. This request was granted by participants, all of who had no objections to the use of their actual names and that of their organisations.

➤ **Reporting the research**

Punch (1986:15) sees the ethics of research reporting relying heavily on the academic integrity of the researcher and suggests '... coming clean' as a way of addressing this ethical issue. I attempted to make explicit the views guiding the interpretation of the data through a reflexive approach to the research process (see 3.4.2 & 3.4.3). I similarly attempted to provide for the reader as much detail as possible in assisting their understanding of the research process and interpretation of the findings (Punch, 1986:15).

3.6 TECHNIQUES IN DATA COLLECTION

I have borrowed from Wolcott (1992:19) the 'labels' of 'experiencing ...; enquiring and examining' as the basic data collection techniques applied in this study. Experiencing involves watching, listening and copious note taking of events during workshops and tutorials, more commonly known in research methods literature as observation (*ibid*). Enquiring moves the researcher beyond the role of mere observation to questioning and probing, to gain more insight into events observed. Interviewing, as a data collection technique, provided an appropriate

means for questioning and probing. Examining involved the analysis of various material sources, which I also refer to as document analysis in this research process.

3.6.1 Experiencing through observation

Observation is discussed here as a particular technique of data collection rather than a way of being in the research setting as a participant observer (see 3.3.2). I undertook observation in the course at the three national workshops and the three tutorial groups around which case studies were developed (see 1.3.2, 3.5.3 & 5.4.3). The purpose of these observations was to gain insight into course processes participants' interaction with / within these course processes and the role that these course processes play in enabling and supporting an engagement within reflexive processes and the development of reflexive competence (see 3.5.3).

Observations undertaken during tutorials and workshops I recorded in the form of field notes. I took a descriptive approach to recording the initial field notes to capture as much detail of the research setting as possible through detailed, accurate and thick descriptions of events (Patton, 1990:239; Cantrell, 1993:95). This descriptive approach was intended to guard against '... reading in [my] own answers and own biases' in what I observed and in so doing '... colour unfairly what [was] observed and detailed in writing' (Ely *et al*, 1991:54). Added to these I wrote corresponding reflective notes that provided the space for interpreting the descriptive notes and reflecting on these through the process of working with the data (Cantrell, 1993:95; Patton, 1990:241). These reflective notes I recorded as soon as was practically possible after the recording of the descriptive notes to ensure capturing as much detail as possible. Appendix two shows extracts from the observation notes written during the research process, with the descriptive notes written during observations on the right hand side and corresponding reflective notes on the left hand side. As the research process continued, the descriptive notes became more detailed. Initially, in recording my observations I became preoccupied with the research question and attempted to focus only on observing instances of change. After two tutorial meetings with the WCTG, I realised that I ran the risk of losing significant data. I then undertook to record as much as possible and to sort through these recordings during the process of data analysis (see 3.7.1).

My role as participant observer did have some implications for the observations made and the notes recorded at various stages in the research (see 3.3.3). The richest descriptive field notes were recorded at the national workshops and ECTG meetings (see 3.5.3). At these meetings I was less involved in course processes and could focus my attention on recording events as they were unfolding (see 3.3.2). Less detailed descriptive notes were recorded in WCTG meetings, since at times I was actively involved in course processes (see 3.3.2 & 3.5.3). At

times when I was less involved with course processes, I attempted to record as much as I could. The least detailed descriptive notes were recorded in the ITG, where I was constantly involved in course processes, and often had to make recordings after the tutorial. In this instance there is less distinction between descriptive and reflective field notes, since when making these recordings I had the time for reflection on events as well.

Observation in this research highlights both the strengths and weaknesses of this data collection technique. The strengths are reflected in increased understanding of course processes that emerged through the process of observation that allowed me to see the 'whole' of participants' engagement within reflexive processes and the development of reflexive competence in relation to these course processes through first hand experience with events as they occurred in the learning context (Cantrell, 1993:95). One of the biggest challenges in the process of observation emerged as a consequence of my close association with the course. I began the research process with perspectives on reflexivity and reflexive competence derived from my own practical experience within the course (see 3.3.2 & 3.3.3). Throughout the research I was confronted with the challenge of potentially imposing these perspectives on the data during processes of observation that would have resulted in a non-reflexive approach on my part as researcher within this study (see 3.4.3 & 4.5). I similarly experienced much of a challenge in standing back from my own perspectives on reflexivity and reflexive competence as I observed participants' interactions within course processes. However, the developing analytical framework emerging out of the literature review of the study provided me with the 'space' to 'stand back' and to draw on developing and emerging insights around reflexivity and reflexive competence in further processes of observation and data collection.

3.6.2 Enquiring through interviewing

Cohen and Manion (1980:272) describe interviewing as a process of '... gathering data through direct, verbal interaction between individuals'. In this research, interviewing was used to complement observation as a data collection technique, since '... we cannot observe everything' (Patton, 1990:278). Interviewing was used to '... access the unobservable' and to gather data from the perspectives of the course participants in their own words (Cantrell, 1993:96; Patton, 1990:278). I used interviewing extensively in the research process, relying primarily on face to face interviews, but also including telephonic interviews and e-mail interviews where circumstances demanded (see appendix 9, contents of DF 7). In this section I also include a discussion of questionnaires, described by Wolcott (1998:194) as being a part of interviewing. I conducted interviews with course participants to gain insight into an engagement within reflexive processes and the development of reflexive competence and with the tutors to

gain further insight into course processes and participants' interaction within these course processes in supporting reflexive agency.

At the start of the research process I requested the six case study participants to complete a questionnaire, to gather base line information (Wolcott, 1988:196) regarding their academic background and professional context and to gain some insight into the expectations that they had of the course prior to joining (see appendix 3). This was followed by an initial interview and discussions with each of the six case study participants (see appendix 4). The purpose of these initial discussions was to clarify the research process and the demands on these individuals as research participants and, more importantly, to get to know the research participants, the work that they do and some of the challenges that they are confronted with in the work context. This interview provided initial insight into some of the contextual environmental issues and risks and environmental education processes through which participants were responding to contextual environmental issues and risks.

These interviews were conducted shortly after the start of the course and the selection of the six case study participants. I was able to conduct face – to - face interviews with all of the WCTG case study participants, given their close geographic proximity. Since I wanted to conduct these interviews as early as possible into the course and due to time and distance constraints, I conducted interviews with the participant in the ECTG and ITG, telephonically.

Approximately three months after the completion of the course, I conducted a second set of interviews with each of the case study participants. The purpose of these interviews was twofold. Firstly, after an initial process of data analysis, I found certain 'gaps' in my data and used this opportunity to fill in those 'gaps' (see 3.7.1). For example, I knew that Anastelle had completed a B.Sc. Degree and suspected that she had been teaching for a while (see 3.5.3.3). Through the interview I was able to confirm that she had completed a B.Sc Degree and gather more details about her academic background and teaching experience (DF10, C6). Secondly, I used these interviews to gain deeper insight into participants' experiences of engaging in reflexive processes and the development of reflexive competence through interaction with various course processes. These interviews consisted of specific and individualized questions for each participant (see appendix 5) as these emerged from an initial process of data analysis (see 3.7.1). These final interviews were coupled to a visit with participants in their work context (see 3.6.1). The intention with coupling these interviews with visits in the work context was to get a better sense of the work context of participants and so develop a 'bigger picture' of the contexts out of which reflexive agency had emerged and which further shaped an engagement within reflexive processes in the context of the course.

The final interview with participants had less structure and provided for more flexibility and freedom in discussion, as opposed to the more structured approach used in the first interview and complete structure as reflected in the questionnaire (Cohen & Manion, 1980:273). I use the term 'less' structured as opposed to 'unstructured' since any interview I believe has structure by virtue of the fact that it is guided by a particular research question (Ely *et al*, 1991:58).

Throughout the research I conducted brief e-mail interviews with tutors following up on specific aspects emerging from my observations. For example, after observing the presentation of assignment two (see 3.5.3.2 & 6.2.3) in both the WCTG and ECTG, I wanted to know if and how the assignment was introduced to participants in tutorials. My observation notes showed that all of the WCTG participants did not discuss the principles underlying environmental education programmes, though this is explicitly stated in the assignment instruction (see appendix 12.2). All of the ECTG participants were very clear in their presentation of principles underlying their work. Through a brief e-mail interview with Wendy and Jane (see appendices 6 & 7) I tried to explore the reason for this difference as it related to course processes (see 3.5.3.2 & 6.2.3). At the end of the course I conducted final interviews with all course co-ordinators and tutors, by e-mail due to time and distance constraints. These were a uniform set of questions, sent to all co-ordinators and tutors, with the intention of gaining insight into how tutors worked with the course orientation and aims and how these shaped course processes in the different regional tutorial groups (see appendix 8).

Through the research project, I developed various insights into the use of interviewing as a data collection technique, each type that I used having distinct advantages and disadvantages. The face-to-face interviews seems to have elicited the richest data. For these interviews I made prior arrangements with a specified time frame within which the interview would be conducted so that participants could set time aside for exploring the interview questions and following up on any other aspects that emerged. Participants were usually focused and not distracted from the interview questions. One of the advantages of the face-to-face interviews was the possibility of picking up on non-verbal communication and allowing more of a conversational flow to the interview. A conversational style was more difficult in the telephonic interviews as I found that I stuck to the interview questions and participants responded very concisely. During the telephonic interviews it was not possible to read the non-verbal communication and I had to rely solely on what I heard. Silence could mean, 'I am thinking about something, I am reluctant to answer that question', or simply, 'someone just entered the room'. Because these were all trunk calls, I tried to maximise the time by focusing on eliciting answers to the questions rather than spending time trying to unravel non-verbal communication, into which I had no insight. With the e-mail interviews, respondents often just answered the questions and very often to the point. Due to a lack of scheduling of these interviews some participants were unable to find the

time to respond to them and continuous follow-ups were necessary to elicit responses. Shorter e-mail interviews with very few questions, as for example, those used in follow up questions with Jane and Wendy, appeared to work better than the longer complex e-mail interviews used at the end of the course with tutors (see above). A distinct advantage of the e-mail interviews was that participants had the opportunity to ponder the questions for some time and then respond. Another advantage is that, as a researcher, I had these interviews on record, which proved to be a bit more difficult in face-to-face interviews and telephonic interviews.

In recording interviews I used both tape recording and note taking. In the first set of interviews I took notes and tape-recorded discussions. The telephonic interviews were confined to note taking as the tape recording of a telephonic conversation proved to be a technological challenge. During the interviewing process, I found that I was often distracted by taking notes and found it difficult to strike a balance between listening and writing. In the follow up face-to-face interviews I used a tape recorder without writing notes and this proved to be less of a dilemma. Following the interview I then wrote notes reflecting on the interview discussions. The majority of participants were fairly comfortable with the use of the tape recorder except in the case of one participant whom I found glancing at the tape recorder throughout the interview. The use of the tape recorder might have been a distraction and may have put pressure on this participant to answer all of the questions as best he could. Despite some of these challenges encountered in this data collection technique, I was able to elicit rich data that complemented my other sources of data.

3.6.3 Examining through document analysis

Various documents were collected and analysed to provide additional information and to clarify and verify other data sources (Cantrell, 1993:97). To develop the course case study, I collected a course file from both the general course and the industry course, to gain insight into the theoretical perspectives that inform an engagement in reflexive processes. These materials similarly provided insight into the key features and perspectives informing the course. I also collected workshop programmes and activity sheets to gain insight into course processes in workshops. For the tutorial group case studies I collected tutorial programmes and activity sheets used in tutorials to complement my observation notes (see 3.6.1). For each tutorial group I also collected all of the assessment criteria developed by these groups and relative to the different assignments. Documents collected from the six case study participants formed the bulk of data collected and analysed during the research process. These were collected to gain insight into participants' engagement within reflexive processes and the development of reflexive competence relative to interactions with / within course processes. These documents

similarly provided insight into how course processes play out in the learning context of the course. Documents collected relative to each case study participant, includes:

➤ **Pre-course assignments**

The pre-course assignments outlines the professional context of participants (see 5.4.1) and were used as a basis for the choice of the six case study participants. They further provided insight into contextual environmental issues and risks to which participants were exploring responses and provided an overview of some of the methods and processes used in environmental education processes in these contexts. These assignments further highlighted the professional development needs of participants to better support the work that they do, the expectations that they have of the course and how they see the course responding to the professional development needs noted.

➤ **Assignment drafts**

All drafts of the four assignments prepared by participants during the course were collected (see appendix 9, contents of DF 1 – 6), through which participants provide a narrative of practice. The various assignment drafts provided me with insight into some of the challenges with which participants were confronted in their context with respect to environmental issues, risks and responses and similarly participants' reflexive explorations of new and different approaches to environmental issues and risks. These assignment drafts similarly provided insight into a range of other course processes and features, for example, interactions within assessment processes and participants' interactions with theoretical perspectives introduced through the course.

➤ **Reflective journals**

Participants were encouraged to keep reflective journals throughout the course to reflect on experiences and learning through the course. Not all participants in the course kept these journals during the 1999/2000 course. Of the group of six case study participants, only two kept these journals and I collected these as part of these participants' portfolios.

➤ **Course files**

At the end of the course I collected the participants' course files to gain insight into their engagement within the theoretical perspectives introduced through the course. Due to the bulky nature of the file, and the fact that participants often use this course file as a future resource, I copied what I considered to be significant aspects that reflected participants' engagement within

reflexive processes and the development of reflexive competence and those aspects that reflected participants' engagement within introduced through the course. For example, where participants noted a question or comment in the core text, or where participants highlighted or underlined parts of a reading, I photocopied these pages and included them in the participants' portfolio.

Large amounts of data were generated through this research. To manage these extensive sources of data, I developed various data files. For each participant, I developed a portfolio consisting of the initially completed questionnaire, the pre-course assignment, all drafts of assignments one to four, the individuals' reflective journal and copies of their course file. Some participants completed three drafts of particular assignments, others completed between one and two drafts of some of the assignments. Some participants completed reflective journals and others did not. Participants also engaged differently within theoretical perspectives contained in the course materials. The volume of data, and in some cases the contents in each participant's data file differed depending on the individual participants' engagement within various course processes. Each participant's portfolio was organized in a data file (DF) labeled data files one to six (DF 1 – DF 6). Records of all interviews for both participants and tutors were organized in a separate data file, numbered seven (DF 7). All observation notes and the research journal that I kept throughout the research were organized in data file eight (DF 8). Data file nine (DF 9) consisted of various documents collected from the three tutorial groups and supported data on course processes in other sources. Data file ten (DF10) consisted of the six constructs developed in the process of data analysis (see 3.7). Appendix nine provides further details of the contents of data files one to ten.

3.6.4 Triangulation as a means of validating data sources

In this research project the choice of what Cohen & Manion (1980:233) call a multi-method approach was prompted by the need to cover all focus areas required through the research question. For example, observation as a research technique, might have provided insight into participants' interactions within some course processes, though, on its own it was limited in its potential to provide the 'full picture'. For example, some examples of interactions with theoretical perspectives could be gained through observation, but an analysis of assignments and data from participants' course files provided complementary data in this regard. In another example, deeper insight into assessment processes could not be gained through observation on its own, thus prompting the need for document analysis, specifically focusing on written assignments. In this sense various data sources were complementary in providing deeper insight into course processes and features. The various data sources thus also served to verify data collected through the three different sources, for example, document analysis served to

verify what was said and observed. Methodological triangulation (Cohen & Manion, 1980:235) has thus been useful in enhancing the validity of the research findings (Muralidhar, 1993:445).

3.7 PROCESSES OF DATA ANALYSIS

Cantrell (1993:97) writes that there are no rules to data analysis and that analysis procedures are unique and specific to the actual research. The unique and specific nature of data analysis in this research is reflected in the ongoing, *multi-layered* and *multi-voiced* processes of analysis. Data analysis was undertaken at various stages in the research, in various phases and layers and involving various participants in these different phases and layers of data analysis (see diagram 3.5).

3.7.1 Phase one: Analysis for data generation and reduction

Phase one of the process of data analysis was undertaken during the course as well as after and aimed primarily at informing further data collection processes and the management and synthesizing of the large volumes of data. This phase of data analysis involved two layers, one focussing on data generation and a second layer aimed at management and synthesis of the data. This phase of data analysis involved all participants in the research process, including tutors and course co-ordinators in generating data and verifying interpretations of emerging data.

3.7.1.1 Layer one: Ongoing data analysis

Throughout the research I undertook ‘... continuous and ... progressive data analysis ... to focus and refocus [my] observational and interview lenses ... and check emergent hunches, trends, insights [and] ideas’ (Ely *et al*, 1991:140). This process of analysis, took two forms, and formed an integral part of further data collection processes in the research.

➤ *Impromptu* data analysis

The reflective notes written in conjunction with the descriptive notes during observations served as an *impromptu* process of data analysis (see 3.6.1 and appendix 2). The primary data source used in this first layer of analysis was the descriptive and reflective observation notes recorded. In writing the reflective notes certain questions emerged with respect to course processes, participants engagement within these and relative to the academic background and professional contexts of participants. I attempted to follow up on as many of these questions as possible, as

they arose. Section 3.6.2 provides an example of how I was able to follow up on one such question through e-mail interviews.

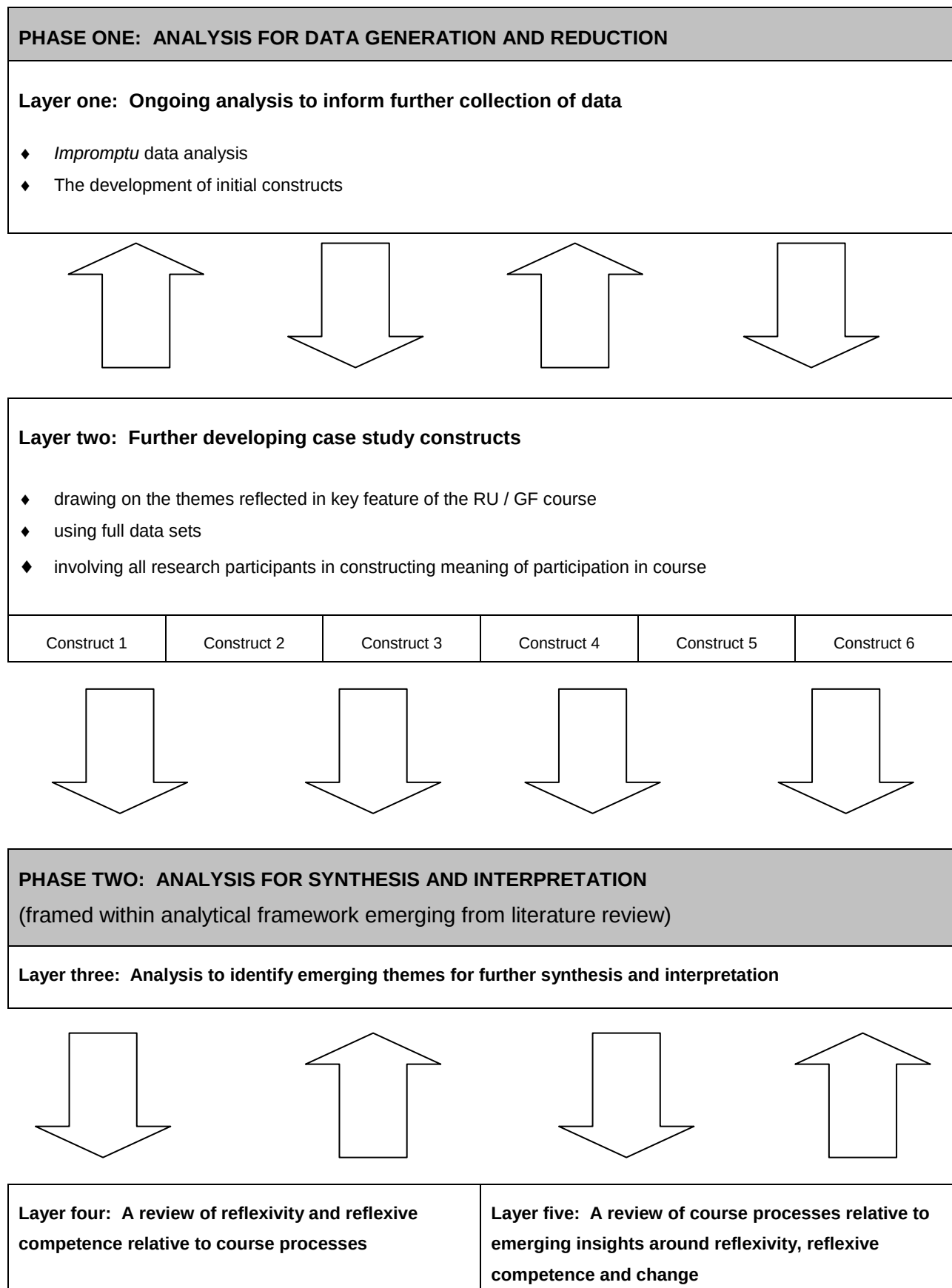


Diagram 3.5: Phases and layers of data analysis.

➤ Analysis to inform further data collection

The initial research design included an initial point of data analysis. Approximately half way through the research, I developed initial constructs for each of the six case study participants to ‘... provide meaning, cohesion and color to the presentation’ (Ely *et al*, 1991:154). These initial constructs drew on my observation notes to date (see 3.6.1), the first interviews conducted with case study participants (see 3.6.2) and their, at this point, incomplete portfolios (see 3.6.3). These incomplete portfolios consisted of the initial background questionnaire, the pre-course assignment, all drafts of assignment one and all drafts of assignment two. As noted before the number of drafts per assignment differed from one participant to another, ranging from one draft to three. From these constructs I was able to draw out issues that needed to be further explored through final interviews with participants (see 3.6.2). Similar to issues emerging through the process of impromptu data analysis some of the issues emerging relate to the academic background of participants, participants’ professional contexts, experience in environmental education and expectations of the course and how the course responded to these (DF8, RJ – 02/08/00).

3.7.1.2 Layer two: Developing case study constructs

As noted before, this second layer of data analysis in the first phase focused on organizing and synthesizing the large volumes of data generated through the research process. At this point in the process of data analysis, some of the data relating to participants’ engagement in reflexive processes and the development of reflexive competence and data supporting this engagement, relative to course processes, were located in various data sources and data files. For example, some of the data relating to assessment processes, and participants’ engagement within assessment processes, was located in written assignments in participants’ portfolios. Other data relating to assessment processes at the level of tutorial activities were located in the data files containing the observation notes. Given the dual foci of the research, and the intention to review an engagement in reflexive processes and the development of reflexive competence *relative to* course processes, it became necessary to synthesise the data from various sources relative to these two focus areas and aims of the research.

In an attempt to manage the data more effectively, to ensure that none of the richness in the data was lost in the process of analysis and to synthesise data relative to the two focus area of the research, I further developed the case study constructs, initially developed in layer one of the process of data analysis, for each of the six case study participants (see appendix 11). These constructs were further developed as ‘narrations’ of participants’ engagement within reflexive processes, highlighting the various integrative elements of reflexive competence and

relating reflexivity and reflexive competence to the various course processes that support and enable an engagement in reflexive processes and the development of reflexive competence.

This process of data analysis was conducted on completion of the course and thus incorporated all data sets (see 3.6). These data sources included:

- ♦ participants' portfolios including the background questionnaire completed by participants at the start of the course, pre course assignments, all drafts of all four assignments, reflective journals (in the event that these were completed by participants) and copies of certain aspects of participants' course files;
- ♦ interviews conducted with participants, including the first interview, follow up interviews in some cases and final interviews with participants;
- ♦ all observation notes taken during workshops and tutorials;
- ♦ all documents collected that relate to workshop and tutorial programmes and assessment processes including workshop and tutorial programmes, resources used for activities during these programmes and assessment criteria from three tutorial groups relating to each of the four assignments.

As narrations of participants' engagement within reflexive processes, these constructs were structured around and described two focal areas, these being:

- ♦ contexts that have shaped participation in the course, and
- ♦ professional development in the context of learning offered through the course and related to reflexivity and reflexive competence.

Part one of the constructs describe participants' academic and professional background, the work context at the time of participating in the course, the motivations they had for joining the course and some of the expectations that they had of the course at the time that they joined. These descriptions were included to provide insight into some of the multiple contexts that have shaped participation in the course and some of the factors shaping participation in reflexive processes in the context of the course. I use the terms 'multiple contexts' here to challenge modernist conceptions of context as being bound within specific geographical spaces and time frames (Popkewitz & Brennan, 1998:12) and in an attempt to encompass a range of factors within various social contexts, actions and interactions that have come to shape thought and

action. This exploration of contexts out of which reflexive agency has emerged is in keeping with the epistemological framing of the research (see 3.5.2).

Part two of these constructs was developed around six themes that, in the context of the course, were seen to support an engagement in reflexive processes and provide evidence of participation in reflexive processes. These themes were drawn from the introductory texts to the course materials that outline the key features supporting the reflexive orientation and aims of the course (see 1.3.2). These themes have similarly emerged as key features of professional development supporting a reflexive review in / of practice through prior research undertaken in the context of the course (Janse van Rensburg & Le Roux, 1998; Molose, 2000; Raven, 2000). They include:

- ◆ exploring conceptual understandings of environmental issues and risks and educational responses to these;
- ◆ understanding contextual factors that have shaped issues and responses;
- ◆ critically reviewing the assumptions that shape thought and action in relation to developing responses to environmental issues in context;
- ◆ drawing on theoretical perspectives to critically interrogate thought and action and exploring new and different ways of thinking about and acting on environmental issues and risks;
- ◆ interactions and deliberations within processes of exploring understandings of environmental issues, risks and responses; and
- ◆ personal and professional development to capture other aspects of professional development that might not be suited within the previous themes.

Once developed in first draft form, these constructs were circulated to participants, a peer of their choice and the specific regional tutor for comment. In the case of Daniel, the construct was circulated to one of the course co-ordinators to get a different perspective on this construct since I was the tutor in this case. Participants were requested to highlight any deletions and suggest amendments and additions to these constructs (see appendix 10). The themes noted above were used as headings in the constructs to describe 'instances' of engaging in reflexive processes and evidence of reflexive competence relative to course processes. I circulated the constructs using these themes as a way of providing respondents with a framework within which to reflect on an engagement within reflexive processes. Comments received were used to

further develop the constructs into final format (see appendix 11). In further developing these constructs, I deleted the theme headings. This was intended to open the data up to further analysis drawing on the emerging framework of analysis (see below) and I felt that in retaining the themes, the process of data analysis might be confined with a pre-defined framework informed by my personal experience within the course (see 3.6.1).

3.7.2 Phase two: Analysis for synthesis and interpretation

Phase two in the process of data analysis involved the further synthesis of data and, more importantly, opened the data up to further interpretation, drawing on the framework of analysis emerging from the literature review of the study (see 1.5.5). This phase of data analysis was undertaken in three layers and was undertaken in the preparation of the research report. At this stage in the process of data analysis, the research participants were no longer involved in processes of constructing meaning from the data, due to practical problems experienced in retaining contact with research participants after the course had ended (see 3.7.3). Layer three in this phase of data analysis involved further synthesis of the data to inform the process of interpretation undertaken during layer four and five in the process of data analysis.

3.7.2.1 Layer three: Identifying emerging themes

Through the second layer of data analysis and through ongoing interactions with the final constructs, some key themes began to emerge that were further explored in this third layer of data analysis. Firstly it became evident that multiple contextual factors largely shaped participants' intentions to join the course and engage within reflexive processes of exploring new and different approaches to environmental education. Similarly, it became evident that all participants were engaging within reflexive processes and were developing various integrative elements of reflexive competence through an engagement within course processes. I use the term 'integrative elements of reflexive competence', since at this point I began to realise that reflexive competence cannot be pinned down to a specific and discrete type of competence, but rather reflects an integration of a range of processural competences that enables and supports an engagement within reflexive processes. I similarly began to realise that there is a need to separate *reflexive processes* from the *integrative elements of reflexive competence*, the latter providing evidence of an engagement within reflexive processes (see 1.5.5). Further, what emerged from within this third layer of data analysis was that various tensions began to emerge from participants' engagement within reflexive processes *in context*. These developing insights emerging from the third layer of data analysis came to inform further processes of synthesizing the data (see 3.7.2.2), and informed the further interpretation of data. Themes of analysis that emerged from this layer of data analysis thus included:

- ◆ context as significant in shaping reflexive agency;
- ◆ The need to distinguish reflexive processes from reflexive competence;
- ◆ The emergence of various integrative elements of competence; and
- ◆ Tensions arising within engagements with reflexive processes in context.

These themes provided a framework within which to further interpret data relative to the framework of analysis emerging from within the literature review of the study (see below).

3.7.2.2 Layer four: A review of reflexive practice

Layer four in the process of data analysis focuses on reviewing and describing participants' engagement in reflexive processes (drawing on evidence of the integrative elements of reflexive competence), locating thought and action within multiple contexts (see below) and reviewing some of the tensions emerging from within reflexive processes in context.

In this phase of analysis, I primarily used the six case study constructs, referred to as construct one to construct six (C1 – C6) in discussing the research findings. I do however also draw on the original data sources to probe more deeply participants' engagement in reflexive processes and to find evidence of the development of reflexive competence

Drawing on the literature review and a re-articulation of the themes emerging from layer four, I further analysed data around three themes in this fifth layer. These include:

➤ Contexts of change

Through a social epistemology, Popkewitz (1998:11) draws attention to how knowledge systems, structures and practices (and power relations embedded in these) construct social agents in the world and shape systems of action. In this sense, I review contexts of change in an attempt to understand the conditions through which knowledge is produced and in turn shape thought, participation and action within reflexive social processes. This approach to history, Popkewitz (2001:4) argues is a counter to '... an empty history' and challenges the conception of the past as '... a refuge for the pressing problems of the present' (see 3.7.3).

An exploration of contexts of change is an attempt to locate and understand participation in reflexive processes in the broader context of change in South and more specifically in a context

of global and national change in environmental education processes and practices. As a follow on from an introduction to contextual factors shaping the research (see chapter 2), chapter four explores further the implications of global change for change processes in education and training in the context of transformation in South Africa. This changing political economy of professional development similarly explores trends and patterns shaping teaching and learning processes for adult learners and chapter five explores the RU/GF course as a context within which the learning and practice of participants have been shaped, through specific course processes.

Chapter 6 begins to explore more specifically the contextual factors that might have shaped participants engagement in reflexive processes in the course (see 6.2). Here, I explore the professional context of participants to gain insight into the factors and needs that have 'prompted' participation in the RU/GF course and similarly contexts that shape possibilities for, or '... enclose and intern reason and the reasonable person' (Popkewitz, 1998:11) as alternatives are explored. In addition, I explore participants' academic and professional background, emerging interests in environmental education and the broader context of change in South Africa to focus on the histories within reflexive agency has been shaped. In this sense, I make reference to 'multiple contexts' to reflect contexts broader than the immediate professional context of participants, but to integrate multiple histories into understanding reflexive agency. This discussion of contexts of change is critical to understanding the duality of structure as both the medium for, and outcome of reflexive social actions and interactions (see 1.5.1 & 1.5.5). Within this theme, I similarly explore participants' engagement within reflexive processes drawing on the learning context of the tutorial group in creating possibilities for, and in shaping thinking, participation and action.

This introduction of contexts of change is intended to provide for the reader a framework within which to understand participants' engagement in reflexive processes, which is the second theme around which data was analysed.

➤ **Engagement within reflexive processes in the context of the course**

The second theme informing data analysis in this phase is a review of participants' engagement within reflexive processes and the development of reflexive competence that enable an exploration of new and different possibilities for practice in context (see 6.3). In recognising the medium of reflexive processes as being an exploration and uncovering of unawareness - not yet knowledge – as articulated by Beck (1999:119), an analysis of the reflexive review in / of practice amongst participants focuses on their developing constructions of environmental issues and risks and the educational and other processes through which responses to these are

sought. This analysis similarly draws on structuration theory (Giddens, 1984; see also 1.5.1) in reviewing participants' engagement in processes of uncovering the boundedness of consciousness and actions as they critically review the nature and impacts of environmental issues and risks and processes in response to these. This analysis further draws on Popkewitz (2001), in focussing on how universal narratives come to shape discourses of change in a local context and Usher *et al* (1997; see also 1.5.3) in exploring interactions within existing and dominant knowledge frameworks.

In this layer of analysis, participants' engagement in reflexive processes is analysed through a process of finding evidence of integrative elements of reflexive competence. Past and current research has shown that reflexive competence cannot be pinned down to a single, discrete aspect of competence observable at any one point in time. Drawing on my developing conception of reflexive processes through which social action becomes questionable, is open to reorganisation and restructuring (Lash in Beck, 1999:116), I have come to see reflexive competence more in terms of a range of integrative competences that culminate in processural competence to engage within reflexive social processes. Reflexive competence can therefore not be separated from reflexive processes and is therefore considered in the context of reflexive environmental education processes, to critically and reflexively explore the construction of environmental issues and risks and responses within social context.

In an attempt to search for evidence of competence through which an engagement within reflexive processes is enabled, I identified various integrative elements of reflexive competence that are introduced below. These integrative elements of reflexive competence were drawn from the framework of analysis emerging from the literature review. In this process of attempting to find evidence of reflexive competence, I do however run the risk of adopting a reductionist approach to interpreting reflexive competence. The intention here is however not to reduce reflexive competence to a set of discrete capacities, but rather to reflect on the range of integrative processural capacities that 'work together' to enable and support a reflexive review in / of practice and respond to the social epistemology of practice. The integrative elements of reflexive competence used in this analysis are:

- ♦ Processes through which the nature, causes and impacts of environmental issues and risks become known, acknowledged and are questioned so as to explore critically and open to question the foundations of the real causes and impacts of environmental issues and risks (Beck, 1999:119; see also 1.5.1). This process begins to challenge what is known and not known about environmental issues and risks and begins a process of uncovering unawareness and the boundedness of consciousness and action (see 1.5.1). This element of reflexive competence was analysed in terms participants' developing understandings of

contextual environmental issues and risks, reflected mainly in work-based assignments, but also through interactions with fellow course participants and a range of other course processes that support the development of assignments.

- ◆ Processes through which participants explore socio-historical contexts within which environmental issues and risks are constructed and managed as a means to developing an understanding of the history shaping social thought and action as new and different options alternatives are explored (Popkewitz, 1999:35). This element of reflexive competence is explored relative to participants' exploration of socio-historical factors shaping the emergence and constructions of contextual environmental issues and risks and responses.
- ◆ Processes through which participants reflect critically on the unconscious preconditions of knowledge and action which begins to open up possibilities for renegotiating and re-establishing foundations and 'norms' for engaging within knowledge frameworks and embedded power relations (Beck, 1999:111; see also 1.5.1). This element of reflexive competence is explored in terms of the questions raised and explored with respect to understandings and practices in environmental education and attempting to think and act '... outside a framework of conventional understanding; ... to think anew, to think differently' (Burbules & Berk, 1999:59).
- ◆ Processes through which participants engage with theoretical perspectives in the search for new and different understandings and practices in environmental education. Popkewitz and Brennan (1998:11) argue for the use of theory as a '... thinking tool' to illuminate how practice and purpose is constructed through conceptions of actors and reason. This element of reflexive competence is analysed through focussing on interactions within theoretical perspectives as a means to breaking through the binds of unconscious frameworks guiding intentions (Usher *et al*, 1997:137; see also 1.5.3). Usher *et al* (1997:137) argue that in bringing these unconscious frameworks into the consciousness options for change and acting otherwise is opened up (i.e. new possibilities for participation and action emerge). Analysis around interactions within theoretical perspectives focuses on participants' interactions within these, to engage participants in conflicting rationalities, to understand the constraints to change and to explore new and different options for environmental education processes in context.
- ◆ Processes through which understandings and actions are challenged through interactions and deliberations amongst participants as new and different options for environmental education are explored. Giddens (1979:244) argues for the innate reflexive capabilities of social agents in coming to know more about social actions and interactions and

consequently being prompted to act differently (see 1.5.1). Loyal (2003:40) however critiques this individualistic account of reflexive agency and recommends that ‘... the active sociality of human beings’ be re-emphasised in understanding the contingent development of knowledge and action. Drawing on this critique, evidence of reflexive competence is further reviewed in terms of social actions and interactions (and the socio-historical location of these actions and interactions) in shaping understandings of environmental issues and risks and processes of response.

Though the analysis focuses on these integrative elements of reflexive competence, this evidence is reviewed as they culminate in a reflexive review in / of practice, shaped within and through multiple social contexts and interactions.

➤ **Tensions arising in contexts of change**

Theme one described above explores the multiple contexts that shape thought and action within reflexive processes. Theme two explores participation in reflexive processes as new and different options are explored which broaden conventional ways of thinking about and acting within environmental issues and risks and responses. In exploring participation within reflexive processes in context various tensions emerge in attempts to break through and beyond the rules of reason (knowledge frameworks and ordering of subjects in the world) that govern thinking and practice. Harley and Parker (1999:188) describe similar tensions emerging in teacher education processes in the context of change in education in South Africa. They (*ibid*) describe these tensions emerging as a result of participation in change processes, through which teachers are expected to explore different ways of thinking about and acting within teaching and learning processes. Tensions begin to emerge as participation in these change processes are shaped by roles and identities forged through the previous political dispensation and consequent social framework and roles (Harley & Parker, 1999:193).

Similar tensions appear to have emerged in the context of the course as participants engaged within a changing social framework, interactions and action. Participation in reflexive processes of change appear to have come into tension with conventional roles, identities and intentions shaped by social foundations which constructed specific ‘... classifications and distinctions among groups of people’ in a pre-democratic South Africa (*ibid*). As such, a third theme guiding the analysis was that of tensions arising in contexts of change, focussing on the ‘... “chains” of reason that bind and limit alternatives for action’ (Popkewitz, 1999:29). These tensions are further discussed in section 6.4.

3.7.2.3 Layer five: A review of the RU/GF course processes in relation to reflexivity and reflexive competence

Having identified the tensions emerging from engaging within reflexive processes and within socio-historical context, a fifth layer of analysis focussed on course processes in the RU/GF course. At this point of data analysis, course processes were analysed more closely to identify possibilities for reorienting the course to better support environmental educators and their reflexive engagement in environmental education processes as social processes of change. This layer of analysis focuses firstly on the reflexive orientation and aims of the course to gain insight into how the key ideas informing the course can more effectively shape course processes. This layer further focuses on various course processes and features in an attempt to find more effective ways of supporting participants' engagement within reflexive processes and the development of reflexive competence, cognisant of the potential constraints of socio – historical contexts, and arising tensions.

3.7.3 A multi-voiced approach to data analysis

Through the process of data analysis I have attempted to draw on the voices of other participants to assist me in constructing meaning in this research and to check my subjective interpretations of what I was seeing (see 3.4.2).

The idea of reciprocity (Lather, 1991b:59) is ideal in any research project, though some practical aspects hindered this process in this research. My initial intention was to circulate drafts of the constructs to check my own interpretations of participants' professional development experience. I further intended to circulate for comment the chapters in the research report that introduces and explores in more depth the data generated through the research. At the time of undertaking the process of data analysis, however, the full intention of involving participants in meaning making of participation in reflexive processes became problematic. Data was analyzed approximately one year after the completion of the course at which point communication and interaction with some of the research participants was not possible. I was able to circulate the draft constructs for comments to participants, tutors and course co-ordinators requesting feedback. This feedback became additional data generated that was built into the development of the final constructs. I received feedback from some of the participants, though not all. At this point of analysis I had lost contact with some of the research participants. For example, Cathy took up a teaching position in Atlanta (USA) and I was unable to make contact with her. I subsequently lost contact with her completely. Another participant meant to comment as a peer on one of the constructs had changed schools, and worked in a senior position at her new school. Communication with this participant was extremely difficult and I

suspect that an added work schedule constantly shifted commenting on the construct to the 'back burner'. Another participant, who initially showed much interest in the construct, simply failed to respond after numerous follows ups and reminders.

Some comments were however received and proved useful in further developing the constructs. Primarily, the comments received from participants mostly verified the interpretations alluded to in the constructs. For example, Melanie, a fellow course participant commenting on Vasintha's construct notes her '... insecurity, anxiety' in interacting with fellow course participants in the initial course meetings (DF10, C2). She further comments on Vasintha's development of confidence in expressing her ideas openly as a significant aspect in her professional development (*ibid*). She notes that '... she has developed the confidence in herself to air her opinions, knowing that ... others may differ from her, that does not make her opinions less valuable or irrelevant' (*ibid*). The development of confidence appears to be a significant aspect in Vasintha's professional development in supporting her to develop and run a workshop for her colleagues at her school, an aspect that I had initially not picked up in the analysis (see 6.4.2). In another example, Olwen, a fellow course participant commenting on Anton's construct, notes the frustration that Anton expressed in his work context in '... seeing a group of learners for three hours only and ... never again' (DF10, C1). Anton's frustration was noted in his assignment work and noted in the construct and the feedback comment served to confirm this frustration. A further example of confirming a hunch that I had in the initial analysis can be seen in Lawrence's comments on a statement in Songezo's construct, noting various ideas that Songezo developed through the course, but which did not materialize in his context (DF10, C5). He notes that '... Songezo seemed content with working within the ideas, and somehow reluctant to try them out' (*ibid*). He further emphasises Songezo's development through the course, but similarly notes the preoccupation with rhetoric, with little evidence of this having any kind of influence on his practice (*ibid*). These aspects are noted in the original constructs, and are verified by participants' comments. In certain cases, participants' comments offer an interpretation from a different perspective. For example, in commenting on Cathy's emphasis on the need for a policy on environmental education at her school coming from the top, Wendy notes that '... Cathy finds it easier to work with things that she is told to do although she may not like it' (DF10, C3). This, she notes, created a bit of a dilemma for Cathy in the course in waiting to be told how to do things, but resenting it when it appears to have been imposed on her (*ibid*). This is an interpretation that I had not considered and which was more apparent to Wendy in her closer interaction with Cathy as tutor for the group. A similar example is Olwen's interpretation of Anton's teacher workshop in response to his frustration with having limited time with learners at the CCE (DF10, C1). She interprets this workshop as responding to this frustration, whereas my initial interpretation of Anton's teacher workshop was to pursue his vision of where the CCE needs to place their focus (*ibid*). Daniel's comments on his own

construct served to verify what was noted as well as to correct some factual aspects. For example, I thought that part of the environmental education programme in his work context consisted of a full one-day programme. He corrected this and noted that ‘... there is only one hour available’ (DF10, C4). He further used the opportunity to provide additional information on how the environmental education programme has been restructured in his professional context through the efforts of members in his department (*ibid*).

Though an attempt was made to invite participation in the construction of meaning, this process however, remained limited. Participants were involved, primarily in verifying data and very little was offered in the way of interpretation. Participants were thus not involved in ‘... the interpretation of descriptive data’ which Lather (1991b:58) suggests is ideal in adopting a praxis oriented approach to research. Reciprocity (see 3.4.2) was attempted in the research process, though practical considerations limited this process.

3.8 SUMMARY AND CONCLUDING COMMENTS

The research question was explored, drawing on an interpretivist perspective as a guiding framework for the study. Through a process of participant observation, multiple embedded case studies were developed and explored within multiple contexts that shape participation in reflexive processes. Data collected was undertaken using processes of observation, interviewing and document analysis. Data was analysed throughout the research process, in various phases and layers and drawing on participation from research participants in some of the phases and layers. In reflecting on the research design decisions, various insights emerged. These include:

- ◆ An interpretivist perspective proved to be an appropriate framework in supporting the aims of the research, to gain insight into participation in reflexive processes and the development of reflexive competence in the context of the course and relative to course processes (see 1.2 & 3.2). Despite this, I did however experience the binds of confining oneself to a particular research orientation, and have come to see various research traditions as ‘paradigms of choices’ appropriate to the aims of a particular research study (see 3.4.1).
- ◆ Developing multiple embedded case studies provided for rich, detailed information, covering all focus areas in the research and allowing for a focus on multiple contexts shaping thought and action amongst participants (see 3.5). This approach did however generate volumes of data, highlighting the challenge of data management. The first phase of data analysis however proved to be valuable in organising, managing and synthesising data, but also

proved particularly useful in shaping the analytic framework for further data analysis (see 3.7.2).

- ◆ A combination of observation, interviewing and document analysis was useful in covering all the necessary focus areas in the research, as well as providing for a useful process of triangulating data sources (see 3.6.4). What emerged as a useful data collection technique is the recording of reflective notes as an expansion of descriptive notes (see 3.6.1), as a point of initial data analysis and highlighting aspects for further follow up in the research.
- ◆ Reciprocity, though an ideal way of addressing power imbalances amongst research participants and researcher in the meaning making process in research, is contingent on some practical considerations that could limit the extent of its practical application in processes of inquiry. Levels of commitment to, and interest in a research study, inevitably differ amongst research participants. Researchers generally have more of a vested interest in research processes, prompted either by financial or professional gain. Other research participants might have other priorities that could limit their participation in processes of inquiry. This points to the need for closer attention to be given to planning for the involvement of research participants in processes of data analysis and interpretation.
- ◆ Considering the cases in context has resulted in the description of context-specific cases, minimising the potential for generalising the research findings. The intention through the research was however not to arrive at generalisations, but rather to provide insight into these context-specific cases which might be used as 'lenses' through which to critically reflect on environmental education processes and practice in different contexts. The findings are summarised as 'possible implications' for environmental education course design that reflects the need to interpret these within the specific context out of which they have emerged. The potential for the transferability of these findings is made possible by the rich description of the contexts within which the cases were analysed.
- ◆ The literature review emerged as significant in shaping the interpretative lenses through which data was analysed in the research. Rather than imposing these theoretical perspectives on the data generated and analysed, these theoretical perspectives, brought into relationship with emerging insights gained through the third layer of the analysis, provided a framework for making sense of and interpreting the data. As outlined in section 3.7.2.1 these perspectives were drawn on in developing a framework of interpreting participants' engagement within reflexive processes in context, and some of the tensions emerging from participation in these processes.

- ◆ Epistemologically, socio-historical context emerges as a critical aspect in focusing on the relationship between context and social actions and interactions. A research design involving multiple layers of cases embedded in context has allowed for a consideration of the influence of context and history in shaping participation in social processes and has to some extent accounted for the power relations in the context of the cases. The case studies have also been contextualised within the broader socio-historical changes shaping education and training, professional development and environmental education in South Africa. So while these cases have been able to capture 'instances' of practice, these instances are part of a bigger story of change in a South African context of transformation.

Following on from chapter two that briefly introduces the research context, chapter four explores a changing political economy of professional development and so attempts to provide more detail of the broader context of change within which the cases are located. This to provide a broader landscape within which to interpret the multiple cases.

4.1 INTRODUCTION

Internationally, education and training policies and practices are being shaped by processes of globalisation as more and more countries join the drive towards integrated market economies (see 4.2). This internationalisation of education and training policy and practice is evident in standards-based reform processes that are being introduced in various countries worldwide (see 4.3). Standards-based reform processes with their focus on competence as a defining framework for education and training have however, been extensively critiqued (see 2.3 & 4.3). National standards based on competence are seen to narrow learning opportunities particularly when the focus is on work-related competence (see 4.3). In introducing standards-based reform processes, South Africa seeks to address a twofold agenda of stimulating economic growth, in addition to bringing about social redress (see 2.4). This has resulted in the South African NQF being described as having a hybrid character (see 4.3.1 & 4.3.2). The South African NQF has gone some way to addressing some of the major critiques surrounding standards-based reform though the framework itself does not ensure alternative approaches to instrumental forms of learning (see 2.4, 4.3.3 & 4.6).

As noted earlier, the RU/GF course aims to support the work of a diverse group of adult learners who are seeking to respond to a range of diverse and complex environmental issues and risks that confront them (and the learners with whom they work) in varied contexts and settings (see 1.3.2). Within the context of South Africa, opportunities exist for the re-orientation of the course within the NQF providing participants with the opportunities for formal recognition of learning in the course (see 2.7 & 2.8). The following section explores the changing political economy of professional development for adults with an emphasis on the notion of lifelong learning (see 4.4). Against the backdrop of the shaping influence of globalisation on processes of change in education and training policy and practice, it explores the significance of change in highlighting the crucial need for processes of lifelong learning (see 4.4.1). It explores the shifting conceptualisation of adult learning in the context of lifelong learning as a means to opening up learning opportunities to accommodate for diversity and difference (see 4.4.2). It further explores some methodological approaches supporting processes of lifelong learning and looks at the implications of this for environmental education processes (see 4.4.3 & 4.5). It then critically reviews the notion of reflexive competence within the South African NQF and attempts

a reinterpretation of reflexivity in a competence framework within a context of transformation (see 4.6).

4.2 ECONOMIC RATIONALISM AS A SIGNIFICANT MOTIVATOR FOR EDUCATIONAL CHANGE

Internationally, policy making in the last quarter of the twentieth century is increasingly being shaped by '... market rules of engagement where workers trade their skills, knowledge and entrepreneurial acumen in a global labour market' (Donn, 1998:71). In this context of globalisation, change in educational policy and practice, whether '... endured passively or anticipated proactively' (Morrow & Torres, 2000:48) is based on the imperatives of flexible production for international competitiveness (*ibid*:41). This discourse of neo-liberal policies based on increased economic competitiveness has been the '... master narrative of educational reform' driving processes of educational change in both developing and developed countries alike (Kallaway et al, 1997:1; Edwards, 1997:31).

Globalisation can be described as the progressive integration of national economies through market mechanisms resulting in the emergence of a global market economy (Edwards, 1997:14; Lotz & Keet, 2000:35; Morrow & Torres, 2000:29; Usher *et al*, 1997:2). Within this global market economy consumption patterns change and dictate changed forms of production practices (Edwards, 1997:14). These changes are accompanied by transnational flexibility of capital and labour markets and new forms of communication and information technology are introduced (*ibid*; Usher *et al*, 1997:2). Central to this global market economy is increased international competitiveness and the need for flexibility (Edwards, 1997:14). Burbules and Torres (2000:2) see processes of globalisation as '... becoming an ideological discourse driving change', making it increasingly difficult for nation states '... to opt out of or avoid the consequences of being drawn together into a tighter configuration' (Edwards, 1997:14). Global market trends come to shape and influence national and local experiences and the agencies and policies of nation states '... become adjusted to the rhythms of the new world order' (Donn, 1998:70; Burbules and Torres, 2000:7).

The need for increased economic competitiveness and flexibility underlying processes of globalisation has come to have a significant shaping influence on policies and practices in education in most countries (Donn, 1998:70; Burbules & Torres, 2000:4). In this sense, Chisholm (1997:50) writes that worldwide, education systems are being restructured within a framework of '... neo-liberal, market strategies for economic growth'. Usher *et al* (1997:2) writes that changes in products, services and work practices has led to the '... reconstruction of the workplace and the social definition of skills'. Work sites are increasingly being seen as sites of learning and skills come to be redefined as 'competence' (*ibid*). Competence, embodying

skilled performance, becomes a significant part of the education agenda and an important and valued outcome of the learning experience (*ibid*:14).

In this context of economic change, the notion of lifelong learning has gained prominence in education policy and practice. Increasingly initial schooling is being seen as inadequate in preparing individuals to deal with the complexities of the world of change (Nesbit, 1999:265). As early as the 1960's lifelong learning has been highlighted in education discourses and used in relation to supporting adults to better understand and act in a context of increasing economic and social change (*ibid*). Since the 1970's, as processes of globalisation intensify, more emphasis is being placed on lifelong learning in processes of change in education policy and practice from the perspective of supporting economic change and the need to promote economic competitiveness (*ibid*). Nesbit (1999:272) writes that, in this sense, education becomes more instrumental supporting business' needs for increased job and worker mobility and productivity. Education has become a '... learning market' where learners become mere consumers purchasing education as a commodity (*ibid*). In this view, Usher *et al* (1997:14) argue that '... knowledge becomes assimilated to information that can be conveyed via electronic media' and through this process becomes commodified. Education processes then become individualised and are '... reconstituted as a market relationship between producers and consumers' in view of the performative value that it holds for the consumer ((Nesbit, 1999:272; Usher *et al*, 1997:14). Donn (1998:71) argues that this commodification of education '... leaves behind the view of education as a social good – a force for equity and social justice'.

The over emphasis on economic rationalism as a motivator for change in education policy and practice becomes problematic in that issues of social and cultural equity become secondary considerations (Sedunary, 1996:380). Though economic growth is often presented as the solution to economic and social problems, economic restructuring based on neo-liberal policies of increased globalisation has done little for a large percentage of the world population living in dire poverty (Lotz & Keet, 2000:35). On the contrary, despite increased economic development, the gap between rich and poor continues to grow steadily (*ibid*). In this sense, Edwards (1997:22) writes that social factors are '... subsumed to a single form of causality' with little attention being given to the effects of change processes on creating and maintaining social differentiation (Nesbit, 1999:273). This argument does however, not negate or undermine the importance of economic change. What is however similarly important is that, as educators we remain mindful of the effects of education policy and practice in maintaining or furthering social difference. In this sense, Burbules and Torres (2000:2) suggest that we acknowledge the forces of globalisation and the implications it has for shaping and constraining the choices on which change in education policy and practice is based. This, so that we do not succumb to the

‘... rhetoric of “inevitability”’, but recognise that as change does occur it can happen in ‘... different, more equitable and just ways’ (*ibid*).

Educational change in South Africa reflects significant congruence with international trends (Chisholm, 1997:80). However, South Africa’s decision to develop and implement standards-based reform through the introduction of an NQF was a strategic one, designed to play a role in ‘... nation building, reconstruction and development’ in the post apartheid era (Department of Education & Department of Labour, 2002:55). As such the design and implementation of the South African NQF has been shaped by the ‘... specificities of the South African context’ (National Training Board, 1997b:49) and is intended to respond to the specific social and educational context in South Africa (Chisholm, 1997:51). Policy initiatives informing the introduction of the NQF emphasise the need for educational change to address the dual concerns of human rights and human resource development to contribute to increased democratic participation and increased international competitiveness (Chisholm, 1997:51; Christie, 1997:117; see also 2.4). The Reconstruction and Development Programme (1994) identifies economic growth as ‘... the principal mechanism for financing socio-economic and poverty alleviation programmes’ (*ibid*:54). As such the NQF suggests a new path of socio-economic development for South Africa, through which transformation of the national economy to compete globally is coupled to the need to meet basic needs of the majority (De Clercq, 1997:150). In this sense, Muller (1996:3) describes the South African NQF as constituting a hybrid character, reflected in the ‘... social project of egalitarianism and empowerment [being] linked to the skills needs of the national economy’. The South African NQF seeks then to address the global economic needs of a competitive, multi-skilled and flexible workforce while at the same time responding to local imperatives of redress and equity. This interplay between global and local imperatives is however, a cause for great scepticism in the South African education community (see 4.3.2). Muller (1996:17) in commenting on the potential discrepancies between espoused and actual policies, or macro plans and micro realities, writes that it is in the development and use of national standards that the scale balancing these imperatives is likely to tip as the South African NQF is actualised.

4.3 STANDARDS-BASED REFORM

In many countries, such as the United States of America (USA), Canada, Mexico, the United Kingdom (UK), Scotland, New Zealand, Australia, some European Union countries and, more recently, South Africa and Namibia, standards-based reform processes are being introduced. These processes of standards-based reform are being effected through the development and implementation of National Qualifications Frameworks (NQFs) which define competence-based standards to direct teaching and learning. The Department of Education and the Department of

Labour (2002:55) see the development and implementation of NQFs as an international movement of '... considerable vigour and increasing range' as these initiatives spread to all continents and gather strength (*ibid*:36). The establishment of NQFs is supported by various international organisations (the International Labour Organisation, UNESCO, the Organisation for Economic Co-operation and Development), regional organisations (European Union, Southern African Development Community, Pacific Islands Forum, Caribbean Community) and national governments (Departments of Education & Labour, 2002:55). Not all countries have embraced the idea of establishing NQFs, though the restructuring of economies and working life are forcing these countries to rethink their own models of education and training (*ibid*).

Through the development of NQFs, opportunities are being opened up for the accreditation and articulation of lifelong learning and the development and updating of skills and competence through which social justice and equity are seen to be advanced (Donn, 1998:52). For example, in Australia and South Africa education reform and the introduction of an NQF is linked to processes of economic and social reform (Department of Education & Department of Labour, 2002:44). Similarly, in the United States and Canada, though both countries do not have the legislative framework for implementing NQFs, educational reform is being shaped by the need for a competitive workforce and promoting social justice (*ibid*:45). In many countries though, despite the articulation of economic and social goals in processes of educational reform there appears to be an over emphasis on the development of work-related competence with issues of social equity and justice becoming peripheral objectives (see 4.3.1). These instrumentalist approaches to education have come to be seen as the main critique in processes of standards-based reform (see 2.3 & 4.3.2).

4.3.1 Competence as a defining framework for education and training

Central to processes of standards-based reform is the notion of 'competence' that is the basis for developing national standards and qualifications. Standards and qualifications are accredited within a national framework with assessment for accreditation being based on demonstrated competence by the learner. Competence then becomes the central feature in the defining framework for education and training.

Initial interpretations of competence refer to what a worker is able to do in relation to a particular job (National Training Board, 1998:22). Within this interpretation of competence, requirements for a particular job would be listed as standards and provides the basis against which a person would be judged competent (*ibid*). These descriptions of competence become more of a job specification and neglects the knowledge base underlying the performance (*ibid*:23). As these job requirements become increasingly inadequate in describing performance in higher levels of

training where the nature of work is more complex, the knowledge underpinning performance gains importance in defining standards (*ibid*). In addition, specific defined competences become redundant in an economic context of change in work practices and organisation (*ibid*:26). This marks an important shift in thinking from a focus on performance to a focus on competence underpinning performance as it becomes necessary for workers to undertake both routine tasks and to adapt to changes within the work context (*ibid*).

Muller (1996:10) and Harley and Parker (1999:183) distinguish between two epistemological approaches to competence-based national standards that have particular implications for the acquisition, transmission and assessment in learning processes. Muller (1996:14) sees these epistemological approaches ultimately coming to define specific social roles of acquirers and transmitters in different ways (see 4.3.2). In what Muller (1996:14) calls the *performance model* (also referred to as the outcomes model by Harley and Parker, 1999:183) focus is primarily on 'performativity' or skilled performance within specific job roles and educational outcomes are determined by external, economic market-oriented factors (Usher & Edwards, 1994:176; Muller, 1996:13). Learning outcomes or the product of learning becomes the focus of the learning process (Harley & Parker, 1999:183). Learning processes are characterised by specifically defined curricula, explicit rules of acquisition in which the learner has little or no control over learning and definite criteria against which to judge adequate or inadequate performance guiding the learning process (Muller, 1996:16; Harley & Parker, 1999:183). *Competence models* on the other hand focuses more on the process of learning with learner competence being read through performance (Muller, 1996:15). Learner performance is read as variants and inadequate performance is understood in the context of extraneous circumstances with all learners having the potential to demonstrate competence over time (*ibid*). Within the competence model learning processes are not subject to any specific rules of acquisition and transmission and the pedagogue attempts to minimise the directive role played in the learning process. In this sense, Muller (1996:15) notes that the competence model is driven by the egalitarian project intended to promote equity, justice and social transformation.

As various countries continue to engage with processes of standards-based reform, competence underlying work related performance continues to be central to the development of national standards. Muller (1996:19) writes that in most national systems, aware of their competitive position in the global economy, the pendulum inevitably swings toward the performance model. In the various countries who have implemented NQFs '... different driving forces, different social contracts or partnerships and different social aspirations at work' have led to differing approaches to the development and implementation of national standards (National Training Board, 1997b:49). In the UK standard setting processes have primarily been driven by employers with less involvement from other social actors (*ibid*; Hager & Gonczi,

1996:246). Occupational competence and performance are at the heart of the National Vocational Qualifications (NVQ) system in the UK (National Training Board, 1997b:53). As such, NVQ standards have been primarily conceptualised and designed ‘... to champion performance in the workplace [and] increas[e] personpower and national productivity’ (*ibid*:52). In Scotland, educational reform reflects strong resonance with work, vocation and employment (Donn, 1998:59). Similarly, in New Zealand human resource development is foreground in the development of national standards as a means to improving competitiveness in the global market economy that Donn (1998:58) argues was a response to the political and economic crisis existent in New Zealand at the time. In Australia, standards-based reform was initiated as a response to the changing social and economic milieu that demanded a change with past educational values and practices (Sedunary, 1996:378). A generic set of ‘key competencies’ guide processes of standard setting that Sedunary (*ibid*:380) argues ‘... treat[s] life as a peripheral extension of ... work’ which renders it a secondary beneficiary of key competencies.

Similar to the Australian experience, standards-based reform processes are being approached in South Africa within a context of social and economic change (see 2.4 & 4.2). As an attempt to respond to the project of social justice, egalitarianism, redress and empowerment on the one hand, and the need for a flexible, mobile and retrainable workforce, on the other, Muller (1996:17) writes that the South African NQF is attempting to respond to ‘... conflicting tendencies, requirements and imperatives’. The South African NQF uses the term applied competence, in which competence is defined in a way that supports a commitment to lifelong learning, bridges the old theory-practice divide and captures the capacity to learn about and from our own learning (National Training Board, 1997b:106; see also 1.5.4 & 2.4). This is an attempt to move education and training away from the instrumentalist forms of learning that caters primarily to the needs of an increasing competitive economy. Muller (1996:17) however notes that the attempted articulation of the two social discourses in policy underlying change does not however guarantee the equal prioritising of these global and local imperatives in the development and assessment of national standards. He (*ibid*) notes, for example, that some of the industry board projects are writing their standards in performance terms whereas others, such as the ABET field are writing them in competence terms.

Harley and Parker (1999:184) see the actualising of the NQF within this context as adopting a hybrid approach to qualifications made up of unit standards mediating between performance and competence. As noted earlier, applied competence as defined in the South African NQF integrates practical, foundational and reflexive competence (see 1.5.4). Practical competence is linked to occupational skills, foundational competence to the knowledge implicitly or explicitly embedded in the curriculum and reflexive competence to the values and disposition inherent in learning (Harley & Parker, 1999:185). Applied competence can only be assessed through the

integrated assessment of all three elements of the curriculum (*ibid*). The challenge in the South African NQF is in this process of integrated assessment where the scales between social and economic imperatives can be balanced to meet global as well as local priorities intended through the NQF implementation.

4.3.2 An expanded critique of competence

Central to the critique of competence-based systems of education and training is the narrow conception and behaviourist orientation underlying competence (Kraak, 1999:46; see also 2.3). In a critique of defining national standards in the UK, Barnett (1994:74) sees a competence-based system as focusing primarily on skills, allowing knowledge into the model as far as is necessary and can be demonstrated, and through which understanding becomes a ‘... far more elusive matter’. Related to this argument is the critique of how defining specified competences limits learning opportunities by reducing education to an instrumental means to a specified end (McKernan, 1993:346). A further critique taken by Usher and Edwards (1994:106) is that though competence-based systems are projected as a ‘progressive’ form of educational policy and practice, it mystifies the regressive narrowness and vocationalism of competence-based standards and ‘... fails to address the politics of the situation ... the complexity of hegemonic practices’. In this sense, Muller (1996:18) writes that ‘... competence based motifs may be running into a performance wave on the rebound’ where competence practices are undertaken within a performance regime (see 4.3.1).

Usher and Edwards (1994:110) writes that competence is ‘... simply behavioural objectives in a new guise’. They (*ibid*) note that the discourse of competence is not in itself behaviourist however competence could come to be defined in behaviourist terms. In commenting on the National Council for Vocational Qualifications standards, Edwards (1997:139) notes that it is performance that is valued in the UK competence-based system with knowledge and attitudes necessary to successful performance being constructed as secondary. Kraak (1999:46) shares similar concerns in commenting on the implementation of the South African NQF. He (*ibid*:47) notes that the narrowness in competence-based models are reflected in an attempt to describe competence in ‘... precise, transparent and observable terms’. Thus qualities that cannot be measured in discrete and quantifiable terms, but form key priorities of ‘... a good and general education’ are marginalised in teaching and learning processes (*ibid*:46). In the same light, Barnett (1994:76) argues that no serious account is offered with respect to the relationship that exists between thought and action. Deacon and Parker (1999:64) note that this behaviourist or instrumentalist approach to competence-based models reduces judgement and assessment to the measurement of observable practices, thus narrowing the potential and process of learning.

Assessing knowledge, understanding, values and dispositions underpinning successful performance appears to present a series of major challenges to teaching and learning within a competence-based model of education and training (Barnett, 1994:73). Firstly, in a global context where knowledge is constantly changing it becomes difficult to define with precision the knowledge underpinning performance in advance (*ibid*:75). In the context of a 'risk society' the defining of specific knowledge underpinning performance becomes particularly problematic, if not impossible, given the uncertain and unpredictable nature and quality of environmental issues and risks with which learners engage in reflexive environmental education processes (see 1.5.1, 2.6 & 5.2). Secondly, precise definitions of performance and knowledge is further problematic in that it does not allow for an exploration of 'unawareness' or what is not known about environmental issues and risks which Beck (1999:109) sees as significant in dealing with risks (see 1.5.1). Edwards and Usher (1994:7) note that tying competence too narrowly to successful performance does not allow for the transferring of skills or the development of a critical awareness that allow people to respond to change or take control of their actions. In this sense Muller (1996:8), citing Young cautions against trying to over-specify standards and encourages us to leave some leeway for originality and creativity. Thirdly, in processes of assessment the demonstration of knowledge and understanding underpinning specific performance becomes problematic and Edwards and Usher (1994:7) question whether knowledge and understanding can be implied in successful performance. Deacon and Parker (1999:63) note that the assessment of competence is inferred from performance that in itself becomes problematic in assessment processes. They (*ibid*) note that performance can be '... illusory, ... learned by rote or a matter of luck'. Similarly, Edwards (1997:139) and Barnett (1994:75) argue that in processes of assessment understanding becomes marginalised to the extent that understanding could be reflected in a performance of some kind, but a learner could also understand something without showing it to the outside world (*ibid*). Understanding could thus be present without it being demonstrated (*ibid*). In responding to these challenges, it appears necessary to define competence in a way which accommodates for developing the capacity to engage critically with processes of change and, secondly to design learning and assessment processes which allows for a clear reflection of knowledge, understanding, values and dispositions underpinning performance.

A second major critique of competence-based systems is that education processes might be reduced to closed and linear learning events with the outcome being reflected as a product to ultimately be reached. To this end, McKernan (1993:346) argues for the importance of focusing on education as process and not product. Competence defined as outcomes could constrain learning opportunities and fail to encourage learning in unanticipated and unpredictable directions (*ibid*). Kraak (1999:46) supports this view in commenting that in adopting a narrow approach to developing competence there is a risk of imagination, creativity and innovation

being marginalised in learning processes. Thus adopting a linear approach to competence-based learning, McKernan (*ibid*) argues is 'non-reflexive' since it specifies the limits of the learning experience and '... suggests that there cannot be more education than is encompassed by the stated outcomes'.

A third and perhaps more significant critique of competence related to the two noted above, is the role which competence could come to play in perpetuating and maintaining structures of dominance in society. In critiquing the process of standard setting by employers in the UK, Barnett (1994:73) questions whose interests are represented in the national standards developed. Barnett (*ibid*:78) takes this argument further in suggesting that the world out there imposes its meanings and ordering on us. He (*ibid*) argues that these meanings and orderings reflect instrumental reason that in modern society becomes the dominant mode of reason. The notion of competence he (*ibid*) argues is characteristic of instrumental reason, '... getting things done or ... saying things for a purpose'. Edwards and Usher (1994:12) concur with this critique in noting that '... behaviourally expressed competences ... reflect the narrow interests of employers' and becomes a form of '... domination by employers over the workforce'.

Edwards and Usher (1994:2) extend this argument by seeing competence-based systems as a strategy of governance or what Muller (1996:11) refers to as 'technologies' of governing. Edwards and Usher (1994:2) draw on Foucault's thesis of 'governmentality' that refers to a network of discursive and material practices based on specific power-knowledge formations. Power and knowledge, rather than being viewed as counter-posed, are considered to be inseparable from one another (Edwards, 1997:8; Edwards & Usher, 1994:2). Edwards and Usher (1994:2) describe this power-knowledge relationship as being correlative and always found together in knowledge discourses and practices where power is manifested and exercised, what Foucault (cited in Usher & Edwards, 1994:87) refers to as 'regimes of truth'. Usher and Edwards (*ibid*) write that knowledge is always found in relation to its uses and thus in relation to forms of power thus constituting knowledge as a material element of social life (Popkewitz & Brennan, 1998:4). In this sense Edwards (1997:8) writes that '... knowledge is permeated with power and exercises of power are imbued with knowledge'. Disciplinary knowledge thus comes to be associated with practices of power that regulate and position individuals in specific social roles (Fendler, 1998:89) and results in certain forms of experiences and subjectivity (*ibid*: Edwards, 1997:8).

In competence-based systems of education and training, competence is seen as a key element of power-knowledge formations that comes to regulate and form adults through a process of self-regulation (Edwards & Usher, 1994:2). Usher and Edwards (1994:103) suggest that competence is reflected as norms and people become subjects by being classified in relation to

these norms. People then become subject to surveillance through the list of competence and performance indicators which are presented to them as the desirable outcome of the learning experience (*ibid*:110). Competence then does not just become a matter of performance, but surveillance and control of the learner introducing a governmentality based on this form of self-surveillance (Edwards & Usher, 1994:11). Competence-based education and training systems as exercising disciplinary power over people thereby seek '... to produce a workforce of victims who are passive to their own oppression' (Usher & Edwards, 1994:102). In this way the exercise of power has moved from a more direct means of repression to a less obvious form of governance (*ibid*:6). In this sense, Muller (1996:4) cites Bernstein in commenting on the nature of the South Africa NQF which he sees as generating an '... in-built procedural democracy, in-built creativity, [and] in-built virtuous self-regulation'.

Extending this argument and related to the first critique is the way that competence-based systems exclude certain forms of knowledge to maximise correct performance (Usher & Edwards, 1994:105; see also above). In this way '... conditions which would make alternative agendas possible are displaced by the normalising process of education and assessment' (*ibid*). '... There is no space for independent thought or action ... if one wishes to achieve competence and find a space in the workforce' (*ibid*:109). In this sense, Edwards (1997:27) comments that within the context of a globalising economy, economic change is presented as normal and inevitable '... to which individual adaptation is both necessary and good for the person'. In this sense then, the socio-ecological consequences of increased economic growth are shifted to the periphery and considered only in as far as it affects generating and sustaining increased economic growth patterns. In the context of a 'risk society' where not only the engagement with knowledge of risks, but also an engagement of 'not yet' knowledge or unawareness is imperative in developing responses to environmental issues and risks, limitations could be found in competence-based systems of education (see 1.5.1). Furthermore, competence-based systems could limit epistemological challenges that address socio-ecological issues and seek to advance social justice.

At a policy level, the vision of the South African NQF embodies both the social project of equity and redress and economic imperatives of increased global competitiveness (see 4.2 & 4.3.1). The sponsors of the South African NQF are thus a mixed alliance of proponents of both performance and competence approaches to learning and assessment (see 4.3.1), at times in serious and unresolved conflict with each other (Harley & Parker, 1999:184; Muller, 1996:16). Muller (1996:19) however argues that, given the social project of equality and egalitarianism underlying the establishment of the NQF, 'mode mixing' becomes possible in this context. The resultant model of education and training emerging being a mixed or hybrid one (*ibid*:16). The question amongst many in the education community however, remains whether the NQF would

promote the democratic transformation of South African society or whether it would function to serve existing social systems (Skinner, 1999:117). Muller (1996:19) argues that the challenge does not lie as much in the tension between the social and economic goals inscribed in the NQF, but rather in the pedagogical practices supporting these differing and at times conflicting goals. Important questions to thus ask is what is the nature of the pedagogy inscribed in the NQF and how does it construct learners (*ibid*:12), hence the significance of this research question that focuses on course design and course processes.

4.3.3 The South African National Qualifications Framework: Potential dilemmas and issues

South Africa appears to be in an advantageous position in developing and implementing its NQF. The introduction of standards-based reform in SA came at a time when most other countries had already gone some way in establishing NQFs and through implementation developed significant insights into strengths and weaknesses of this approach. Role players involved in the transformation of education and training policy and practice in South Africa were fortunate in the sense that they were able to draw on these insights in formulating the NQF. Insights were primarily drawn from the Australian, New Zealand, and UK experience (National Training Board, 1997b:49) and attempts were made to maintain the strengths and address the weaknesses of these experiences.

The South African NQF appears to go some way in responding to some of the critique outlined in 4.3.2. The distinctive feature of reflexive competence as an integral part of applied competence seeks to address some of the concerns regarding the relationship between performance and the underpinning knowledge and understanding (see 1.5.4 & 2.4). Reflexive competence is, however, more than just the mere sum of the demonstrated ability to perform a set of tasks (practical competence) and the understanding of what we are doing (foundational competence) (National Training Board, 1997b:106). The National Training Board (*ibid*) describes it as ‘... a competence in its own right’ that draws on and integrates practical and foundational competence. Through reflexive competence, performance is integrated with knowledge and understanding, rather than being prioritised in relation to, and thus marginalising the latter. A second significant feature of reflexive competence related to the need for developing capacity to change is the foregrounding of the ability to ‘... learn from our actions’ so that we are able to adapt to change and unforeseen circumstances (see 4.3.2). Challenges, however, remain as to the interpretation and use of national standards integrating practical, foundational and reflexive competence that has particular implications for the interpretation, design and use of curriculum. Despite an attempt at broader conceptions of competence in the NQF, the danger of narrow and instrumentalist approaches to learning being fostered remains (Kraak, 1999:51; see also 4.6).

In the context of standard setting for teacher education, an attempt appears to have been made to open up possibilities for learning rather than constraining them to the outcomes defined. For example, one of the practical competences defined is ‘... using the language of instruction appropriately to explain, describe and discuss key concepts in the particular learning area’ (Department of Education, 2000:15). Another example is ‘... understanding different explanations of how learners learn at different ages and potential causes of success or failure in these learning processes’ (*ibid*). These examples of competence appear to encourage learning that is contextually relevant, but remain sufficiently open to encourage learning beyond specified limits. These examples are however, not evident in all sectors in education and training. Muller (1996:16) notes that teacher education has attempted to marry performance and competence approaches to learning whereas other sectors have merely moved from a performance model to a market-orientated model, reflecting more of the same (see 4.3.1). Pedagogic approaches thus remain a significant consideration in actualising the transformation agenda underlying the NQF.

The issue of skewed interests in processes of standard setting is addressed through the mandatory representivity in standard setting structures (see 4.3.2). Through regulation guiding the composition of standard setting structures an attempt has been made to include representatives of all stakeholder groups in processes of standard setting (SAQA, 1998:17; (see also 2.7). These representatives include those from state departments, organised business, organised labour, providers of education and training, critical interest groups and community / learner organisations (SAQA, 1998:17). Representivity is further encouraged in these standard-setting structures through regional representation and a fair cross section of representatives (National Standards Body 01, 2000:4). Harley and Parker (1999:197) however, express the concern that this form of ‘co-operative governance’ could become conflictual with ‘... represented groups asserting their interests rather than working on the basis of mutual interdependence’. De Clerq (1997:142) shares the same concern that this model is likely to further entrench rather than confront unequal relations between and amongst different stakeholder groups.

To promote and encourage an equalising of the dual agenda underlying educational change, SAQA has defined a set of critical cross-field outcomes to be integrated into all standards and qualifications (see 4.6.3). Skinner (1999:120) however, warns that these critical outcomes are open to being applied in contributing positively to social change or they could be applied purely for commercial advantage, depending on ones’ perspective. Economically driven perspectives could result in learning processes based on the acquisition of technical skills and in this way do little to address, if not contribute to the perpetuation of social difference.

Though many significant lessons have been learnt from experiences in other countries and are built into the South African NQF some challenges still confront role players in processes of the development and use of national standards. A recent review of the South African NQF (Department of Education & Department of Labour, 2002) highlights some of the difficulties, issues and potential dilemmas associated with processes of implementing the South African NQF. Of particular concern to roleplayers involved in giving effect to the NQF is the complexity of the system and standard setting structures, the over bureaucratized processes of standard setting and the lack of clarity on roles and responsibilities for standard setting (Department of Education & Department of Labour, 2002:23). These are often seen as reasons for the slow implementation of the NQF (*ibid*:22). The process of review however, attempts to highlight the limitations in the development and implementation of the NQF for the purpose of addressing these limitations and supporting a move toward realising the goals underlying the NQF.

Drawing on Popkewitz (1998) Harley and Parker (1999:181) describe the South African NQF as an 'indigenous foreigner', an approach to education and training that has both been imported and indigenised within the South African context. Though imported, the NQF is intended to respond to the specifics of South African society (see 4.3.1 & 4.3.2). The Department of Education and the Department of Labour (2002:65) however, note that the NQF, though a significant vehicle for change in the South African context, is not the only vehicle for change and thus not an end in itself. Successful transformation in education and training is reliant on not only reforming the qualifications structure of the country, but supporting this with institutional reform, improved resources and capacity building (*ibid*:66). Important considerations in processes of standard setting and the use of standards in assessment processes are: (1) the purpose of the standards; (2) the context, both the broader socio-economic context of South Africa, as well as the local context of work; and (3) how these standards will be used. These considerations become particularly significant in the South African context and in light of the kind of transformation intended through change in education policy and practice. This study argues that course design and course processes (curriculum) is a significant dimension of the transformation process and has additional significance in enabling citizens to address complex socio-ecological issues and risks which are integrally bound up with social justice and development opportunities and the future of the countries citizens.

4.4 SHIFTS TOWARDS THE NOTION OF LIFELONG LEARNING

As noted in section 2.3, the past three decades have seen significant shifts in the discourse, policy and practice surrounding the notion of adult learning (Edwards, 1997:77; Raggart, *et al*, 1996:1; Stock, 1996:10). Traditionally the needs of adult learners were addressed within the bounded field of 'adult education' confined to formal institutions, having specific goals and

outcomes and targeting a specific age group of learners (Edwards, 1997:68). More recently, as education processes become more diverse in terms of its learners, goals, processes, organisational structures, curricula and pedagogy, adult learning is being explored in the context of lifelong learning (Usher *et al*, 1997:23; Edwards, 1997:76). The notion of lifelong learning seeks to encompass learning in all sites and for all learners, irrespective of where it takes place and what the intended outcomes of the learning process are (Edwards, 1997:76). Adult learning is thus embraced within the concept of lifelong learning heralding a shift in boundaries which seek to constrain learning opportunities available to adults (*ibid*:68).

4.4.1 The significance of change in the discourse of adult learning

Edwards (1997:22) notes that the increased importance placed on lifelong learning in current educational discourse, policy and practice is inextricably linked to the increased significance of and recognition given to change in recent years. Edwards (*ibid*:24) highlights various aspects of change which signifies the challenge and complexity of technological, economic, cultural and demographic forces of change confronting individuals in contemporary (globalising) society (Raggart *et al*, 1996:1). Firstly, change is highly complex and often has significantly unpredictable consequences (Edwards, 1997:24; see 1.5.1 & 2.6). What is often seen as purely economic and technological change might have far reaching consequences (Beck, 1992:22). For example, increased environmental degradation and risks is brought on by newer and more complex technologies, migratory population patterns resulting from increased labour mobility as political structures and economies are internationalised through processes of globalisation (*ibid*; Edwards, 1997:24; Jansen & van der Veen, 1996:123). This highlights the difficulty of determining which issues are central and which are peripheral (Edwards, 1997:26). This necessitates learning processes that support individuals to understand the complexity of and act on / within these processes of change. Secondly, the increased rate of change in the contemporary world ‘... has an unpredictable quality to it which often leaves people confused and insecure as to their identities and future’ (*ibid*:25). Initial schooling is being called into question in preparing individuals to keep pace with this increasing rate of change. Thirdly, change is highly contestable and its ‘... significance open to debate, multiple interpretations and reinterpretation’ (*ibid*). This requires learning processes that not only encourages individuals to adapt to change but to actively engage with and challenge these contested processes of change. This nature of change highlights the need for individuals to become lifelong learners and learn on an ongoing basis, learn from their learning and develop the capacity to understand, participate in and challenge processes of change across a range of different settings and practices (*ibid*). Jansen and van der Veen (1996:123) argue that these processes of change ‘... confront society with new themes’ and practices of adult learning cannot afford to ignore these themes if it is to make a contribution to addressing socio-ecological issues and

risks. In this sense, and in the context of environmental education processes with the agenda for change being a central concern, Janse van Rensburg (1994:14) argues for a reflexive orientation to environmental education processes that ‘... develop the capacity for change’.

4.4.2 Shifting boundaries in adult learning

In recent years the field of adult learning has seen a shift in discourse focusing on the provision of education and training programmes for adults to more of a focus on the learner and appropriate learning programmes (Edwards, 1997:67). Earlier discourses in adult learning include concepts such as permanent education, lifelong education and recurrent education (Raggart, *et al*, 1996:1), thus emphasising provision. Within these discourses the role of the state is emphasised in creating institutions and providing resources for the provision of adult education programmes (*ibid*; Edwards, 1997:70). More recently ‘... the vocabulary is different’, and adult learning has become consonant with concepts such as lifelong learning, learning organisations and a learning society (*ibid*) highlighting a focus on learning rather than on provision. In exploring the shifts and trends in adult learning, Edwards (*ibid*:68) uses the metaphor of ‘moorland’ to signify the expansion of settings in which adults are said to learn and also to highlight the ‘... breaking down and moving of established institutional, policy and conceptual boundaries’ which dominate traditional discourses, policy and practices of adult learning.

Discourse, policy and practices of adult learning have been characterised in recent years by a breaking down, shifting and setting up of more permeable boundaries (Edwards, 1997:68). Boundaries become significant in exploring the field of adult learning in that ‘... they provide the grounds for delineating what constitutes the legitimate object of study and the locus of practice’ (Edwards *et al*, 1996:1). In this way boundaries come to play a powerful role in not only determining what is identified as an educational issue, but also how policies and practices are shaped to address it (*ibid*; Nesbit, 1999:270). Edwards *et al* (1996:1) notes that questions like who sets the boundaries in adult learning and what are the boundaries to adult learning have significant effects on either constraining or opening up learning opportunities available to adults. Boundaries around the ‘field of adult education’ have traditionally been drawn by (1) defining specific purposes for adult learning and (2) defining specific learning processes by which adults are said to learn (Edwards, 1997:71; Nesbit, 1999:271).

Defining specific purposes for adult learning has led to the defining of certain rules of inclusion and exclusion and seeks to cast adult learning in the mould of ‘... another vehicle of hegemonic social reproduction’ (Nesbit, 1999:271). Traditionally adult learning was dominated by what Edwards (1997:70) calls the ‘great tradition of liberal adult education’ (see 2.2). Adult learning

has been championed to support individuals who had previously not benefited from initial education and as such targeted disadvantaged groups in society (Edwards, 1997:71; Jansen & van der Veen, 1996:129). Jansen and van der Veen (*ibid*) note that this has resulted in adult education ‘... drifting away in the direction of social work or political advocacy’. Common approaches to adult learning were based on processes of problem solving around real issues that confronted individuals (*ibid*). Problems associated with these approaches to adult learning tend to marginalise individuals who do not form a part of the disadvantaged group and who might have otherwise contributed significantly to processes of problem solving (*ibid*). In this context, programmes for adult learning are often offered by or linked to institutions of higher education, as extra mural programmes. Edwards (1997:75) however, notes that settings in which adults learn and from which social change can be engendered extend beyond the formal institutionalised provision of adult education. As noted above, more recent policy frameworks governing the terrain have shifted in emphasis to economic rather than social policy with adult learning programmes being extended from that of formal institutions to the workplace as learning site (see 2.2 & 4.2). These specific purposes of adult learning seek to construct boundaries around adult learning in two ways. Firstly, large parts of adult learning activities are marginalised, for example, those activities not concerned with emancipation or the updating of work-related competence (Edwards, 1997:71). Secondly, institutional boundaries are constructed around providers offering adult learning processes within these defined purposes (*ibid*:70).

Boundaries to adult learning have further being constructed through the conception of ‘andragogy’ which Knowles (1996:83) describes as ‘... a new technology for the education of adults’. Andragogy differentiates adult learning from that of children and adolescents and emphasises the distinctive attributes of adult learners (Edwards, 1997:72; see also 2.2). It is thus constructed around processes of helping adults to learn and focuses on self-directed, experiential and problem solving learning (Knowles, 1996:83; Edwards, 1997:72). The notion of andragogy has however, been subject to much debate and controversy and Edwards (*ibid*:73) sees it as an attempt to ‘... put or keep a boundary around particular forms of provision’. Hanson (1996:99) notes that the dichotomy between andragogy and pedagogy (the teaching of children) is no longer useful as the hard and fast distinction between adult learners and learning amongst younger children increasingly come under scrutiny and open to question (Edwards, 1997:74). What is perhaps more useful in the practice of adult learning is a focus on the purposes and outcomes of the learning experience resulting in and from specific socio-ecological contexts and associated practices of teaching and learning (*ibid*). In this light, Hanson (1996:99) argues for replacing generalisations about the characteristics of adult learners with more of a focus on specific contexts of learning ‘... what they are learning, the

setting in which they learn and the relationship with those peers and tutors with whom they learn’.

Discourses in lifelong learning attempt to encompass diversity and difference, overcoming dichotomies such as education and training, vocational and non-vocational learning and higher and further education (Edwards, 1997:77). Edwards (*ibid*) sees this as helping the process of melting boundaries and of boundaries becoming more permeable, and in so doing break down physical and cultural barriers and inequality. In challenging the boundaries to adult learning, Edwards (*ibid*:69) expands on the metaphor of moorland. He (*ibid*) describes these as being ‘... open spaces ungovernable by the imperatives of technical instrumental rationality’ providing for ‘... open-ended exploration of ... [and] searching for new routes to travel through a complex and uncertain ecology and archeology’. This signifies the breaking down of boundaries and the importance of recognising diversity and difference amongst adult learners, the varied settings in which they learn and the varied ways in which they learn (Hanson, 1996:100; see also 2.8). These suggestions regarding adult learning implies opening up learning processes to include a focus on not only knowledge, but similarly unawareness (see 1.5.1). It similarly suggests a focus on socio-historical context within which knowledge, power and action is constructed as a means to exploring different ways of knowing and coming to know (see 1.5.5). The open entry, open exit and participatory nature of the RU/GF course and its strong focus on learning and action in context represent an example of such an initiative, thus providing an appropriate case study for a consideration of reflexive competence (see 1.4. & chapter 5).

4.4.3 Towards a learning society

The notion of a learning society developed together with discourses around lifelong learning (Edwards, 1997:175). Edwards (*ibid*) notes that this notion has been at times problematically constructed as ‘the learning society’ suggesting a universal model of what such a society should look like. As opposed to ‘the learning society’, I use Edward’s (*ibid*) term ‘a learning society’ to reflect ‘... a variety of forms of social formations with diversity in them’.

As in the case of lifelong learning, various meanings are invested in the notion of a learning society (Edwards, 1997:175; Usher *et al*, 1997:30). Recently much emphasis is being placed on a learning society constructed within an economic policy framework, which Edwards (1997:178) calls ‘... a learning market’. This conception emphasises the development of capacities to support economic competitiveness and has been dominant within many countries since 1970 (*ibid*:184). The notion of a learning society is also constructed from within a social policy framework with the aim of supporting adult learners to meet the challenges of change and citizenship (*ibid*). Further conceptions of a learning society emphasises individualism, stressing

participation in learning activities to pursue individual goals (*ibid*), which Jansen and van der Veen (1996:128) argue serves to create ‘...new forms of social inequality’. The emphasis on economic competitiveness and individualism is being contested for contributing to the fragmentation of society as learning processes respond to economic and individual needs rather than social and political imperatives (Edwards, 1997:185). Edwards (*ibid*:175) offers a view of a learning society as one that signifies ‘... a reflexivity to processes of change which is characteristic of contemporary times’. In this view education plays the role of providing adults with opportunities to become active citizens in social formations (*ibid*:176). This view of learning resonates with Beck’s (1999:119) notion of reflexive learning that supports an active and critical engagement within processes of change (see 1.5.1). This perspective on the role of adult learning in a learning society can further be likened to Usher *et al*’s (1997:28) notion of education for citizenship. Education for citizenship is concerned ‘... with knowledge, skills, attitudes and values necessary for citizens to participate meaningfully in society ... in the context of an increasingly complex and rapidly changing world’ (*ibid*).

Usher *et al* (*ibid*:42) suggests some themes around which adult learning can be explored, which encourages a critical understanding and exploration of issues of change and active participation in shaping processes of change for a more equal and just society. These themes, rather than favouring increased economic competitiveness above issues of social justice, suggests drawing on the dominance of economic imperatives in contemporary society to encourage active participation in processes of socio-economic change. This approach to adult learning can be likened to Muller’s (1996:17) notion of mode mixing through which the focus of social and economic imperatives is shared in processes of learning (see 4.3.1 & 4.3.2). These themes are:

➤ **Experiential learning**

Learning from experience has a long history in the tradition of adult learning (Jansen & van der Veen, 1996:130; Usher *et al*, 1997:42). Traditionally, in more radical approaches to adult learning, experiential learning was put forward as an alternative to the dominance of ‘... codified academic knowledge delivered from above’ and came to place undue emphasis on the undifferentiated experience of working class adults (Jansen & van der Veen, 1996:130; Usher *et al*, 1997:42). More recently this over-emphasis of individual experience in learning processes is being recognised as running the risk of becoming an ‘... unproblematic vehicle for self-affirmation and self-consciousness’ (Jansen & van der Veen, 1996:130; Usher *et al*, 1997:42). Jansen and van der Veen (1996:130) note that a danger in these approaches to experiential learning is that learners become stuck in what they already know, without being enriched with new knowledge coming from outside of their experience. In this sense, Gergen (2001:122) writes that ‘... if each of us is simply locked into our own experience’ our understandings and

ultimate actions ‘... are simply the products of our own design’. In current trends in adult learning the notion of experiential learning is being reconceptualised by locating individual experience in a broader social context (Jansen & van der Veen, 1996:130). Through this critical approach to experiential learning, learners are encouraged to understand how their experiences and perspectives are shaped by social and historical conditions and opens up possibilities for exploring alternative social relations, actions and interactions (*ibid*; Popkewitz, 1999:22). Authentic experience is then not merely accepted at face value, but is opened to critique and thus is neither privileged nor uncritically validated (Jansen & van der Veen, 1996:130). Adult educators are increasingly seeing the value of combining theoretical learning and experiential learning which is able to ‘... supplement and critically correct the daily experience of people’ (Janse & van der Veen, 1996:131).

➤ Literacy

Usher *et al* (1997:46) note that traditional approaches to literacy in adult learning have often been argued from the perspective of either ‘education for domestication ... [or] ... education for liberation’. The two positions adopted in opposition to each other masks the need for access to culturally valued knowledge and the need to view such knowledge critically (*ibid*). This links to Popkewitz’s (1999:18) social epistemology that suggests a critical exploration of systems of knowledge (reason) and the power relations embedded in these to understand how individuals and their actions and interactions are shaped within social context. What Popkewitz (2001:12) calls a narrative of history provides a focus on how people and individuals ‘... “use” concepts and ideas to effect purpose and intent in social action’. Usher *et al* (1997:46) suggests an approach to literacy drawing on both disciplinary knowledge and experiential knowledge to encourage a critical engagement with issues of personal experience in a broader social context (see above).

➤ Empowerment

Like experiential learning, notions of empowerment also have a long tradition in adult learning processes. Usher *et al* (1997:47) however, note that recent individualistic and personal notions of empowerment are being put forward from an economic perspective that contrast strongly with the traditional idealistic notion of social empowerment. In the contemporary world of change, where individuals are confronted with economic, social and cultural forces of change, the polarisation of notions of empowerment no longer serves much purpose. Usher *et al* (*ibid*) suggest a combined approach to empowerment through which the economic can be linked to the social and cultural, thus reflecting ‘... situated meaning in direct relation to the living and working context of adult learners’. In the critical social sciences the notion of empowerment is

further being problematised in terms of its social engineering potential of subverting others to expert technical processes of social change (Lather, 1986b:263). In this sense, Babikwa (2002:59) recognises the limitations of failing to contextualise processes of empowerment through participation, in that approaches are often shaped by ideologies and contexts of 'lead' agencies and imposed on communities. Gergen (2001:134) warns that processes of empowerment could become an imposition of alternative views on students and teachers. In this sense, Popkewitz (1999:27) argues that empowerment runs the risk of defining a particular power relationship between '... the professional and the people' where expert knowledge is placed in the service of emancipation. Gergen (2001:134) suggests learning practices that encourages constructive interchange between disparate groups that encourages the development of new and more inclusive processes of meaning making and action.

The shifting trends in adult learning, and the increased significance of lifelong learning and a learning society in the contemporary world, points to an opening up of opportunities and possibilities for adult learning in varied learning sites. Central to the shifting notions of adult learning is the recognition of diversity and difference amongst learners, their learning needs, learning and life contexts and learning methodologies.

Much has been written about 'a learning society', though little has been offered in the way of practical formulations of learning processes to support this notion (Edwards, 1997:175). Usher *et al* (1997:49) suggests '... curricula indicators, issues for resolution and areas for leverage' since it is not possible to be too specific given the uncertainty of change and the situatedness of practice. This suggestion of open-ended curricula links to Beck's (1999:124) suggestion of non-linear theories of knowledge in reflexive processes that '... brings about a compulsion to open oneself to "outside knowledge", the outsider perspective'. Usher *et al* (1997:49) suggest a curriculum focus that is available to all in a variety of settings, in various ways and at various levels. In this sense, lifelong learning processes should take place in multiple sites, acknowledging different identities, celebrating cultural diversity and making room for all voices. They (*ibid*:50) similarly argue for open-ended learning processes that do not serve as a tool for social engineering, nor tacitly accepts the *status quo*, but engages with and challenges development notions and possibilities in contemporary society. Previously I have argued that environmental education processes are an important dimension of development options and issues in South Africa, as articulated in the WSSD debates (see 2.5). What then do lifelong learning processes practically look like, in encouraging reflexive approaches to change in the contemporary world?

4.5 TOWARDS CURRICULUM INDICATORS, ISSUES FOR RESOLUTION AND AREAS OF LEVERAGE IN ADULT ENVIRONMENTAL EDUCATION PROCESSES

In considering the wide spectrum of environmental issues and risks and contexts from within which individuals are attempting to respond to these, diversity and difference is evident in environmental education processes (Lotz, 1999a:48). An example of the diversity of issues and risks and contexts can be seen amongst the six case study participants in this research study (see 3.5.3.3). For example, Daniel was attempting to respond to the consequences and risks associated with open cast mining and its impacts on the surrounding community (DF10, C4). This he was attempting to do through restructuring environmental education and training processes in an environmental management system, in the industry context (*ibid*). Songezo was attempting to respond to issues of poor waste management through a community environmental education programme that he planned to undertake in collaboration with local government (DF10, C5). Anastelle was attempting to respond to the complex issue of desertification (and associated longer term risks) as it impacts on the lives of local communities, through a community-based environmental education programme supported by a para-statal organisation (DF10, C6). Cathy and Vasintha were attempting to encourage environmental education processes in the formal school context, through curricula programmes and Anton attempted to respond to a diverse range of environmental issues confronting various communities, through supporting teachers in initiating environmental education programmes at their schools (DF10, C3, C2 & C1).

The RU/GF course has approximately sixty-five individuals who participate as students in the course annually and in the southern African region the demand for environmental learning is increasing steadily (see appendix 1). Evidence of this increasing demand for environmental education professional development processes and programmes can be seen in the growth and expansion of the course over the years and the number of applicants applying to participate in the 'general' course annually (see 1.3.1 & appendix 1). Diversity and difference is evident in educational, academic and professional backgrounds of participants, as well as '... cultures, races, ... and personalities' (Janse van Rensburg & Le Roux, 1998:13). Increasingly the need for improved environmental education professional development programmes, in a range of formal and non-formal settings is being recognised to better support individuals and communities to respond to the diversity of environmental issues and risks in diverse contexts (*ibid*).

Strongly influenced by a socially critical approach to environmental education Robottom (1987b:292) argues for a move in approach to professional development from an 'information technology' paradigm to one of 'information critique' (see 2.6). In the latter, conditions are created for learners to critically reflect on their work and explore the underlying values in their

work as opposed to the former that focuses on the dissemination of information. Within this alternative paradigm of professional development, Robottom (1987b:296) proposes five guiding principles in processes of professional development in environmental education. These include environmental education processes that are:

- ◆ **enquiry-based**, through which participants adopt a research stance towards their practice and see their current practice as problematic and having the potential for improvement;
- ◆ **participatory and practice-based**, through which learners draw on and critically reflect on their own practice through adopting a praxiological approach to their practice and through participatory learning processes attempt to change their practice (see 1.3.2);
- ◆ **critical**, through which learners become aware of and question the values and assumptions that inform environmental and educational policies and practices;
- ◆ **community-based**, in recognising the specifics of the environmental and educational contexts; and
- ◆ **collaborative**, in working with others to explore more effective educational responses to environmental issues and risks.

As diversity and difference comes to be a key theme underlying adult learning processes Lotz (1999a:13) suggests the following key curriculum features that encourage learning in diverse and different contexts and in response to diverse and different socio-ecological issues and risks (see 4.4.3). These include processes that are:

- ◆ **responsive** to the learners' professional development needs by considering the particular learning context and the socio-ecological context within which the learner finds him / herself;
- ◆ **flexible** in course structure that enables an adapting and enriching of curriculum processes through deliberation amongst learners;
- ◆ **participatory** learning processes that encourages learners to draw on their own experiences in deliberating learning opportunities and experiences and enhance learning through a process of sharing these experiences;
- ◆ **praxis-based** that encourage an informed reflexive review of practice; and

- ♦ recognises **assessment as** a significant process of **learning** encouraging learners to continually seek better ways of doing their work.

A key issue confronting course developers in environmental education is designing courses that encourage reflexivity within processes of change in the contemporary world (see 4.4.3). Key questions emerging from this approach to environmental education are the ways in which course processes support individuals to respond to complex and interrelated environmental issues and risks in context and enable reflexivity, which involves an exploration and acting on what is, and what remains unknown (see 1.5.1 & 2.5). In framing adult learning in the context of a 'risk society', Jansen and van der Veen (1996:134) offer a view of what adult learning in / for the future will look like (see 2.6). They (*ibid*) see adult learning as an instrument of broader cultural policy '... deal[ing] with survival problems (environment, techno-scientifics) and existential problems (personal growth, giving meaning to life) as well as (new forms of) social inequality'. This reflects an adult learning that serves as a medium, not for the propaganda of certain ideals and interests, but a place for critical discussion of issues of social developments and their impact for personal and social life (*ibid*). The following section offers some suggestion on methodological approaches, enabling reflexivity to support learners to respond more effectively to issues and risks that confront them in their daily lives. I offer these as potential 'curriculum indicators' which leave course processes open to change for adult learners in ways that reflexively respond to changing and diverse contexts of learning (see 3.4.3).

4.5.1 Open ended processes of curriculum deliberation

Doll (1993:155) writes that '... curriculum is a process – not of transmitting what is (absolutely) known, but of exploring what is unknown'. This view of curriculum links to Beck's (1999:123) suggestion of open-ended reflexive learning processes that enable an exploration of both knowledge and unawareness (see 1.5.1). Cornbleth (1990:24) sees curriculum construction as '... an ongoing social activity' shaped by various contextual factors within and beyond the learning site and accomplished through interaction amongst learners and educators. This view of curriculum resonates strongly with Popkewitz's (1999:22) call for considering the socio-historical spaces within which thought and action is shaped to gain insight into how possibilities for action are shaped, interned or enclosed. Doll (1993:155) further notes the transformative nature of this view of curriculum in that, through exploration, learners and educators are able to '... clear the land together' and in this way are enabled to transform both the land and themselves. In this sense Lotz and Janse van Rensburg (1998:9) argue for curriculum development processes that are '... ongoing [and] reflexive processes of adaptation and change in context and *in the supportive company of others*' (my emphasis). In acknowledging the varied contexts within which environmental education practitioners attempt to respond to issues

and risks, course developers need to seek new ways of working with adult learners in localised contexts to develop courses that support reflexive environmental education processes. Curriculum development processes then become open ended processes of *deliberation* around various curriculum options and appropriate actions to support these curriculum choices (Lotz, 1999a:7; appendix 1:15). With this view of curriculum development, traditionally dominant conceptions of knowledge, curricula and pedagogy become open to challenge (Lotz & Janse van Rensburg, 1998:13) and the power of the educator, to determine what constitutes worthwhile knowledge and serious learning is questioned (Usher *et al*, 1997:24). This view of curriculum recognises that educational goals, forms and practices are shaped by diverse cultural and socio-ecological contexts, and provides the opportunity for learners to become involved in defining what constitutes a learning opportunity and shaping these through negotiation and deliberation with the educator.

4.5.2 Responsiveness to socio-ecological context

Adopting a perspective of an open-ended curriculum and deliberation amongst learners and educators, possibilities are opened up for curriculum processes to respond to the specific socio-cultural contexts of adult learners (Lotz, 1999a). Cornbleth (1990:28) writes that ‘... context both situates and shapes curriculum’ and there is no generic set of factors, fixed set of parameters or invariant grid that defines the curriculum context. Social, professional and learning contexts are shaped by various socio-political, socio-economic and socio-ecological factors. Curriculum deliberation amongst learners and educators allows for curriculum processes that ‘... sticks closer to the daily hopes and worries of the learners’ (Jansen & van der Veen, 1996:134). It allows learners the opportunity to deliberate on issues relevant to their learning and working contexts and opens up dialogue around both common and conflicting experiences, interests and ideological images (Lotz, 1999a:10; Jansen & van der Veen, 1996:134). It further allows learners the opportunity to share, discuss and critique ideas and processes through ongoing dialogue, encounter and reflection, allowing for ‘... looking in on their contexts of action and change’ (Lotz, 1999a:10).

4.5.3 Open ended course structures and flexibility

Within this context of open-ended curriculum deliberation, what remains of significance is the development of coherent and useful frameworks for learning (Lotz, 1999a:19). Developing a learning framework can be approached differently in different contexts, and some recent and common approaches have been the development of outcomes, based on competences (see 4.3.1). Other approaches to developing learning frameworks may be derived from learners’ professional development needs, learners’ expectations of a learning opportunity or through

research, identifying particular needs within a specific context. What remains of crucial importance in the context of diversity and difference in environmental education (see 4.4.3 & above), is the need to retain an open and flexible approach to learning frameworks. In this sense, Gergen (2001:129) argues for learning processes that are free from the demands of specific disciplines that allow learners ‘... to roam across whatever domains are necessary in terms of their goals’. This has particular implications for content and structure of learning programmes and who is involved in defining this content and structure (Lotz, 1999a:18). The traditional view of knowledge as universal, generalisable and applicable to all issues in all contexts is increasingly being critiqued for its oppressive consequences (Edwards, 1997:4). In encouraging reflexive learning processes and the need to open up opportunities for exploring different kinds of knowledge, unknown, unawareness or ‘not yet’ knowledge (see 1.5.4), course developers need to recognise the partial and incomplete nature of knowledge (Lotz, 1999a:18). Edwards (1997:5) writes that knowledge is contingent on specific factors and contexts within which it is constructed and presented. This signifies the need for open-ended and flexible learning frameworks through which knowledge can be enriched and changed through deliberation amongst learners (Lotz, 1999a:18).

4.5.4 Reconfiguring experiential learning and the role of theory

Usher *et al* (1997:135) conceives of practice as action informed by theory, thus recognising the inseparable nature of theory and practice (see 1.5.3). Robottom (1987b:295) similarly notes that all practices have theory embedded in them. Usher *et al* (1997:135) distinguishes between informal theory and formal theory, identifying different roles for each in giving meaning to practice. Informal theory (see 1.5.3) is considered to be practical knowledge, derived from personal experience and thus part of the experiential world of practitioners (Usher *et al*, 1997:135). As such informal theory is not abstracted nor decontextualised, and is ‘... situated theory both entering into and emerging from practice’ (*ibid*). Learning processes focusing on practice based, informal theory cannot however be reflexive (Elliot, 1991, cited in Usher *et al*, 1997:136), since it is private and unique to the individual practitioner (see 4.4.3). A further problematic of informal theory is that because it is rooted in practice, it is limited in scope and depth (Usher *et al*, 1997:136). This is where Usher *et al* (*ibid*:137) sees the crucial role of formal theory in encouraging reflexivity, through which it becomes a useful tool for critically reviewing practice and opening up possibilities for change (see 5.3.3). In this sense, formal theory is seen as a ‘... sounding board, a resource for critiquing informal theory and exposing its limitations’ (Usher *et al*, 1997:138). As reflexive learning processes are concerned with an exploration of ‘new’ or ‘different’ knowledge, so the exploration of formal theoretical ideas exposes the learner to different perspectives and understandings (see 1.5.1). These different

perspectives and understandings could come to provide learners with insight into the limitations of their practice and insight into alternative approaches, and so creates possibilities for change.

4.5.5 Encouraging the development of a professional community

Professional development could easily be engaged with as an individual activity (Lotz, 1999a:59) focusing on issues confronting individuals at a personal level and at the expense of exploring and addressing broader socio-ecological issues. Jansen and van der Veen (1996:129) argue that it is precisely this individualisation of society, together with modernisation, to which the origins of socio-ecological issues can be traced. Learning processes fostering an individualistic approach to professional development could then in itself become part of the problem creating the issues and risks confronting modern society. Gergen (2001:118) highlights two limitations to learning processes that foster ‘... self-contained individualism’. Firstly, disparate positions are created in that people are cast into secondary and instrumental roles since people and environments are seen primarily in terms of the potential it holds for the self (*ibid*). Secondly the ‘... ‘me first’ disposition’ becomes a threat to human well being in the context of globalisation as international communities become increasingly interdependent (*ibid*). Jansen and van der Veen (*ibid*:130) note that many different groups of actors are involved in the production of issues and risks in modern society, and can similarly be involved in processes to address these. In this sense Robottom (1987b:297) writes that collective action is usually more productive in dealing with issues and risks that are mostly of a political nature. This implies the need for stimulating the development of professional networks, bringing together various actors involved in specific issues (*ibid*).

The notion of a professional network / community further encourages reflexive learning in that very often we require outside perspectives to be able to turn inwards and critically review our own perspectives and practices (Robottom, 1987b:297). In this sense, Gergen (2001:119) sees knowledge as being constructed not in the mind of the individual but through interaction within communal relationships (see 5.3.3). This brings into focus the need to enable processes of ongoing deliberation amongst people in learning contexts where meaning is located within ‘... patterns of interdependency’ and in socio-historical context (Gergen, 2001:119; Popkewitz, 1999:23).

The above curriculum indicators suggests an opening up of opportunities for beginning to explore unawareness that Beck (1999:124) argues is the key to reflexive social process of change (see also 4.4.3). Open-ended processes of curriculum *deliberation* allows for learners to become involved in contributing to the learning agenda so that it responds to their professional development needs *in* context (see 4.5.1 & 4.5.2). Open and flexible learning

structures serve to provide some guide to learning opportunities, but needs to remain sufficiently open to allow for the exploration of alternative perspectives which might exist outside of current knowledge frameworks (4.5.3). Theory comes to play a significant role in allowing the opportunity to critically review practice and so opens up possibilities for change (see 4.5.4). Collaborative exploration of and responses to environmental issues and risks challenge individualistic processes of professional development and opens up opportunities for more effective responses (see 4.5.5). Through ‘... experiential co-operative meaning making amongst adult learners in the context of real-life situations in local environments’, opportunities are opened up to reflect on what is known, what is not known, why and how we can respond to knowing and not knowing (Lotz, 1999a:54).

The curriculum indicators noted above become of particular significance in the context of the South African NQF, in attempting to challenge and avoid the dominance of performance pedagogical models that serve to direct learning towards a predefined end (see 4.3.1). A further challenge emerges in designing curriculum processes in terms of challenging the conventional roles, identities and interactions amongst teachers and learners within knowledge frameworks, reflecting performance pedagogic models inherited from apartheid policies and practices (see 2.4.1, 4.3.1 & 7.2.3).

4.6 A REINTERPRETATION OF REFLEXIVITY IN THE SOUTH AFRICAN NQF COMPETENCE FRAMEWORK

Reflexivity as defined in the South African competence framework is an attempt to support processes of lifelong learning to enable the development of capacity of individuals ‘... to contribute to and benefit from our society of today and tomorrow’ (National Training Board, 1997b:96). This intention becomes explicit in considering the specific South African context within which the notion of reflexive competence was introduced into the competence-based framework and as such intends, through educational processes to contribute to socio-economic transformation (see 2.4 & 4.3.2). The notion of reflexive competence however, remains fairly narrowly defined in emphasising an ‘adaptation to change’ rather than active and reflexive engagement within processes of change (see 1.5.4). Reflexive competence in the broader context of the South African competence framework and context of transformation remains open to interpretation. The challenge to course developers and educators who wish to support engagement within change processes and the resultant uncertainties appears to lie in the frameworks of interpreting reflexive competence.

In the South African competence framework I see three possible ways in which reflexive competence could be interpreted that has specific implications for engaging within reflexive

social processes of change in environmental education course design (curriculum development). These are:

4.6.1 Reflexive competence that enables an adaptation to change

This first potential framing of reflexive competence is drawn from its definition in policy documents introducing the South African NQF (see 2.4). Definitions of reflexive competence in policy documents appear to focus primarily on an adaptation to change or keeping pace with change as economic and social systems evolve (see 1.5.4 & 4.4.1). Interpreting reflexive competence as the development of capabilities to keep pace with change initiated by dominant forces in society (often economically driven) could result in a narrowing of learning opportunities as a means to a specified end. This framing of reflexive competence does little to encourage critical and active engagement within reflexive processes of change and processes of change are structured within dominant knowledge frameworks and embedded power relations. In this sense, Popkewitz (2000:3) notes that ‘... power is exercised less through brute force and more through the way in which knowledge (the rules of reason)’ construct social actions, interactions and practices of daily life. In the context of environmental education processes, this framework of interpretation may paradoxically maintain the *status quo* and, responses to socio-ecological issues may be reduced to the largely ineffective application of technical rational solutions developed within dominant knowledge frameworks and existing power relations (see 2.6).

4.6.2 Reflexive competence as social critique

Secondly, reflexive competence can be interpreted as developing the capability to critique existing social systems, structures and processes, as suggested in the examples of specific reflexive competences defined for teacher education (see 1.5.4). Though this approach to reflexive competence appears to be progressive in suggesting a challenge to the *status quo*, it seems to fall short of encouraging learning opportunities that challenge existing and dominant knowledge frameworks the power relations embedded in these. This framework of interpretation appears to offer opportunities for critical reflection rather than reflexivity and similarly binds possibilities for change within existing social formations (see 1.5.1). This approach to engaging within change processes Popkewitz and Brennan (1998:16) refer to as a ‘... philosophy of consciousness’ through which the origins of power, and the actors who control power are identified. In this sense, knowledge and power is viewed as ‘... “something” that people own’, and can be reallocated to address inequities through engagement within existing frameworks of knowledge and the reconstituting of associated power relations (*ibid*:17). Possibilities for alternative ways of being in the social world are then constrained within existing power relations embedded in society and serves simply to shift power bases from one group to

another. This then does little to challenge and change unequal social relations and interactions. Within this framework, and in the context of environmental education processes, responses to socio-ecological issues might become caught up and recycled within the very social systems, structures and processes that have created them and render responses to socio-ecological issues and risks largely ineffectual.

4.6.3 Reflexive competence to enable change

In the context of this research study, I offer a third potential framing of reflexive competence, distinguished from the former two framings. This reinterpretation of reflexive competence attempts to move participation in change processes beyond adaptations to dominant change narratives and processes of shifting power positions and relations. This alternative interpretation of reflexive competence is one that encourages the development of competence to disturb that which appears natural in social actions and interactions and so open up possibilities for different ways of being and relating within the social world.

Popkewitz and Brennan (1998:18), drawing on Foucault's notion of governmentality and the interrelationship between power and knowledge, recognise power as being embedded in '... governing systems of order, appropriation and exclusion' (see 4.3.2). Knowledge systems or systems of ideas emerging from within these systems, structures and processes then come to construct and form individual subjectivities and social life (Popkewitz & Brennan, 1998:18). In this sense, curriculum can be seen as '... part of a discursive field through which subjects are constructed' as self-regulated individuals within a community / society, processes through which individuals are disciplined through the rule of knowledge (Popkewitz and Brennan, 1998:13 & 18; see also 4.3.2).

This third framing of reflexive competence offered here draws on Popkewitz and Brennan's theory of a social epistemology that locates people and their social worlds as central axes for producing social change (Popkewitz and Brennan, 1998:24). Moving beyond a philosophy of consciousness (characterising individualising liberal humanist and emancipatory critical theories), they (*ibid*:28) argue for a shift in focus from power relations in social systems, structures and processes to critically considering '... the forms of reasoning and principles of ordering' in socio-historical contexts. In this sense, engagement with / within knowledge systems becomes an attempt to change the constructions of power (*ibid*:5; see above). A social epistemology provides opportunities for understanding and critically interrogating '... the social conditions in which contemporary social life is constructed' (*ibid*:11). Shifting focus to critically interrogating the way in which individuals and society become constructed (an historical, processual critical investigation) through the interplay between knowledge and power, serves

to destabilise '... reigning forms of reasoning and principles of ordering' and so create a broader scope of possibilities for action (*ibid*:28).

This epistemological framing of reflexive competence appears to be more consistent with the intention of socio-economic change underpinning the South African NQF and teaching and learning processes implied through the competence framework of the NQF. In the context of environmental education, this framing of reflexive competence similarly appears more congruent with the competence required to engage critically with socio-ecological issues, risks and responses in a 'world risk society' (Beck, 1992:23). Through considering the socio - historical context within which knowledge (known and unknown) of issues, risks and responses have been constructed opens the horizon for exploring new and different ways of constructing and responding to issues and risks beyond the systems of ideas that enclose and intern our understanding of, and responses to these issues and risks (Popkewitz *et al*, 2001:19). The exploration of, and opening up of oneself to what Beck (1999:126) calls '... outside knowledge, the outsider perspective' opens up epistemological possibilities to challenge, disrupt and change the systems, structures, social processes and relational dynamics within which the origin of many socio-ecological issues and risks lie.

Though possibilities for all these frameworks of interpretation exist in the South African NQF competence framework, the latter appears to best support the transformation agenda intended by the restructuring of education and training (see 4.3). Interpretations of reflexive competence, as reflected in the former two framings, are the result of seeing reflexive competence as a specific and unique aspect of developing national standards for education and training. As such, reflexive competence is not articulated within the broader and more complex epistemological challenges inherent in transforming education and training and society through the NQF competence framework. This study, in considering the epistemological challenges of a 'risk society' characterised by increased socio-ecological risks and development dilemmas, argues for a need to be vigilant of narrowing approaches to change in education and training and thus the limiting of learning opportunities and opportunities for contributing to social transformation. Apart from the broader context of political and socio-economic change and social transformation, support for the latter interpretation of reflexive competence is reflected at three different levels in the competence framework. In considering these three aspects within the broader context of the competence framework, the intention of reflexive competence to support processes of change and transformation is reflected (see 2.4 & 4.3).

➤ **The purpose of qualifications**

SAQA has defined specific purposes for qualifications in the context of South African society and the NQF (see 2.4). One of the features of a qualification, amongst others, as per this SAQA definition is that ‘... a qualification shall provide benefits to society and the economy by enhancing citizenship; increasing social and economic productivity; providing specifically skilled / professional people; transforming and redressing legacies of inequity’ (SAQA, 1997, cited in Department of Education, 1998:27). Against this backdrop, reflexive competence as part of a qualification implies the development of capabilities to actively participate in challenges to existing political and socio-economic figurations.

➤ **Principles of the NQF**

Secondly, at least five principles underlying the NQF point to the intention to challenge dominant social forms and open up possibilities for reflexive approaches to learning. ‘Access’, ‘equality of opportunity’ and ‘flexibility’ seeks to open up equal learning opportunities available to all individuals and encourage movement within fields of learning, which challenges traditional issues of dominance by an educated elite. ‘Relevance’ encourages the exploration of issues and risks that affect individuals and communities in their daily lives and challenges dominant knowledge forms and practices. Similarly, the ‘recognition of prior learning’ allows for the formal recognition of informally acquired and unaccredited knowledge and provides a challenge to privileging certain knowledge forms over others. Framing reflexive competence within these principles opens up opportunities for reflexive learning processes in the competence framework of the NQF (see 4.5).

➤ **Critical outcomes**

The third aspect of the intention for social change is seen in the critical outcomes that have been defined in the South African NQF to underpin and be integrated into all qualifications developed and registered. For example, ‘... identifying and solving problems in which responses display that responsible decisions using critical and creative thinking have been made’ implies support for active commitment to solving socio-ecological and other problems (Government Gazette, 1998:8). ‘Working effectively with others as a member of a team, group, organisation, community’ supports the notion of collaborative action taking around socio-ecological and other problems (*ibid*; see also 4.5.5). ‘Communicating effectively using visual, mathematical and / or language skills in modes of oral and / or written persuasion’ opens up possibilities for dialogue between learner and educator as well as amongst learners, encouraging meaning making and supporting reflexive learning through interaction and

deliberation (Government Gazette, 1998:8; see also 4.5.5). 'Using science and technology effectively and critically, showing responsibility for the environment and the health of others' challenges the uncritical and dominant role of scientific rationality in providing solutions to socio-ecological and other issues and risks (Government Gazette, 1998:8; see also 2.6 & 5.2).

If change in education is to respond to the transformation agenda in South Africa a reinterpretation of reflexive competence would seem important in the development of learning programmes in the NQF, and particularly for environmental education programmes that support a social transformation agenda (see 2.4). Reflexive competence needs to be reframed within the epistemological challenges associated with the transformation of South African society and in its relation to the competence framework to open up opportunities for reflexive environmental learning processes that enable active engagement with socio-ecological issues and risks.

4.7 SUMMARY AND CONCLUDING REMARKS

Reform in education policy and practice in many countries is largely being shaped by the economic imperatives of processes of globalisation (see 4.2). Education, through its policy and practices, then becomes an instrumental means to serving the ends of economic progress. This political economy has significant implications for learning processes and learners within these processes. Learning becomes confined within closed and linear knowledge frameworks that merely seek to maintain modern social forms and thus tend to sustain or increase consequent socio-ecological issues and risks emerging from within these.

Standards-based reform has become a common approach to educational change in the international arena largely being implemented within an economic policy framework (see 4.3). The main critiques to these approaches to standards-based reform is that with too much of an emphasis on meeting the needs of a growing economy, they potentially result in narrow learning opportunities and shift issues of social concern to the periphery. Within such a framework of learning, competence-based education systems seek to foster social differentiation and may perpetuate the issues of inequality characteristic of modern society. Change in education policy and practice in South Africa attempts to address some of these critiques by drawing on the experiences of other countries in developing a NQF (see 4.3.3). The South African NQF, in attempting to respond to both economic and social imperatives in this period of significant transformation introduces the notion of reflexive competence into the framework for education and training. This in itself does not however, ensure a challenge to dominant technicist forms of learning and as such does not necessarily ensure the kind of transformation for which it is intended. The notion of reflexive competence as articulated in current policy documents may not provide the necessary orientation for environmental education processes that enable

engaged and meaningful responses to socio-ecological issues and risks in complex and contested development frameworks.

Within the context of global change and as a challenge to dominant instrumentalist forms of learning, adult learning is being reconceptualised within the context of lifelong learning (see 4.4). Increasingly the need for individuals to learn throughout their lives and to learn from their learning is being recognised in preparing individuals to engage actively with / in processes of change. Furthermore, it is increasingly being recognised that adults learn in a variety of settings, in a variety of ways and with a variety of purposes. The need thus arises for contextually relevant learning processes that open up learning opportunities and possibilities available to adult learners (see 4.5). This has led to a redefining of the 'field of adult education' to a 'moorland of adult learning' that emphasises the learner in the learning process and involves the learner in defining the aims, content and processes of their learning.

Environmental education processes are about social change which involves challenging dominant, primarily modernist social systems, structures and processes within which the origin of socio-ecological issues and risks is to be found (see 2.6). It also involves both knowledge and unawareness of socio-ecological issues and risks and how these come to be constructed (see 1.5.1 & 2.6). Lash and Wynne (in Beck, 1992:8) argue for learning processes that are reflexively critical and disruptive of the very assumptions on which dominant modernist social systems, structures and processes are founded and maintained. Responses to socio-ecological issues and risks thus necessitates learning processes that encourage a challenge to the dominance of scientific rationalist knowledge frameworks, the dominance of instrumental rationalism and the exploration of alternative knowledge forms which enable open-ended challenges characteristic of social processes of change (Beck, 1999:129). Section 4.5 explores some curriculum perspectives that might encourage the 'opening up' of learning processes to support the exploration of what remains hidden and unknown and open up contexts for reflexive learning and action for change.

A key concern amongst environmental educators is the danger of designing learning programmes within the competence framework of the NQF that may narrow environmental learning opportunities rather than opening up the space for learning beyond predefined limits (see 2.8). Reflexive competence in the South African competence framework is an attempt to support social processes of change in the post apartheid era. The notion of reflexivity however, if not contextualised within what Popkewitz (1999:18) terms a social epistemology of critique and in-depth engagement with processes of transformation in South Africa, runs the risk of maintaining exactly that which it was intended to counter, the perpetuation of socio-economic inequality. Reframing reflexive competence in the context of social change in South African

society and in the broader competence framework opens up the space for learners to engage critically with processes of change.

The RU/GF course, with its particular curriculum orientation appears to be enabling of reflexive environmental education processes within this framing of reflexive competence. The following chapter explores the potential inherent in the various course processes and features in the RU/GF course that enable participation and action within reflexive social processes and the development of reflexive competence.

CHAPTER FIVE

COURSE PROCESSES ENABLING REFLEXIVITY AND THE DEVELOPMENT OF REFLEXIVE COMPETENCE: THE CASE OF THE RHODES UNIVERSITY / GOLDFIELDS COURSE

5.1 INTRODUCTION

Section 2.6 describes the complex and interrelated nature of environmental issues and risks. The context in which these environmental issues and risks are encountered play a significant role in determining perspectives about these and ultimately shaping responses to these environmental issues and risks. Generalised and universal solutions that fail to address the fluid and idiosyncratic nature of environmental and educational realities existing in varied contexts are inadequate in exploring effective responses to these environmental issues and risks (Janse van Rensburg, 2000:16). As noted earlier, adequate and effective responses to contextualised environmental issues and risks require critically reflexive environmental education processes aimed at disrupting the social systems, structures and processes within which these issues and risks originate and are constructed and so open up possibilities for new and different constructions of and responses to environmental issues and risks (see 5.2).

Section 4.7 introduces some of the curriculum indicators informing the RU/GF course orientation, aims and processes. The following chapter explores in more depth the case of the RU/GF course and associated professional development processes that encourage an engagement within reflexive processes that enable individuals to explore new and different ways of thinking about and approaching environmental education processes in context. Traditionally, responses to environmental issues and risks have been sought within technical rational frameworks (see 5.2). Given the ineffectiveness of these approaches to addressing the increasing scale of environmental degradation, responses to environmental issues and risk need to be explored outside of technocratic approaches based on scientific rationality (see 2.6). Appropriate responses to the uncertain and unpredictable character of environmental issues and risks require critically, reflexive processes in environmental education that open up contexts of learning, action and change (see Beck, 1999:118; Lash and Wynne, in Beck, 1992:8).

Section 1.5.5 introduces a distinction between reflexivity as social processes of change and reflexive competence as the capacity to open up alternatives to act otherwise, the latter being evidence of participation in reflexive processes. Past and current research however indicates the challenges associated with finding evidence of reflexive competence as a set of single,

discrete elements of competence, observable at any particular point in time (see 1.2, 3.7.2 & 5.3). Given its link *within* reflexive processes, reflexive competence needs to be reviewed in the context of participation in reflexive processes and provides insight into social agents' capacities to critically and reflexively review the social epistemology of practice in an attempt to open up the potential for change. Further, reflexive competence needs to be seen as a culmination of various integrative elements of processural competence that develops over an extended period of time and not necessarily in the context of a single professional development experience. As such, the analogy of a reflexive journey becomes useful in describing an ongoing engagement within reflexive processes, the embarking on, and nature of this journey being shaped by various socio-historical factors (see 6.2).

All participants join the course prompted by various questions regarding perceptions of environmental issues and risks in professional contexts and educational processes through which these are managed and / or responded to. As such all participants joining the course could be seen as having started on a reflexive journey prior to participation in the course. The RU/GF course and associated course processes and features can be seen as supporting and strengthening the ongoing engagement within reflexive processes of change and so enables the further development of reflexive competence. As such and in the context of this research, reflexive agency can be seen as emerging within and out of social context into the course.

As introduced in section 3.7.1, the underlying themes of the RU/GF course can be seen as having the potential to enable the development of the integrative elements of reflexive competence that culminate in and support an engagement within reflexive processes of change in the context of environmental education. Through these themes of professional development in the RU/GF course, participants are encouraged to collaboratively (in dialogue with critical others) and critically review the nature, causes and impacts of environmental issues and risks and so open up possibilities for developing new and different ways of thinking about and responding to environmental issues and risks through educational processes. Through this process of review opportunities exist for exposing the root causes of environmental issues and risks and the social positions (embedded within dominant knowledge frameworks) through which these are constructed, maintained, managed and responded to in socio-historical context.

The following chapter explores these themes in the RU/GF course through which an engagement in reflexive processes is enabled and supported in an attempt to provide insight into the learning context shaping participation in reflexive processes and the development of reflexive competence. This exploration of course processes and features draws on the integrative elements of processural competence as an analytical lens through which to review opportunities in the course that enable and support an engagement within reflexive processes

(see 3.7.2.2). It draws on the experience of various course participants in providing examples of an engagement within reflexive processes using the above-mentioned themes to reflect evidence of this engagement within reflexive processes. It further describes various course processes and features in the RU/GF course that support and encourage an engagement within reflexive processes and the development of reflexive competence (see 3.5.2 & 5.4). These course processes and features include work-based assignments, workshops, tutorials, course materials and assessment as processes of learning. It provides an in-depth description of these various course processes and features and highlights the opportunities and constraints in these to supporting and encouraging a reflexive review in / of practice (see 5.4). The chapter concludes with an overview of the various research projects that have informed the continuous reflexive review and adaptation of the course over time.

5.2 REFLEXIVE RESPONSES TO ENVIRONMENTAL ISSUES AND RISKS

Through its particular course orientation and learning processes, the RU/GF course attempts to support the professional development of critically reflexive environmental education practitioners (see 1.3). Participants in the course are attempting to respond to a range of diverse and complex environmental issues and risks, rooted in equally complex socio-historical, economic and political systems (see 2.5 & 2.6). Effective responses to these issues require a challenge to and action to change the systems, structures and processes from within which these environmental issues and risks emanate (see 2.5 & 2.6). In this sense, Beck (1992:24) writes that averting or managing ecological risks often requires a reorganisation of power and authority, thus making what is initially considered to be ‘... unpolitical issues of nature’ issues of political significance (see 2.6). In the context of change, Popkewitz (1999:35) similarly sees ‘... knowledge [a]s a political practice’ that seeks to ‘... destabilis[e] the conditions that confine and inter the possibilities for agency’ to explore options for change (*ibid*:31; see 4.6.3).

Scientific rationality has and continues to play a key role in defining, managing and, in certain instances, refuting socio-ecological issues and risks (see 2.6). In May 2002, 1 100 scientists compiled the ‘Global Environmental Outlook 3’ report revealing the current state of the global environmental crisis (UNEP, 2002). This report was prepared in preparation for discussions at the WSSD and, in part, to shock world leaders into taking seriously global environmental issues and risks (see 2.5). The Living Planet Report (WWF, 2002) is a further example of scientific definitions of global environmental issues and risks. The recent increase in the use of genetically modified crops to address crop failures and increase crop yields reflects a further example of the dominant role of science in ‘managing’ and possibly creating further risks as the health implications of genetically modified foods remain unknown (Beck, 1999:34). These

examples reflect the continuing reliance on scientific rationality to understand, interpret and manage environmental issues and risks.

Beck (1992:155) distinguishes between 'primary scientization' and 'reflexive scientization' as both having a dominant, yet shifting role in modern society. Primary scientization is characteristic of processes of risk production through the unquestioning belief in science as the means towards economic and social progress (see 2.6). Beck (1992:155) argues that the dominance of scientific rationality continues in a process that he refers to as 'reflexive scientization' in which science turns in on itself and conducts a critique of science and the existing practice of experts. The primary role of science in society, though remaining dominant takes on an ambivalent role from one of causes of socio-ecological issues and risks to one of a potential source of solutions (*ibid*).

However, as the range and scope of socio-ecological degradation escalates, scientific rationality is increasingly becoming questionable in pointing us in the direction of effective and active ways of responding to these issues and risks (see 2.5). Beck (1994:9) notes that '... risks flaunt and boast with mathematics'. Risks are always probabilities and rule out nothing (*ibid*). Risks are often '... mediated on principle through argument' and are sometimes neither visible nor perceptible to those affected, may have long-term consequences beyond the life-span of those affected, and very often require science to become visible and interpretable as risks at all (Beck, 1992:27). Socio-ecological issues and risks as the '... undesirable outcome of modernization in undesirable abundance' are thus a constellation of uncertainty, ambiguity and ambivalence (Beck, *ibid*:26).

Conceiving of socio-ecological issues and risks in this way often deepens the dependence on expert rationality and responses often take on the form of instrumental rational control (Beck, 1994:30; Ward, 2002:2). Moreover, a focus on risks often tells us what not to do, and offers very little in the way of what should be done (Beck, 1994:9). This often leads to individuals becoming incapable of acting on socio-ecological issues and risks and '... avoidance imperatives thus dominate' (*ibid*). In this sense, O'Riordan and Cameron (1994:15) write that '... catastrophe is truly too awesome to contemplate, so is side-stepped'. If individuals do become motivated to act, this action is often undertaken in the context of instrumental rationality (Beck, 1994:183). For example, through adopting and implementing the 'precautionary principle' that reflects a '... managerial or programmable quality, a purposeful role in guiding future political and regulatory action' (O'Riordan & Cameron, 1994:16). Responses to issues and risks then draw on knowledge frameworks based on the foundations, systems, structures and processes of modernization that have (paradoxically) created these issues and risks in the first place (Beck, 1999:109). Beck (*ibid*) conceives of these responses to be based on

reflection, rather than reflexivity that are often limited to seeking solutions within existing social systems, structures and processes and does not open up possibilities for new and better ways of acting on socio-ecological issues and risks (Beck, 1994:177; see also 1.5.1). Popkewitz and Brennan (1998:25), similarly recognise the limitations of attempting to locate actors ‘... uncritically as the locus of struggle for knowledge’, reflected in approaches premised on a philosophy of consciousness, and as such ‘... draws on the very models that have oppressed through the regulation and production of subjects’ (see 4.6.3). In this sense, they (Popkewitz and Brennan, 1998:25) note that ‘... systems of relevancies are taken for granted’ and ‘... multiple issues of power ... are hidden in ... rhetorical constructions’. As such, the theory of a social epistemology encourages attempts at challenging and changing the frames of reason (knowledge) and consequent principles of ordering out of which socio-ecological issues and risks emerge, are defined and managed.

Reflexivity implies that opportunities and compulsions for action open up through which living and acting in uncertainty becomes a basic experience (Beck, 1994:12). Linear approaches to knowledge characteristic of modernisation processes foster our inability to know and unwillingness to know as it rejects or blocks out any other forms of knowledge (see 1.5.1). Beck (1994:33) notes that doubt comes to play a central role in that it is ‘... more curious, more open to things that are contrary, unsuspected and incompatible’ and thus makes everything possible. Central to processes of reflexivity is admitted unawareness and uncertainty and an opening up of a willingness to explore outside existing perspectives and rationalities (Beck, 1999:131). Through this explicit exploration and processing of unawareness, contexts of action are opened up (*ibid*). In this sense, Janse van Rensburg (1995b:284) views reflexive environmental education processes as ‘... help[ing] learners explore the value and / or inappropriateness of current theories and structures in a positive way’ that will enable a reflexive review in / of practice rather than completely dismissing all theory, which results in relativist passivity’. In reflexive environmental education processes learning is not linear, it is not an individual process, it cannot be generalised in different contexts and it is grounded in action (Janse van Rensburg, 1994:14).

5.3 ASSESSING THE DEVELOPMENT OF REFLEXIVE COMPETENCE IN THE CONTEXT OF AN ENGAGEMENT IN REFLEXIVE PROCESSES

Drawing on Beck’s (1999:131) thesis of reflexivity, an engagement within reflexive processes involves opening up possibilities for different ways of knowing and doing, exploring responses to socio-ecological issues and risks outside of existing, dominant knowledge frameworks and hence outside of existing social foundations, systems, structures and processes. Thus environmental education processes become processes of exploring the known *and unknown* of

environmental issues, risks and responses rather than accepting prescribed and generalised processes of responding to socio-ecological issues and risks. Environmental education processes also become processes of engaging critically within dominant forms of reasoning and principles of ordering (Popkewitz & Brennan, 1998:28). This not simply to identify imbalances in knowledge systems and associated power relations, but to understand and challenge how these knowledge systems and power relations have come to be constructed in context, and in this way bring into question, and open up to change the foundations of dominant knowledge frameworks and associated power relations.

Through its particular orientation, the RU/GF course provides opportunities to explore broader conceptions of contextual environmental issues and risks and more effective educational processes in response to these (see 1.3.2). The course thus has an intention to engage participants in reflexive processes and so enable the development of reflexive competence. Engaging in reflexive processes in this sense implies a changed orientation to thinking and acting within our practice as environmental education practitioners (Personal Communication, Lotz-Sisitka, 2002). Reflexive competence, considered in the context of reflexive environmental education processes cannot be seen as an aspect of professional development that can be specifically predefined since it deals with an exploration of both known and 'not yet known' options of approaching practice within particular and diverse socio-historical contexts. Similarly, finding evidence of reflexive competence, as a specific type of competence in the context of a 'once off' professional development experience proved to be a challenge in both the initial research and in the preliminary findings of this research (see 1.2). Reflexive competence appears to have a 'longer-term' and ongoing character and appears to be a culmination of various integrative elements of competence developed over a period of time and facilitated / enabled (and at times constrained) by / within various socio-historical factors (see 3.7.1.3 & 5.1).

5.3.1 An initial exploration of the development of reflexive competence in the context of the RU/GF course

One of the aims, amongst others, of the initial research study was to explore the development of practical, foundational and reflexive competence as these develop in the context of the course (Raven, 2000:5; see also 1.5.4). To support this particular aim of the research study, an assessment of participants' portfolios was undertaken consisting of a collection of assignments developed by participants throughout the course (Raven, 2000:32). The research study involved a group of sixteen participants' from the 1998/1999 course (*ibid*). This data was complemented through interviews with tutors and participants and focus group discussions involving participants (*ibid*:33). In this research study, data was analysed within the

competence framework defined for teachers in the 'Norms and Standards for Educators Document' (Department of Education, 1998:71-80; see also 1.5.4).

In this initial research the development of practical and foundational competence was clearly evident from an assessment of participants' portfolios (Raven, 2000:65). For example, some of the practical competences observed through this analysis include amongst others, the development of improved writing and reading skills and the designing of an environmental education resource or programme to respond to a particular environmental issue in the participants' context (*ibid*:68; see also 1.5.4). Some of the foundational competences developed include amongst others, a deeper understanding of environmental issues and environmental education processes and a deeper understanding of educational theories (Raven, 2000:68; see also 1.5.4). During the research some tutors noted the development of reflexive competence amongst participants, though this appeared to have been interpreted as the competence to reflect critically on practice, identify limitations to more effective responses in practice and to articulate proposals for change in practice (Raven, 2000:69).

At the time of undertaking this initial research, the notion of reflexivity and reflexive competence had not been explored in much depth and at the time reflexivity was seen to be equal to reflexive competence. At this time, given my lack of depth in understanding reflexivity and reflexive processes, evidence of reflexive competence remained elusive in an analysis of participants' portfolios (*ibid*:90). Through this initial research and through discussion with colleagues, I began to suspect that reflexive competence might not be a single, observable capability, but rather a culmination of competences, developed over a period of time and shaped by various social historical factors that enable the reflexive review in / of practice (Personal Communication, O'Donoghue, 2000). It appeared to be more of an integration of what we do (practical competence), the thinking that shapes our doing (foundational competence) and a critical exploration of and engagement with factors that inhibit possibilities for change (reflexive competence), and is thus integrally associated with the notion of applied competence (see 1.5.4, 4.3.3 & 4.6.3).

5.3.2 A further exploration of the development of reflexive competence in the context of the RU/GF course

Preliminary findings in this research study emerging from the second layer of data analysis in phase one further suggests the difficulty of clearly identifying and describing reflexive competence (see 3.7.1.2). Using the course themes, as introduced in 3.7.1.2, to find evidence of an engagement within reflexive processes and the development of reflexive competence continued to prove a challenge, despite the fact that this formed a central focus in the process of data collection (see 3.6).

One of the issues emerging from the initial research suggests that an analysis of participants' portfolios (including assignments) is insufficient to reflect an engagement in reflexive processes and the development of reflexive competence (Raven, 2000:76). One of the recommendations emerging from the 2000 research was that future research should incorporate discussions with participants in an attempt to gain more insight into the learning experience offered in the course in relation to course processes, but also in relation to their professional contexts (Raven, 2000:76). To strengthen insights into participants' professional context a sight visit was coupled to the final interviews and meant to provide an opportunity to observe and talk with participants in their work context around different aspects of their practice. This site visit was less focused on the impact of the course on practice as the focus of the research was to gain insight into the development of reflexive competence *within* course processes.

Initially the course themes were used to assess the development of reflexive competence – phase one, layer two of the data analysis process (see 3.7.1.2). Here I focussed for example on evolving conceptual understandings of environmental issues and environmental education processes. Another example was a focus on participants' interaction with theoretical perspectives to assess praxiological approaches within practice. At this point I felt that I ran the risk of reducing reflexive competence to a discrete set of competences, which at times could not be distinguished from certain practical and foundational competences developing through the course. For example, conceptual understanding could be seen at foundational competence being focussed on developing understandings of environmental issues and risks. Another issue that emerged from this initial analysis is that reflexive competence cannot be reviewed outside of reflexive processes. As noted before, reflexive competence is seen as the evidence of engagement within reflexive processes with reflexive processes being seen as longer - term social processes which cannot be framed within or limited to a year-long interaction in the RU/GF course. Rather, engagement within reflexive processes in the course and the development of reflexive competence, needs to be seen as an 'instance' within a longer term process of reflexivity. This assessment of reflexive competence then requires a consideration of the socio-historical context within which an engagement in reflexive processes is shaped (see 1.5.5, 3.5 & 6.2). This is where reflexive competence began to emerge as a set of integrative competences, evident within the context of longer-term reflexive processes (see 6.3).

5.3.3 Reflexive competence as evidence of an engagement in reflexive processes of change

Within the context of the RU/GF course, the following integrative elements of reflexive competence provides evidence of participants engagement within reflexive processes. In the

context of assessing an engagement within reflexive processes and the development of reflexive competence, these elements are not to be viewed as discrete and individual capabilities, but rather a 'working together' of competences to support an engagement within reflexive processes. For example, changing perspectives on environmental issues and risks is supported by the praxiological opportunities offered in the course and the opportunities for critically reflecting on existing constructions and social foundations through which these are constructed, communicated and managed, through various levels of interactions and deliberations in the course. The course themes are used here to discuss opportunities in the course for an engagement in reflexive processes, but these are also linked to my evolving understanding of these elements within reflexive processes as introduced in section 3.7.2.

5.3.3.1 Conceptual understanding

Many participants join the RU/GF course as an introductory course to environmental education, having little prior experience with / in environmental education processes (Janse van Rensburg & Le Roux, 1998:82). Many participants often begin the course with an exploration of environmental issues and risks and responses '... exclusively or dominantly in the terms and formulas of *natural* science' (Beck, 1992:24, original emphasis). Few participants recognise the complex and interrelated nature of environmental issues and risks in designing educational responses in context (see 2.6). Beck (1992:25) recognises these approaches to environmental degradation as reflecting a '... loss of social thinking' that consequently runs the risk of leaving people absent from the web of destruction of nature and the environment. Responses to environmental issues and risks are then constructed without '... asking about matters of social and cultural significance' (Beck, 1992:24) and environmental education programmes often take on the form of targeted messages, awareness raising of environmental issues and experiential learning in natural settings (Janse van Rensburg & Le Roux, 1998:81).

Various course processes and features encourage and support participants in exploring broader conceptions of environmental issues and risks, focusing on the social foundations, systems, structures and processes through which these are produced, communicated and managed. At the start of the course, participants choose one or more environmental issue and / or risk that is / are of concern to them in context. These issues and / or risks form the focus of learning in the course (see below) and are carried through in assignment work (see 5.4.1). Focusing on these specific contextual issues, and drawing on theoretical perspectives introduced, participants are encouraged to explore the nature of environmental issues and risks and the root causes thereof. In the course, for example, participants are introduced to various theoretical perspectives that provide a conceptual lens for analyzing the nature of environmental issues and risks and the root causes of these (see also 5.4.4). Some of these theoretical perspectives,

for example, alert participants to potential social, economic and political influences through which environmental issues and risks are constructed, communicated and managed (O'Donoghue, 1995:8; see also 5.4.4). In another example, participants are alerted to some of the social beliefs and values through which unprecedented economic growth is fostered, such as modernism, scientism, technicism, amongst others, and through which environmental issues and risks are produced, communicated and managed. Participants are further encouraged to consider the visible and invisible impacts and the short- and long-term consequences of these issues and risks. This exploration allows participants the opportunity to consider critically how environmental issues and risks come to be constructed and to question existing perspectives about them. This in an attempt to encourage participants to '... draw out the social situational questions' implied in the scientific constructions, communications and management of these issues and risks (Beck, 1992:5). Through this exploration participants are provided with the opportunity to explore how and *why* environmental issues and risks come to exist and future potential risks associated with them. This in depth exploration of the nature, causes and impacts of environmental issues and risks encourages participants to consider responses that seek to address the root causes rather than superficial responses that only seek to address the symptoms of these issues and risks (see 6.3.1).

Various participants in the course cite the development of deeper conceptual understandings of contextual environmental issues and risks as a significant aspect of their professional development in the course (Janse van Rensburg & Le Roux, 1998:83). They often cite this development of deeper understandings of contextual issues and risks as opportunities through which they can explore more effective methods and approaches in their work (*ibid*). This focus on conceptual understanding of environmental issues and risks engages participants in processes through which dominant interests are recognised in the social construction and definition of these. Beck (1992:5) argues that in bringing the dominant constructions of environmental issues and risks into question allows for the recognition of '... the social conditions underpinning scientific conclusions' and so opens up a broader scope of possibilities, previously unknown or unacknowledged, through which to respond to these. In the context of the RU/GF course, conceptual understanding as a framework through which the practice of environmental education could be better understood, allows for the identification of opportunities for exploring new and better ways of responding to socio-ecological issues and risks and thus opens up possibilities for change.

5.3.3.2 Critical reflection

A central feature of the course is encouraging participants to critically reflect on practice in an attempt to uncover the unconscious conditions through which thought and action are shaped

(see 1.5.1 & 3.7.2). As suggested in structuration theory breaking the boundedness of consciousness allows for an increase in knowledge of influences shaping how we think about and act in social interactions, and so increases the potential for acting otherwise (see 1.5.1).

Many participants in the course see the opportunities for critical reflection as a significant aspect of professional development in supporting the exploration of influences inhibiting change in practice and opening up possibilities to think about and do differently (see 6.3.3). Many participants, as in the case of most of the global population, come from an educational context in which expert knowledge assumes a central and dominant role in teaching and learning. Participants often themselves submit to this dominance of expert knowledge or assume the role of 'the expert' appointed in the service of others. An example of this is reflected in many participants joining the course with an expectation of being told by the 'experts' what is the best way of 'doing' environmental education in their context and often expressing disappointment in not finding this explicit 'expert' direction (see 6.4.7). Within this context of expert dominated education processes, critique is not encouraged, often frowned upon or rejected (see 4.3.2 & 4.4). For many participants in the course a culture of critique is new and novel.

In the context of the RU/GF course reflexivity is often used synonymously with critical reflection. Popkewitz and Brennan (1998:16) however alert us to the limitations of critical reflection within a philosophy of consciousness, where the intention is simply to identify the origins of power and the interests that are served through unequal power relations (see 4.6.2). They warn that in this context, critique serves simply to recognise and *redistribute* unequal power relations rather than challenging power positions and its consequent social actions and interactions. In the context of reflexive processes it becomes crucial to review critically reflective processes in terms of its intention to avoid this limiting potential for change inherent in a philosophy of consciousness. A central premise on which the course is based is the notion that 'we are all learners and all educators'. Participants in the course, tutors and participants alike are encouraged to work with this idea in their interactions within course processes and in the company of others and this reflects some of the ways in which social roles and identities forged through conventional education practices are challenged through the course.

Critical reflection on the unconscious preconditions of thought and action is further encouraged explicitly across three themes in the course, though similarly being addressed throughout the rest of the course (see 5.4.1). Through various themes that form the framework for learning in the course, participants are encouraged to reflect critically on existing practices and the factors in context that have come to shape environmental education processes. To support this exploration, participants are introduced to various social and educational theories that underpin and are reflected in different approaches to environmental education (see 5.4.4). Through this

introduction participants are encouraged to reflect on approaches to environmental education in context and attempt to clarify the values, assumptions and interests inherent in these approaches. The aim of this is to provide participants with a theoretical framework through which they can come to understand, identify limitations in and attempt to challenge and change power relations embedded in educational practice (Janse van Rensburg & Le Roux, 1998:82). As such formal theory comes to play a significant role in serving as a 'lens', through which practice can be understood, critically reviewed and changed (see 1.5.3 & 4.5.4). Robottom (1987b:297) notes that it is in the critique of the environmental and educational values and assumptions that shape existing environmental education policies, organisations and practices that change is made possible.

In the context of the RU/GF course, critical reflection is seen as important for supporting and opening up possibilities for new and different ways of thinking about and approaching practice and so reflects one of the integrative elements underpinning an engagement within reflexive processes. Through critical reflection possibilities are opened up for renegotiating and re-establishing the foundations for engaging within knowledge frameworks and existing power relations and interactions (see 3.7.2). In this sense, Fien and Rawling (1996:14) describe the reflective practitioner as being one who has '... the courage and desire to recognise and experiment with alternatives ... to break out of the mechanical routine of making decisions based on intuition, impulse, tradition and authority'.

5.3.3.3 Contextual relevance

Grundy (1987:101) notes that learning takes place when it is grounded in real experiences, rather than drawing on hypothetical examples. Usher *et al* (1997:26) similarly argues for learning processes that are contextually relevant to the lives of the learner. Learning in the RU/GF course is structured around issues, risks and processes that are of contextual relevance to participants. Prior to the start of the course, participants are encouraged to introduce their work context, the work that they do as environmental educators and some of the issues that confront them in context, through a pre-course assignment (see 3.5.2 & 5.4.1). This focus on contextually relevant issues, risks and environmental education processes is encouraged throughout the course through various course processes and features, and particularly in assignment work (see 5.4). Through assignment work participants are encouraged to develop an environmental education resource or programme for use in their work context and in response to the environmental issues and risks that they have identified as the focus for learning (see above). Janse van Rensburg and Le Roux (1998:108) note that in the context of the RU/GF course '... a participants' work in the 'real world' forms the source of learning and consequently learning feeds back into the 'real world' of participants'.

The focus of environmental education processes is always, irrespective of varying understandings and approaches, the environment and environmental issues and risks. In this sense, Lotz and Robottom (1998:24 citing Sables, 1997) see the environment as a 'text', '... an educative exploration of environmental issues' which provides the focus, activities and content for learning. In considering the social definition and construction of environmental issues and risks, contextuality is foreground in exploring learning processes to respond to these (Robottom & Kyburz-Graber, 2000:258, Janse van Rensburg, 2000:17; see also 2.6). Individuals and social groups construct meaning and the significance attributed to environmental issues and risks within a given socio-historical context (Robottom & Kyburz-Graber, 2000:258, Janse van Rensburg, 1995a:22). Environmental issues and risks manifest differently in different contexts and result from an array of inter-related variables that differ from one context to another (Janse van Rensburg, 2000:16). In each professional situation therefore, environmental issues and risks will thus be diverse, complex and vary in different contexts (Janse van Rensburg & Le Roux, 1998:83; Lotz & Robottom, 1998:24). Responses to these contextualised environmental issues and risks are often shaped by an interplay between an individual's subjective view and the social, cultural, historical and environmental context within which that individual finds him / herself (Robottom, 1987a:107). Context in this sense does not refer merely to physical location or setting. It is an amalgam of '... body, relationships, moral and value dimensions and the socio-cultural, economic, political and ecological influences in a given situation at a given time' (Lotz & Olivier, 1998:11). It further recognises the relationship between the local environment and national and global dimensions of the environment (*ibid*). Contextuality in environmental education processes is foreground in response to the inadequacy of technical rational models of universal and generally applicable solutions to environmental issues and risks, irrespective of the context within which they exist (Janse van Rensburg, 2000:16; see also 5.2). In failing to address the particular and diverse nature of contextualised environmental issues and risks, these approaches fail to prepare environmental educators adequately for responding to issues and risks as they arise in context (Janse van Rensburg, 2000:16; Lotz & Robottom, 1998:24).

Reddy (2000:23) notes that real life issues are significant in creating '... [a] meaningful context of learning' by adding more relevance to learning and helping the learner to contextualise learning. Through encouraging a focus on 'real life' environmental issues and risks, the RU/GF encourages an interaction with environmental issues and risks that affect the daily lives of participants. Interaction with these environmental issues and risks encourages participants to come to understand the complexity and interrelatedness of these issues and risks and their place in responding to them. In this sense, Lotz and Robottom (1998:24) note that environmental issues must be experienced to be fully understood. A focus on the 'real life' work of participants as environmental educators encourages a deeper understanding of the role that they play, and can come to play, in responding to the global environmental crisis. As such, it

offers the opportunity to explore new and exciting ways through which they, through their practice of environmental education, can make a contribution to effectively addressing environmental issues and risks in context.



Diagram 5.1 *Songezo's learning in the course was focused on the issue of waste in the community context of Grahamstown where he lives and works.*

As reflected above, a focus on contextuality is encouraged throughout the course. In the context of reflexive processes, Popkewitz's (1999:35) social epistemology however encourages us to do more than simply focus on what we do and how, but to similarly focus on *why* we do things the way we do and also on how things have come to be the way they are. In the orientation to the course participants are introduced to a focus on history and context as one of the key ideas shaping the course (Rhodes University Environmental Education Unit, Introductory Text, 1999:10). In two of the four assignments participants are encouraged to explore critically current practices, and also explore how these practices have come to be shaped, so encouraging an exploration of the socio-historical factors that shape practice (see 5.4.4). In these assignments however, the 'what', 'how' and 'why' appear to share an equal weighting in participants' reflection on thought and action (see 5.4.1; see also appendix 12 and 13). Similarly, at times the 'what' and 'why' appear to overshadow an exploration of 'how', possibly because descriptions of 'what' and 'how' are often easier than exploring the 'why' and how things have come to be, inherent in practice (see 6.3.2, 6.3 & 6.4.7). This imbalance might then result in limiting the reflexive potential for opening up possibilities for change and might at this point come to highlight a potential area for reorientation in the course to foreground more

explicitly an exploration of how and why current practice has come to be constructed and so move beyond a narrower focus on what is real and relevant to course participants in terms of 'what' and 'how' in immediate time-space configurations (see 6.3.2, 6.3 & 6.4.7).

5.3.3.4 Praxis

A further significant feature of the RU/GF course is a praxiological approach to professional development (see 1.3.2). Praxis implies the recognition of the relationship that exists between theory and practice (Janse van Rensburg & Le Roux; 1998:104, Lotz, 1999a:30; Usher *et al*, 1997:137). Practice often becomes a preoccupation with what is done, and very little consideration is given to *why* things are done in a particular way and what the implications are for how they are done. The latter approach is more consistent with the social epistemological framing of reflexivity. Through a praxiological orientation, the RU/GF course encourages participants to consider why they do what they do and how they do it. This was a particularly significant experience for me when I did the course in 1997/1998 (see 3.3.1). The course, through assignment work and exposing me to theoretical perspectives through the course materials, in a sense 'forced' me to reflect critically on the approaches we used in what we were doing and encouraged me to rethink and change these approaches (*ibid*).

Praxis however, involves much more than simply understanding what lies beneath the choices made in practice (Janse van Rensburg & Le Roux, 1998:105). Participants in the course often view praxis in the course as a mere application of theoretical ideas to practice and view this 'new' and 'different' way of thinking about practice as a change (see 6.3.4). This narrow perception of praxis in the context in the course, which participants often view as a significant outcome of the course, sometimes limits participants' exploration of possibilities for change (see 6.4.7). Praxiological processes within which critique and conscientisation are pivotal (Janse van Rensburg & Le Roux, 1998:105) involves turning an exploration of better ways of thinking about and doing things back into practice, so that it informs what we do next (Lotz, 1999a:30). A significant aspect of praxis is the enactment of alternatives emerging from a critique of practice. In this sense, Grundy (1987:104) sees critique and action as two constitutive elements of praxis. Praxis thus involves drawing on what Usher *et al* (1997:137) refers to as formal theory as an analytical lens through which to critically analyse practice and purpose to explore increased options through which to effectively respond to socio-ecological issues and risks (see 4.5.4).

As noted earlier, participants are introduced to theoretical perspectives in the course intended as a 'lens' for critically and reflexively reviewing practice. The role of theory in the course is, however, appear to be shaped by traditional conceptions of theory as 'the truth' evident in conventional education practices and very often participants 'adopt' certain popular theories

within which to *locate* their practice (see 6.3.4 & 6.4.7). This might be the result of norms and conventions traditionally established in interactions with knowledge frameworks and at this point raises a critical point for reflexively reviewing the role of theory in the context of the course (see 7.4). The role of theory in the course is intended to make explicit what is implicit in practice and thus encourage a critical appraisal of the informal theory inherent in practice (see 1.5.3 & 4.5.4). The aim of this conscientisation is so that alternatives to current practice might be explored and opened up. The praxiological approach to practice thus supports an engagement within reflexive processes in that it encourages ‘... *informed* committed *action to change* the world’ (Usher *et al*, 1997:189, my emphasis).

5.3.3.5 Participation and deliberation

One of the primary critiques of structuration theory is its individualistic account of reflexivity (see 1.5.1). Loyal (2003:40), in response to this critique suggests a consideration of social actions and interactions in processes of reflexive engagement within knowledge systems and actions. This highlights the significance of processes of participation and deliberation in supporting an engagement within reflexive processes. In the context of the RU/GF course participation and deliberation is a significant feature in supporting participants’ explorations of not yet known constructions of, and responses to environmental issues and risks. In this sense, Janse van Rensburg and Le Roux (1998: 32) note that it is a central axis around which most of the key features of the course rotates. Participation, as a central and key feature in the course, is based on the assumption that critical and active participation is needed to respond effectively to environmental issues and risks (Lotz & Janse van Rensburg, 1998:6). Professional development and developing the ability to respond effectively to environmental issues and risks is thus closely linked to critical participation (*ibid*). Participation in the course is encouraged at various levels and is experienced differently by participants (see 5.4.6 & 6.2.3). However, most participants experience the culture of participation in a positive way (Janse van Rensburg & Le Roux, 1998:32).

O’Donoghue (1999:17) notes that any education process is participatory by virtue of being a part of it (see 3.3.2). One cannot therefore be in a course without being a part of it, and thus participating in it. The significance of the participatory nature of the RU/GF course is captured in the notion of ‘a course amongst others’ (O’Donoghue in Janse van Rensburg & Le Roux, 1998:32). The course is not just a course amongst other courses but one that ‘... exists in and because of course participants’ (*ibid*; Lotz & Janse van Rensburg, 1998:16). Participation is one of the criteria for successful completion of the course, thus one of the broad outcomes of the course and one of the main criteria for assessment (see 5.4.5). Participation in the context of the course, however, means more than merely being a part of the course. It involves active

participation in and contributions to processes of learning, amongst course participants. Learning in the context of the course is thus not an individualised activity, but is encouraged through collective interactions and deliberations at various levels.

Participation in the course includes participants contributing to a focus for learning through exploring contextually relevant issues and risks and focusing learning on practice as a response to these issues and risks (see 5.3.3.1 & 5.3.3.2). Participants also contribute to the design of learning activities, more so in tutorials than in workshops, since these are negotiated amongst participants and tutors (see 3.5.2; 5.4.3 & 5.4.2). Participants also contribute to the course through commenting on readings and core texts and bringing new and additional reading and texts into the course for deliberation. Participants further contribute to processes of negotiating assessment criteria together with their tutors and other course participants (see 5.4.5). A significant contribution made by participants to the course is in supporting the learning of others through participating in the network of learning provided for in the course (see 4.5.5, 4.7 & 6.4.5).

Two aspects supporting an engagement in reflexive processes are that of dialogue and reflection. The participatory orientation of the course encourages dialogue and reflection through deliberation at various levels in the course. Firstly, participants are encouraged to deliberate around the theoretical perspectives introduced through the course and to critically review their practice in the supportive company of others (see 5.3.3.3). Secondly, a critical review of practice is further encouraged through deliberation with other course participants, including tutors as for example in sharing critical reflections of practice through presentations of assignments (see 5.4.1). Through deliberations with other course participants, opportunities are opened up for participants to share and reflect on different perspectives, experiences and ideas, thus challenging individualistic approaches to learning (see 4.5.5). Thirdly, participants are encouraged to deliberate with tutors and fellow course participants in the process of assignment writing through which they can clarify their ideas and work towards a reorientation of practice (see 5.4.1). Deliberations within processes of assessment further encourages a critical review of practice and clarifying ideas towards more effective responses to environmental issues and risks (see 5.4.5). Through these various processes of participation and deliberation participants open themselves up to critically considering and exploring alternative perspectives and improving environmental education processes in context.

Through the participatory approach to learning and encouraging deliberation within the course, participants are often able to develop relationships with each other (see 3.5.2.2). Examples of this is seen in participants interacting at a social level with each other and attempting to retain contact with each other after the course and generally supporting each other through the

professional development process (Janse van Rensburg & Le Roux, 1998:36; see also 3.5.2.2 & 6.3.5). For many participants these interactions with others involved in environmental education is often an expectation which they have at the start of the course and serves to build an open and supportive learning network (Janse van Rensburg & Le Roux, 1998:37; see also 6.2.1).

5.3.3.6 Personal and professional development

Narrow interpretations of and an overemphasis on skills' development is critiqued for its technicist approach to learning and its role in maintaining existing structures, systems and processes of dominance in society (see 4.3.2). This has motivated the focus in the South African NQF on applied competence encompassing practical, foundational and reflexive competence (see 1.5.4 & 4.3.2). Certain skills or specific practical competences could go a long way in supporting an engagement within reflexive processes and is seen as one of the integrative elements of reflexive competence.

In the RU/GF course, many participants note a range of useful work-based skills that they have developed throughout the course (Janse van Rensburg & Le Roux, 1998:101). These include, amongst others, improved writing skills, improved computer literacy, improved workshop presentation skills, organisational skills, time management skills and the development of increased confidence stemming from an engagement within reflexive processes (*ibid*; Raven, 2000: 68). Processes to support the development of these skills are however not explicitly stated as course outcomes but are encouraged either to support other professional development processes or occur alongside other professional development processes. For example, encouraging improved reading and writing skills intends to support participants in developing a critical perspective on practice (see 6.2.3 & 6.3.3). The following are examples of skills developing in support of other professional development processes: Improved computer literacy might be the result of participants' attempts to develop resources differently. Further, many participants develop improved workshop presentation skills, sometimes a key aspect of their work, as a result of having to present work during tutorial sessions (see 5.4.3). The latter examples are those of skills' development as unintended outcomes through the course. Various participants often cite the development of increased confidence as an unintended outcome of their professional development experience in the course (Janse van Rensburg & Le Roux, 1998:87). As a significant feature of participants' personal development, the development of self-confidence often allows participants to share their own perspectives, open themselves to different perspectives and encourages them to try out new and different things (*ibid*:88). In this sense, Janse van Rensburg and Le Roux (*ibid*:87) note that '... developing confidence contribute[s] to doing their jobs properly and fully, and in some instances, to working

critically and even to challenging the *status quo*'. In this sense, what might be referred to as 'soft skills' - not explicitly addressed through the course outcomes - appears to play a significant role in encouraging ongoing participation in reflexive processes.

5.3.3.7 Integrative elements of reflexive competence

Section 3.7.2 introduces the various elements of reflexive competence that are described as 'integrative' elements of competence supporting an ongoing engagement within reflexive processes of change over an extended period of time. The discussion above links these integrative elements to the themes in the RU/GF course that intends to support a reflexive review in / of practice. As previously noted, and as reflected in the use of the verb 'integrative', these elements of reflexive competence should not be seen as distinct capabilities. Reflexive competence is rather seen as the 'coming together' of these integrative elements of competence culminating in an engagement in reflexive processes. For example, challenging existing and dominant constructions of environmental issues and risks requires an exploration of socio-historical factors shaping thought and action in context, it requires drawing on various theoretical perspectives to inform a critical review of these existing and dominant constructions, it similarly draws on a range of social actions and interactions in exploring different ways of knowing and doing, culminating in a diverse range of practical skills to work with and enable some of these options for change.

Janse van Rensburg and Le Roux (*ibid*:105) cite the following example that reflects the connectedness of vocational skills-based aspects of professional development, confidence that may accompany this competence, and the deeper, more critical, praxiological engagement with practice that might enable processes of change:

If individuals begin to feel more confident with using a computer, this could enable them to embark on processes of developing their own resources, which challenges the preconceived idea that only 'experts' can produce useful resources. This could in turn encourage individuals to start questioning why it is that we believe only experts could develop resources and so become conscious of an ideology underlying the construction and maintenance of dominant expert systems and structures. Through the empowering experience of having developed their own resource, the individual might feel in a position to challenge this dominance of 'expert' driven practices and so contribute in a small way to processes of social change.

The two examples above highlights the integrative nature of the elements of reflexive competence that 'come together' to support processes of destabilising existing and dominant thinking and practices to expose options for alternative thought and action.

5.4 COURSE PROCESSES AND FEATURES ENABLING AN ENGAGEMENT IN REFLEXIVE PROCESSES AND THE DEVELOPMENT OF REFLEXIVE COMPETENCE

The RU/GF course encourages the development of various integrative elements of reflexive competence as introduced in section 5.3.3 through a range of course processes and features. Section 1.3.2 and 3.5.2.1 briefly introduced these course processes and features. The following section explores these in further detail and highlights the opportunities inherent in these for supporting the development of these integrative elements of reflexive competence. These course processes are discussed generally in the context of the RU/GF course and the more specific ways in which these play out in the cases of the three tutorial groups is further discussed in section 6.2.3.

A central feature of the course is work-based assignments that encourage and support participants to critically and reflexively review practice. Participants engagement in reflexive processes are guided through these work-based assignments, through encouraging a critical and reflexive review of thought and action in environmental education processes in context and an exploration of more effective ways of responding to the increasing scale of environmental issues and risks. Various other course features (workshops, tutorials, course materials and assessment processes) support the work-based assignments and also the development of the integrative elements of reflexive competence. As in the case of the integrative elements of reflexive competence, the various course processes cannot be viewed as individual instances in the course through which an engagement in reflexive processes is enabled. These various course processes and features similarly have to be viewed as 'coming together' to support participants' engagement in reflexive processes and the development of reflexive competence.

5.4.1 Work-based assignments

Janse van Rensburg and Le Roux (1998:50) note that the primary role of assignments is to encourage participants to engage more fully with the course and to engage within the theoretical ideas to which they have been introduced on the course in relation to their practice (see 5.4.4). The role of assignments in the course (see 12 & 13 for the set of assignments for the general course and the industry course, respectively) is described further as '... provid[ing] the conceptual framework to understand and shape our practice' (DF8, obs. notes, ECTG - 22 –

23/01/00). Participants in the course find assignment writing of most value in the course but also often the most challenging aspect (Janse van Rensburg & Le Roux, 1998:51). This is reflected in the following statements made by past course participants. Rob Dyer (cited in Janse van Rensburg & Le Roux, 1998:51) notes that the assignments ‘... challenged me, developed me, gave me goals and ideas for my future’. Another participant, Kate Davies (cited in Janse van Rensburg & Le Roux, 1998:51) notes that ‘... the last assignment made way to the initiation of many projects in the workplace ... I have never done anything which has been of such practical value ... each assignment has been extremely useful in my work’. What participants in the course value most about the process of developing assignments is the way in which these feed back into the work they are doing. For example, for assignment four Songezo developed a community-based programme, attempting to address the issue of waste in his community (DF10, C5; see also 6.4.5). Daniel developed a resource to be used in the meetings with the local community with whom he interacted during six monthly meetings and Cathy redeveloped a programme for her fieldtrips that she undertook with her school learners (DF10, C4 & C3; see also 6.4.4 & 6.4.3). As such the process of developing assignments in the context of the course is of relevance to participants and does not become an abstracted academic exercise (see 5.3.3).

Over the duration of one-year participation in the course, participants are expected to complete five, and in the case of industry course participants, four assignments (see appendix 12 and 13, respectively). The completion of all assignments is one of the primary certification requirements and failure to complete all of the assignments is often the reason for withholding certificates at the end of the course (Janse van Rensburg & Le Roux, 1998:50). All participants, in both the industry and the general course, are required to complete a pre-course assignment (see 3.6.3). The aim of this pre-course assignment is to explicitly locate the participants’ work in the context of learning in the course (Janse van Rensburg & Le Roux, 1998:38). Further course assignments reflect a progression from encouraging participants to reflect critically on the issues and risks that confront them in context and on the ways in which they currently respond to these issues and risks, to developing a programme or resource that encourage more effective responses.

Assignment one requires participants to explore the nature, causes and impacts of one or more environmental issues and risks that is / are of concern to them in their context (see appendix 12.1). Through this first assignment, participants begin to grapple with existing constructions of environmental issues and risks and their root causes and they begin to explore other possibilities for understanding the nature, causes and impacts and ways of responding more effectively to these issues and risks. Assignment one provides opportunities for engaging with unawareness or what Beck (1999:123) also refers to as ‘... potential knowledge’. Assignment

two requires participants to critically analyse the aims and objectives that underlie current environmental education programmes and to reflect critically on the principles that inform this programme (see appendix 12.2). Through this assignment participants begin to consider their current practice and explore some of the socio–historical factors that have come to shape current practice. Through this process of assignment two, some of the limiting factors are identified and participants begin to identify factors that inhibit change. For some participants this assignment becomes a process of exploring new and different aims and objectives that might come to guide more effective environmental education processes in context. Assignment three encourages participants to reflect critically on the methods and processes inherent in current practices and explore the theoretical ideas that inform or are reflected in these methods and processes (see appendix 12.3). Through this assignment and drawing on theoretical perspectives to which they are introduced in the course, participants are encouraged to consider critically what they do, how they do it and why they do it in this way. As with assignment two, this third assignment encourages participants to begin a critical review of the unconscious preconditions of their actions and how ways of thinking and doing come to be structured through various socio-historical influences. In both assignments the reflexive intent, that of understanding what shapes thought and action to explicate factors inhibiting change and opening up potential for new and different ways of thinking and doing, is less explicitly stated in the assignment instruction and appears to similarly be dealt with less explicitly through other course processes (see 7.3). This intent is however implied through a focus on the question of ‘why’ that underlies practice in both assignments. However, as noted before, an exploration of what shapes practice is at times compromised by an overemphasis on the practical aspects of describing what and how practice is constituted.

These three assignments form the basis of assignment four, that requires participants to develop or to redevelop a course, programme or resource material, in response to the issues and risks that they have identified in assignment one (see appendix 12.4). This assignment could be seen as the one in which the integrative elements of reflexive competence culminate in changed orientations and approaches to environmental education in practice.

In the case of the industry course, assignment one similarly deals with the exploration of environmental issues and risks in the context of industry (see appendix 13.1). As with the first assignment in the general course, this assignment calls for participants to explore the nature, causes and effects of environmental issues and risks in their industry context. This exploration is supported by the core texts providing the critical lens through which participants are encouraged to review their practice. Assignment two encourages an exploration of the strengths and weaknesses in the environmental management systems of the individual’s organisation and to reflect critically on the role of environmental education and training within

these systems (see appendix 13.2). Similar to the general course, assignments in the industry course is intended to encourage participants to better understand systems, structures and processes that have shaped practice in environmental education and in an environmental management context. Assignment three in the industry course encourages the development of an environmental education course, programme or resource material (see appendix 13.3). Industry course participants are encouraged to develop this course, programme or resource material within the competence framework of the NQF, since this is a key theme running through the course⁸. Similar to concerns raised above with respect to the limitations of assignment instructions in the general course, the assignments for the industry course also appear to strongly encourage a description of current practice. Emphasis on 'why' is less explicitly stated in the assignment instructions, an area that could potentially be addressed to strengthen the reflexive intent of the course (see 7.2).

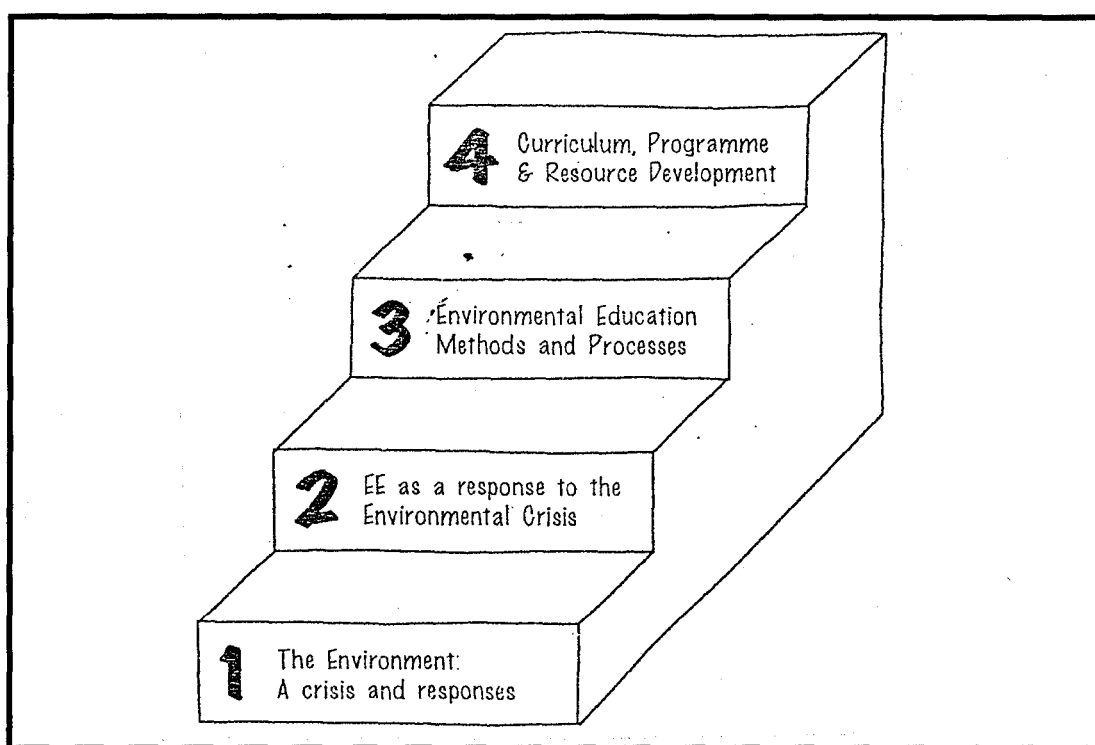


Diagram 5.2 Diagram used to describe the progression of assignments in the course, linked to the four course themes.

In the course materials the course assignments are presented as a set of building blocks reflecting the progression of the assignments from one to the other, and linked to the four course themes (see diagram 5.2 & 5.4.4). As participants move through the course, ideas and perspectives introduced in assignment one are drawn on in assignment two and assignment three. An exploration of assignment three draws on the ideas and perspectives developed in

⁸ As the industry group of participants were more focused on the NQF requirements, learning processes in the course attempted to respond to this focus, encouraging participants to develop courses, programmes and resources linked to the competence based framework of the NQF.

assignments one and two. These ideas and perspectives form the basis for developing the course, programme or resource material to be developed in assignment four. Alison Kelly, one of the tutors in the course describes this progression as: standing for a while on step one, moving to step two and having to move back to step one to revisit and draw on the ideas and perspectives introduced here (Personal Communication: Kelly, 1998). This back and forward movement eventually leading participants to the last step of assignment four, supporting the development of changed orientations to practice.

Participation and deliberation within the process of developing assignments is encouraged in two ways in the course. Firstly, in the development and presentation of initial ideas and perspectives to fellow course participants and tutors at tutorials (see 5.4.3). These presentations often take the form of a 'mindmap' reflecting initial ideas and perspectives, around environmental issues and risks and processes through which to respond to these. These presentations allow opportunities through which participants in a tutorial group can collectively reconstruct ways in which contextual environmental issues and risks are understood and the processes through which they are responded to. This in a sense challenges the individualistic emphasis of Giddens' (1979:244) structuration theory and supports Loyal (2003:40) and Delanty's (1999:171) argument for recognizing collective agency in reflexive processes (see 1.5.1). Through this process of engaging in a critical conversation around contextual environmental issues and risks and responses, participants often gain confidence to engage with others in reconstructing ways of thinking about and acting in the context of environmental education through sharing and collectively interrogating different perspectives (see 5.3.3). Based on these collective discussions and ideas generated through these discussions, participants are then encouraged to work assignments into a first draft (see 5.4.5).

This written presentation of ideas and perspectives is the second level at which participants engage with developing assignments. These first drafts are sometimes circulated amongst fellow course participants that reflects another way in which collective agency is encouraged through the course. Assignment drafts are then assessed by the tutor or tutors for that region (see 5.4.5). Participants are encouraged to rework initial ideas and perspectives based on emerging and developing insights through deliberations amongst participants in the regional tutorial group (see 5.3.3). This process of collaborative exploration appears to support participants in coming to understand the 'real' nature, causes and impacts of contextual environmental issues and risks and in exploring appropriate educational responses to these. For example, Cathy initially struggled to define an issue that concerned her in her school context (DF8, obs.notes, WCTG-17/10/99). Cathy's initial focus was on the issue of water wastage as she observed this in her school context. She also felt strongly about issues of waste management at the school. Through beginning to reflect on the issue that really

concerned her in the school, she came to see the issue as broader than simply issues of water or waste management and began to articulate her concern around learner responses to the natural environment when participating in school excursions. Through deliberations with fellow course participants and the tutors of the regional group, she began considering the issues of a lack of environmental awareness amongst learners at the school from different perspectives. In the first draft of assignment one she described the environmental issue of concern to her in context and to which she was exploring more effective responses as '... more of a personal account of my own role in [environmental education]' (DF8, obs.notes, WC – 17/10/99). She then framed the issue as '... school leavers are not environmentally literate and active citizens' in an attempt to explore processes through which she could encourage learners to become more involved in processes of addressing contextual environmental issues and risks (DF10, C3). Songezo, in the first draft of his assignment one described waste in a very general sense with little specific reference to the issues of waste in his community, which were the issues that would form the focus of his assignment work (DF10, C5). In subsequent drafts, based on feedback from, and deliberations amongst participants in the ECTG, he discussed issues of plastic waste more specifically as he and the community encounters it. Vasintha further notes that '... tutorial discussions made assignment writing a lot easier ... the discussions helped a lot because it gave me other perspectives (DF2, rj).



Diagram 5.3 Anton orally presents his assignment to the rest of the WCTG participants.

Assignments provide participants with the space to explore knowledge about environmental issues and risks not yet known to them (see 1.5.1 & 5.2). It similarly, supports participants in

breaking through and moving beyond the boundedness of consciousness towards possibilities for better and more effective ways of responding educationally to environmental issues and risks in context (see 1.5.1). These processes of exploring unawareness to open up possibilities for change in the way in which environmental issues and risks are thought about and responded to are supported by various theoretical perspectives, from literature shared in the course and through interactions and deliberations amongst course participants. The final assignment in the course provides participants with the opportunity to work further with the possibilities explored in the former assignments in developing an environmental education course, programme or resource materials for use in context and that attempts to respond to contextual environmental issues and risks.

The aim of assignments, that of supporting a reflexive exploration of more effective ways of responding educationally to environmental issues and risks in context, differs with the more traditional role of assignments that at times have as a primary, and sometimes exclusive function, the assessment of what learners have learnt through a course (Janse van Rensburg & Le Roux, 1998:50). Initially in the course, some participants experienced difficulty with the particular orientation to assignments. For example, Daniel's first draft of assignment one was written as a technical report on the environmental issues and risks associated with open cast mining (DF10, C4). In this assignment he drew on impact assessment studies in his discussion and as a result, used lots of technical jargon. He notes that he found it '... very difficult to move away from a technical discussion to a more interactive discussion in the assignment' (DF10, C4). He notes that '... it was a challenge for me ... a change ... I am very used to writing exams and getting my pass mark', but as the course progressed '... I was becoming more at ease with writing them [assignments]' (*ibid*). Most participants, having their educational experience deeply rooted in traditional education practices, struggle with the process of assignment writing at the beginning of the course (see 6.2.3). Most participants, however, break through this barrier and come to see assignment writing as a conversation about their practice aimed at clarifying their thinking and doing. Vasintha notes that initially she attempted to write her assignments '... like any tertiary assignment, using flowery language' (DF10, C2). She found this style '... all wrong and not reader friendly', making the process of assignment writing a tedious one (*ibid*). In developing her second assignment, she opted for more of a conversational writing style that '... made the process of writing assignments a bit easier' (*ibid*).

Through the course almost all participants note the development of broader perspectives on the environment, environmental issues and risks and environmental education processes as a benefit in the course (Janse van Rensburg & Le Roux, 1998:79; Raven, 2000:69). These broader perspectives on environment, issues and risks are often reflected in participants' assignments, as they write about the nature, causes and impacts of contextually relevant

environmental issues and risks and present these ideas to fellow course participants (see 6.3.1). For example, Songezo begins to explore the issues around waste by apportioning responsibility for poor waste management practices squarely on the Grahamstown East community (DF10, C5). As he begins to explore the issue of waste in more detail he begins to recognise the role of the local municipality in addressing the issue of waste in this community. He then develops a programme proposed as a collaborative attempt between the municipality and the community to address issues of waste (see 6.4.5). Anton begins to question teachers' apathy towards environmental education in the school context and explores how environmental education has traditionally been dealt with in the curriculum to understand and develop appropriate responses to this apathy amongst teachers (DF10, C1). These developing perceptions of environment and contextual environmental issues and risks often result in participants developing different perspectives about their work in environmental education. Daniel, for example notes that the course assisted him in changing his perspective about the environment and the work that he does. He notes that '... the environment that I saw was the little bugs and water ... there is a lot more to the environment than what I saw' (DF10, C4). In his assignment work he notes some significant socio-economic issues arising from the displacement of communities as a result of the open cast mining system (*ibid*). Consequently '... the vision that I have for [environmental education] has changed ... at first I didn't think that education was needed' but he sees it playing a significant role in supporting the company and representatives' interaction with the community around common environmental issues and risks (*ibid*). Cathy similarly notes that she had not thought about the environment before '... as being not only the bio-physical' and in assignment one, for example, explores the materialistic nature of society as contributing to the lack of environmental literacy amongst learners (DF10, C3). Cathy's initial approaches to environmental education in her subject context were to take learners on fieldtrips to encourage them to appreciate the natural surrounds of Cape Town. As she moved through the course she began experimenting with other approaches that attempted to encourage learners to become more involved in minimizing environmental impact in their household, school or community (see 6.4.3). Vasintha joined the course thinking that environmental education processes could be equated with science education and expected that the course would assist her in developing the school garden (DF10, C2). She feels that her perspectives on environmental education have changed and she has started to see environmental education outside of the scope of science education (*ibid*). These examples reflect participants beginning to experiment with alternative constructions of the environment, environmental issues and risks in context and different ways through which they approach environmental education in their professional context through assignment work (see also 6.3.1).

Both assignments two and three, supported by the core texts and course readings, encourage participants to begin to explore how thinking and action have come to be shaped within context.

For example, theme two explores environmental education as an emerging response to the environmental crisis. This theme focuses on the development of various approaches and orientations to environmental education and provides participants with an overview of ‘... how these ideas are influenced by people who developed them, the time during which they were developed and by their institutional location’ (Rhodes University Environmental Education Unit, Core Text Two, 1999:10). Intended as a framework of analysis this core text supports assignment two as participants are required to try to understand the historical and institutional factors shaping the work that they do in environmental education. Participants are encouraged to do this through an exploration of the institutional aims and objectives for environmental education in their context. The core text also introduces participants to two sets of international principles for environmental education to be used as an additional analytical framework for reflecting critically on current environmental education aims, objectives and practices. Theme three and assignment three similarly encourages participants to explore critically the assumptions that shape current practices as they explore possibilities for alternative approaches in environmental education (see appendix 12.3). From the above examples it becomes evident that the intention to support an understanding of practice within socio-historical context is intended through assignment work supported by core texts. However as noted before, assignment two is introduced with the instruction to briefly describe any environmental education programme and to describe the issue to which this programme is intended to respond (see appendix 12.2). Following this, the assignment encourages learners to outline the aims and objectives of the environmental education programme and describe how and why these were developed. Participants are also requested to draw on the international principles to reflect on these aims and objectives. Assignment three similarly encourages participants to describe the methods and processes used in an environmental education programme and to explain how *and why* these methods and processes are used. It could be argued that the intention to encourage participants to explore critically constraints to effective environmental education processes and so open up possibilities for more effective responses is implied in the assignment instruction, coupled with the critical perspectives brought through the core texts. It does however appear that as participants engage with these assignments, descriptions of practice take precedence over the critical exploration of constraints and opportunities implied in the assignment instruction (see 6.3.3 & 6.3.4). For example, the average length of assignment two amongst participants is six written pages as in the case of Vasintha and Cathy (DF20, C2 & C3). Most of the assignment deals with a description of practice with a description of how and why the aims and objectives were developed discussed in approximately one and a half pages. In these descriptions of why the aims and objective were developed in this way, which should provide some insight into the institutional factors shaping practice, more emphasis is placed on how these were developed. This might be because participants are more comfortable with exploring and thinking about what they do and might experience more difficulty in exploring why

they do it this way. However, in these descriptions these two participants do begin to explore some of the limitations in practice. For example, Vasintha notes that the aims and objectives were developed without involving parents at the school, which makes it difficult then to hone in parental support for the programme (DF10, C2). Cathy, for example, notes that in her programme she ‘... need[s] to make issues more complex and relevant and lead learners to action’ and ‘... there needs to be a greater interdisciplinary approach’ (DF10, C3). These explorations appear to reflect ways in which participants begin to identify potential areas for change and so begin to reflect processes of engaging in reflexive processes. It would appear that the intention of supporting an understanding of practice in context needs to be foreground in the assignment instructions and further supported through other course processes. It might, for example, be necessary to explicitly include the intention to explicate socio-historical factors that have come to shape practice in the assignment instruction (see 7.2). This process might then be further supported by feedback in assessment processes through which tutors encourage and challenge participants to undertake this exploration (see 5.4.5 & 7.5). This might then also require increased tutor professional development to better support participants in exploring the social epistemology embedded in practice (see 1.5.1, 1.5.5 & 3.5.1).

All assignments, particularly assignment three, support participants in critically reflecting on the unconscious preconditions of knowledge and action in context. As noted before, assignment three focuses on the what, how and why of practice. In support of assignment three, core text three introduces participants to ‘... some of the more influential ideas in education, development and evaluation out of the situations from which they come’ (Rhodes University Environmental Education Unit, Core Text Three, 1999:3). Intended as an analytic framework this core text is meant to support participants in reflecting critically on the powerful ideas that steer and justify the way we do things. The intention being to encourage an exploration of different ways of interacting with / within knowledge frameworks and challenging conventional norms in teaching and learning. Many participants in the course, through assignment three begin to identify patterns and trends in practice. Anton, for example describes the teaching and learning approaches at the CCE as encompassing mainly fieldtrips and ‘... the verbal transmission of facts’ being ‘... mostly influenced by the behaviourist and constructivist educational theories’ (DF10, C1). In some cases limitations in practice are identified as for example in Anastelle’s description of the presentation of research results in her programme being ‘... applied in isolation from other important factors such as people’s perceptions of the environment and indigenous knowledge’ (DF10, C6). She describes approaches of using flip charts and talking as having ‘... a top-down upliftment approach that is expert driven’ (*ibid*). In this assignment, participants however appear to focus mainly on a critique of what is currently done and less attention is given to exploring why they do things the way they do, as a way of exploring the constraints to change and opening up possibilities for thinking and doing differently (see 6.3.3).

For example, as part of assignment two Anton critiques the principles underlying the aims and objectives of the CCE (DF10, C1). He feels that he will ‘... surely have to look ... at the principles of our Centre with some guidelines from the international arena’ (*ibid*). Follow up assignments do not integrate this critical exploration of the aims and objectives of the programme. Similarly, Anastelle, in her assignment work, adopts a questioning approach to issues raised for discussion. For example, she questions whether ‘... environmental education can serve as a solution’ to ‘... the unsustainable use of natural resources in communal areas’ (DF10, C6). Further assignments and discussions however do not offer a response to these questions (*ibid*). In this sense, Jane comments on an instance in the ECTG where participants were commenting on each others ideas for assignment four, which came down to ‘... criticising (about what is being done) ... [more] ... than being critical (questioning why we do things)’ (DF8, obs. notes, ECTG-10-11/03/00). Usher *et al* (1997:135) recognises the crucial role that critical reflection comes to play in reflexive processes. Examples drawn on above reflect that participants in the course do engage with processes of critical reflection. There does however appear to be opportunity in course processes to better support processes of critical reflection in the context of engaging in reflexive processes (see 6.3.3).

The process of developing assignments provides the space within which participants can begin to work with the praxiological orientation offered through the course (see 5.3.3). Participants explore environmental issues and risks and responses, supported by course materials, consisting of core texts and course readings (see 5.4.4). These course materials are intended as critical lenses for reflecting on practice to understand the constraints to change and so open up possibilities for working differently. In writing assignments participants are encouraged to reference some of these readings, to reflect an engagement with readings and link these theoretical perspectives to practice. Data gathered in the context of the course reflects that most participants refer to and draw on the theoretical perspectives introduced through the course (see 6.3.4). For example, in assignment one, all participants refer to the O’Donoghue model (1995:8) in analysing environmental issues and risks and all make reference to the social, economic, political and bio-physical dimensions of environmental issues and risks. In assignment two, the theoretical perspectives primarily used are the international principles presented in the course materials and those that participants are explicitly requested to use as an analytical framework in the assignment instruction (see appendix 12.2 & 13.2). Assignment three requests participants to describe methods and approaches used in context, using the theoretical perspectives introduced around various learning theories. Dominant trends reflected in these assignments are the use of theoretical perspectives mainly as ‘labels’ with which to describe and justify approaches within practice (see 6.3.4 & 6.4.7). This trend has not only emerged in the initial research that I undertook (Raven, 2000), but also strongly emerges in this

current research and in past research undertaken in the context of the course (Janse van Rensburg & Le Roux, 1998; Heylings, 1999; Jenkin, 2000; Molose, 2000; see also 5.5).

Many participants struggle with the issue of praxis in the course and this struggle is often reflected in assignment work. Anastelle notes that she found it particularly difficult to relate theory to practice and appears in assignment work to opt for either a practical approach or a theoretical approach (DF10, C6). For example, she notes that assignment one required a description of the issue and did not need the complication of technical theoretical terms (DF8, obs. notes, WCTG-06/11/99). In the following assignment she adopts a theoretical discussion of the shortcomings of the existing environmental education programme and makes theoretical suggestions in response (DF10, C6). For example, she motivates for environmental education programmes that are '... holistic ... encouraging people orientated solutions to unsustainable natural resource management' though suggests no practical aspects of implementing such an approach (DF10, C6). Similarly, in assignment two Daniel draws on the environmental policy of his company to describe the strengths and weakness of environmental management processes (DF10, C4; see also 6.3.4). He appears to struggle with analysing how this environmental policy translates into practice (*ibid*). Songezo similarly reflects a struggle with the idea of praxis in assignment three where he undertakes a theoretical discussion of the various educational orientations as they are presented in the course materials and appears to struggle with relating these ideas to his practice (DF10, C5; see also 6.3.4).

Many participants in the course come from an educational context within which the separation of theory and practice is largely evident (see 2.3 & 2.4). Traditionally theoretical perspectives occupy a position of power and dominance in knowledge systems, structures and processes. Though participants in the course do reflect a measure of reflecting critically on education practices and attempt to identify and overcome limitations in practice (see above & 6.3.4), features of traditional educational practices emerge as they interact within environmental education processes. For example, many participants critique dominant, top-down and expert driven teaching and learning processes shaped by behaviourist orientations, though most of the proposals for change in environmental education processes in context reflect similar orientations (see 6.3.4 & 6.4). For example, most participants propose to share with others, the newly gained insights and knowledge on environmental issues and risks developed through the course (see 6.4.7). Another problematic emerging in the context of the praxiological orientation of the course is the use of, and interaction with theoretical perspectives introduced through the course. Most participants appear to use these theoretical perspectives as 'tools' through which they are better able to describe their practice. Songezo, for example, describes the workshops that he proposes for the community-based programme as being influenced by constructivist theories '... because it allows participation, discussions and construction of new ideas ...'

(DF10, C4). He further describes a poster as aimed at ‘... imparting ... information through transmission teaching’ (*ibid*). Vasintha similarly describes one aspect of her school-based programme as reflecting ‘... a traditional behaviouristic view ...that will allow learners the opportunity to develop “... some level of environment sensitivity that will promote a desire to behave in appropriate ways” ‘ referencing one of the course readings ‘... (H.R.Hungerford 1990:p53)’ (DF10, C2). Few participants appear to draw on these theoretical perspectives as critical lenses for analysing practice as they explore options for change. In this sense, different approaches to interacting with theoretical perspectives intended through the course appears to come into tension with traditional interactions with theoretical perspectives and seems to require explicit support in assignment work and other course processes (see 7.4). One example for possibly addressing this issue would be to explore with participants explicitly the intended use of theoretical perspectives in the context of encouraging an engagement within reflexive processes (see 7.2 & 7.4). In an analysis of participants’ use of theoretical perspectives in the course, it becomes evident that theory is used in the assignments, and sections of assignments where participants are explicitly pointed in the direction of using theoretical perspectives. This is the case for example, in assignment two and three as described above. Another approach that might then also support participants in their struggle with praxis could be to explicitly guide participants towards the use of theoretical perspectives in various sections of assignments (see 7.3).

The social construction of meaning is one of the key ideas informing the course (see 1.3.2). Moll (2002:17) describes the social construction of meaning as processes of actively constructing meaning that ‘... unifies and transforms innate (natural) and environmental (socio-cultural) processes into new, embodied forms of knowledge’. For Gergen (2001:119) a key feature of social constructivist learning theories is that all meaning is created in community with others. Processes of developing assignments provide various opportunities for the construction of meaning through deliberations amongst participants (see 5.3.3). In presenting assignments during tutorial sessions participants share ideas and perspectives, open these up for comments by other participants and refine these ideas and perspectives (see above). Through processes of deliberation, participants are exposed to different perspectives that challenge and shape understandings and perspectives. In this sense participants learn from, and in interaction and deliberation with each other and thus come to challenge the notion of dominant expert knowledge. Participants also share written assignments with each other, which helps them to clarify ideas and perspectives. Anton notes that he found the process of sharing his assignment with Olwen, a fellow course participant, to be a very valuable experience (DF10, C1).

Through the process of developing assignments, participants develop a range of skills that support their personal and professional development and ultimately the work that they do (see

5.3.3). For example, Cathy's first two drafts of assignment one were hand written (DF10, C3). In reworking this draft she opted for preparing a word-processed copy, and notes the value in reworking this assignment as giving her the opportunity to improve her computer skills (*ibid*). Through the process of assignment writing, participants are also given the opportunity to develop the skills of structuring an argument in a clear and concise manner, which assists them in clarifying their own thinking. For example, Vasintha notes the value of using subheadings in her assignment, which allowed her to develop more clarity on the issues she was discussing and helped her to '... structure and separate the cause and effects' (DF10, C2). Daniel similarly notes that the process of assignment writing helped him to develop a different and useful style of writing that is more appropriate to certain aspects of his work (DF10, C4).

As reflected in the discussion above, the process of developing work-based assignments encourages participants to engage within reflexive processes of change and to develop a range of integrative elements of reflexive competence. As reflected in section 5.3.3 these integrative elements of reflexive competence demands an intense and critical engagement with knowledge structures, systems and processes that often come into conflict with the social conditioning resulting from traditional educational experiences (see 6.4.7). There does therefore appear to be the need to more explicitly and carefully support participants' engagement in reflexive processes and so support the development of the integrative elements of reflexive competence.

5.4.2 Workshops

For the duration of the course three national workshops are held (see 3.5.3.1). Workshops generally serve to introduce participants to the theoretical ideas in the course and encourage interaction amongst the bigger group of participants. All participants generally attend these workshops and the total number of participants in workshops is approximately seventy-five (see 3.5.3.2). These workshops are normally held at different venues around the country to provide participants with insight into various contexts within which environmental education processes are undertaken (*ibid*). For example, the first workshop in the 1999/2000 course was held at Rhodes University in the Eastern Cape, where the Environmental Education Service Centre, the co-ordinating unit of the course is located. The second workshop was held at Umgeni Valley, in Howick, Kwazulu Natal, where the Sharenet Resource Development Network is housed and the third workshop was held at Delmas Environmental Centre in Mpumalanga that facilitates environmental education programmes for visiting school groups. Workshops are also generally held over a weekend, starting on the Friday evening to the Sunday afternoon. The timing of workshops is to accommodate the course in the work programme of participants and weekends provide an extended period over which participants are able to interact within the larger group of participants.

Workshop one is held at the start of the course and generally serves to introduce participants to the course orientation, aims and structure. At this workshop participants are similarly introduced to fellow course participants and are encouraged to introduce their work to each other. Participants receive the course file containing the course materials at this first workshop (see 5.4.4). Most participants find the file intimidating at first. The course file contains a set of introductory notes, which are used to introduce participants to the reflexive orientation, aims and processes in the course. In this introduction the key ideas informing the course are briefly introduced to participants (see 1.3.2). Participants are provided with a brief overview of the nature and structure of the course and some of the practical details of the course (see 1.3.2). Participants are then also introduced to the four (or three for industry participants) assignments following on from the pre-course assignment (see 5.4.1). In particular, participants' attention is drawn to assignment four that can be described as a culmination of the various learning experiences provided for in the course (*ibid*). This introduction highlights the intended outcomes of the course, provides participants with an overview of the learning experiences provided in moving toward these intended outcomes and so provides a framework within which they can engage reflexively within environmental education processes. Participants are often overwhelmed by this introduction to the course and some even question whether they are in the right place and involved in the right course, at the right time. Daniel says that '... when I landed there, I was a little taken aback' (DF10, C4). Vasintha thought that the course would be more of a focus on gardening, supporting her garden project at school, and she notes that she went through a period '... where I wondered what I was doing here and do I fit in here' (DF10, C2). After this overwhelming introduction, and mostly after the first tutorial, most participants settle down and are able to see their way through the course (see 5.4.3).

Following this introduction, participants are introduced to the first two course themes (see 5.4.4) that contain the theoretical framework for critically reviewing issues and risks and responses to these in context (see 5.3.3). At the first workshop in the 1999/2000 course the theoretical perspectives of the first two themes were introduced by two of the tutors. Tutors are often drawn on to present various aspects of the theoretical ideas around which the course is structured. In some instances, students in the course are also requested to make some input into the programme (see below). If time permits, as was the case in the first workshop in the 1999/2000 course an excursion is arranged to encourage social interaction amongst participants, but also to expose participants to different methods and processes in environmental education. During the first workshop of the 1999/2000 course groups of participants explored the main streets of Grahamstown identifying environmental issues and risks that they observe here and thinking through the nature, causes and impacts of these. Further social interaction was encouraged amongst participants through introducing themselves, their professional context and work to fellow participants in regional groups (see

5.4.3). In summary, the first workshop generally deals with an introduction to the course orientation, an introduction to some of the theoretical ideas contained in the course curriculum and encourages social interaction amongst participants as reflected in the activities above.



Diagram 5.4 Participants gather for the second workshop at Umgeni Valley.

The second workshop is generally held midway through the course. Following the overwhelming experience of workshop one, this workshop focuses more on encouraging participants to interact with each other and share ideas about their work and their plans for future assignment work. At the start of the workshop, participants are encouraged to introduce ideas that have developed for assignment four and through this introduction, identify fellow course participants with similar interests to support the exploration of ideas for this assignment. Anastelle found this a particularly valuable experience, since she was the only participant in the WCTG with an interest in community-based programmes (DF8, obs. notes, NW-04-06/-2/00; see 3.5.2.2). During a sharing session she was able to share ideas with other participants, including Songezo, amongst others, who shared an interest in community-based environmental education programmes. During this workshop participants are also introduced to the theoretical ideas contained in course themes three and four. During the 1999/2000 course, various participants were drawn on to introduce participants to these theoretical ideas. These participants, made up of both students and tutors, were requested to prepare and act out a roleplay reflecting various orientations to learning (DF8, obs.notes, NW-04-06/02/00). For example, Sanele (a tutor for the Kwazulu Natal regional group) played the part of a 'traditional teacher' and he was '... going to teach you [learners] about the water cycle and catchments'

(*ibid*). In this roleplay Sanele seated all participants in rows and stood in front of them with a stick in hand used as a pointer to a chart on the water cycle. Through his actions and language he clearly reflected the message that learners did not know anything of the water cycle and that he was about to teach them and 'fill them up' with knowledge about the water cycle. In the same activity Petros and Drew (two students in the Kwazulu Natal regional group) facilitated a fieldwork learning experience. Here they used a worksheet to enable the learners to explore various aspects of the natural environment through observation. Jonathan (a tutor for the Kwazulu Natal regional group) facilitated an interactive workshop, based on the principles of social constructivism through which learners were encouraged to share perspectives around audits as a method in environmental education. Jonathan introduced the idea and then allowed a sharing of various perspectives around the use of audits in environmental education processes. Course participants were divided into groups and participated in each of these learning activities. These roleplay sessions were followed by group discussions of the values and assumptions inherent in these approaches. The intention of this activity was to introduce participants to various approaches to teaching and learning in environmental education and also to begin a conversation about some of the assumptions that shape education practice. This activity was particularly significant in attempting to reflect a challenge to expert driven learning processes, since a mix of students and tutors facilitated this session.



Diagram 5.5 Sanele role plays the presentation of a lesson during the second workshop.

The second workshop is almost always held at Umgeni Valley, which is not 'pure' coincidence. Most participants come to this workshop with some idea of what they are planning to do for

assignment four and are able to crystallise these ideas through interaction with other participants over the weekend. During this workshop time is usually set aside for participants to visit the Sharenet offices, where participants are exposed to different resources and programmes, some of which had been developed by participants in prior courses. This process allows participants to further explore options for assignment four and in many cases gives participants the confidence that they too can produce resources for use in their context. Daniel noted the impact that this visit had on him, since he could never have imagined himself '... taking on something like this' (DF10, C4). He notes that this gave him the confidence to undertake the project of assignment four, just like other participants have done, reflected in the examples that he has seen (*ibid*).

The third workshop is held at the end of the course. At this workshop participants are required to do two presentations. Firstly, they present their joint group assignment that they develop as part of assignment three (see appendix 12.3). The second presentation involves their individual course, programme or resource materials that they have developed for assignment four (see 5.4.1 and appendix 12.4). These courses, programmes and resources are usually on display over the weekend for other participants to view and time is set aside for participants to discuss the various projects. This workshop is normally concluded with a certification ceremony that signals the end of the course, to the disappointment of many course participants.



Diagram 5.6 Songezo discusses his waste management plan with a fellow course participant at the final workshop.

The workshops in the course are a significant aspect of course processes in the sense that it introduces participants to a valuable learning network established through participation in the course. During workshops participants are introduced to, and interact with participants from different geographical areas, different professional contexts, different cultures, and so on, which might not be provided for in the regional tutorial groups. The workshops similarly enable a broader scope of shared perspectives amongst the group of course participants, thus supporting participants in their exploration of making meaning of environmental issues and risks and responses through environmental education. These workshops do not only create, but also maintains this broader learning network amongst environmental educators across the country. This learning network often continues beyond the duration of the course. Participants, at the end of the course are given a list of all course participants and contact details, which supports participants in maintaining contact within this learning network. Many participants have noted the value of participation in this learning network as a process of ongoing support to the work that they do in environmental education, beyond the scope of the course. This learning network becomes particularly significant in sustaining an ongoing reflexive approach to practice, which supports the longer-term character of participation in reflexive processes and the development of reflexive competence.

5.4.3 Tutorials

Workshops introduce participants to the key theoretical ideas in the course and encourage participants to link these ideas to practice in the exploration of alternative approaches to environmental education (see 5.4.2). However, as participants attempt to do this through work-based assignments tutorial processes come to play a significant role in supporting participants' engagement within reflexive processes (see 5.4.1). Within these tutorial meetings participants come to interact more closely with / within the course processes and the learning network that supports professional development. In this sense, Janse van Rensburg and Le Roux (1998:48) note that tutorial meetings are an opportunity for participation and more in-depth critical engagement with the course.

Tutorial groups are made up of participants in a particular geographical region or a group of participants from a particular professional context (see 3.5.3.2). In the 1999/2000 course there were six regional groups and one for industry course participants. The regional groups consisted of participants from the Western Cape, the Eastern Cape, Gauteng Province (including participants from the North West Province), Kwazulu Natal, Mpumalanga and the Limpopo Province. The size of these regional groups range from between five participants, as in the case of the Limpopo Province tutorial group to seventeen participants in the Kwazulu Natal regional group. Each tutorial group is assigned at least one tutor. In the case of larger

groups and in the case where circumstances allow two or more tutors are assigned to a group. For example, given the size of the Kwazulu Natal regional tutorial group, three tutors were assigned to this group. In the three tutorial groups with which I worked in this research the Eastern Cape regional group had six participants, the Western Cape regional group had seven participants and the industry tutorial group had four participants (see 1.4 & 3.5.3.2).



Diagram 5.7 *Jane and Lawrence, the tutors for the ECTG.*

Over the duration of the course, approximately ten tutorials, each approximately eight hours in duration, are held. Attendance at these tutorials as well as attendance at national workshops is another one of the certification criteria in the course (see 5.3.5). Tutorials are either held on single days or over a weekend depending on the needs and availability of participants in the various regional groups. Weekend tutorials appear to be most popular amongst course participants as it encourages social cohesion amongst participants and in this way strengthens the learning network (see 3.5.3.2). Some students work in physically isolated areas and value the added interaction provided for in tutorial meetings. In most regions, tutorials are held at different venues, often where participants work, to expose participants to the various professional contexts of fellow course participants and environmental education programmes. For example, in the 1999/2000 course the WCTG met at least once at each participants' place of work. In the Kwazulu Natal region, tutor Mike Ward notes that the hosting of a tutorial at various venues was a particularly valuable experience for participants as it encouraged the development of planning and organisation skills. He notes that '... Pius was amazed at discovering his own organisational abilities' when he arranged a tutorial at his place of work

(Raven, 2001:29). Though the responsibility of the regional tutor or tutors, the organisational aspects of arranging a tutorial is almost always shared between the tutor/s and the hosting participant. This aspect of organisation attempts to further encourage a challenge to expert and dominant positions in the course (see 5.4.2).

Linda Paxton, a former course co-ordinator believes that ‘... the course stands or falls on the strength of the tutors’ (cited in Janse van Rensburg & Le Roux, 1998:48). Given the role that tutorial meetings play in encouraging and supporting participants’ engagement within reflexive processes mostly through assignment work, tutors have an important role to play in the course (*ibid*). Since 1997 a meeting for tutors has been held at the start of each course to support tutors in undertaking their role of support in the course (Janse van Rensburg & Le Roux, 1998:50). In this meeting prospective tutors worked together through the course materials and share ideas around course processes that best support the professional development of participants. As such, tutors started the tutoring process with some common ideas on supporting the professional development of participants, such as sharing assignments in tutorials, commenting on assignments and supporting reading and writing in the course. Tutorial support in the past appears to have focussed primarily on the practical aspects of supporting course participants through the course. However tutorial support remains a key area that has been identified in the course for further improvement and some processes have been set in motion to improve tutor support in the course (see 5.5.3).

Tutors background and insight into the course orientation, aims and course processes appear to largely shape the support given to participants, through tutorial programmes and through interaction with participants (see 3.5.3.2 & 6.2.3). Tutors in the course are usually participants who have completed the course themselves or those who have similar experience in environmental education processes (see 3.5.3.2). For example, Jane and Lawrence were the two tutors in the ECTG in the 1999/2000 course. Jane did not do the course herself but completed a Masters Degree in Environmental Education. Lawrence, similarly, did not do the course himself but has been involved as a developer, co-ordinator and tutor in associated courses (see 1.3.1). As primary tutor for the WCTG, Wendy completed the course one year prior to taking up the role of tutor in this group (see 3.5.2.2). My own involvement in the course has been varied including tutor for the ITG and co-tutor in the WCTG (see 3.3.1). Tutors in the course are volunteers and as such are not paid for the role as tutor in the course. Many tutors however, undertake this role to further their own professional development, or to continue participating in an active, national learning network of environmental educators (see appendix 1).

As noted before and emerging out of past research projects, difference in the tutorial groups is evident both in terms of the programmes of support run by tutors and in terms of participants interaction within these groups (Janse van Rensburg & Le Roux, 1998; Raven, 2000). Similar findings have emerged in this research (see 3.5.3.2 & 6.2.3). For example, in the ECTG, Jane and Lawrence spent much time explicitly working around the key ideas informing the course (see 6.2.3). This explicit working with the key ideas informing the course and trying to give these effect through course processes, appears to have provided a solid framework within which participants were encouraged to engage within reflexive processes. Crudely put, it appears as if participants in this group were gently pushed towards different ways of thinking about environmental issues and risks and responses through their practice of environmental education. Jane and Lawrence similarly worked intensively with the process of reworking ideas through assignment drafts, and a clear progression of ideas was evident in an analysis of Songezo's assignments, for example (see 6.3.1 & 6.3.3). In the WCTG there appears to have been less emphasis on the key ideas informing the course. Course processes thus appear to have been shaped to a lesser extent by the reflexive intent of the course. In the ITG, I sometimes explicitly worked with the key ideas informing the course. Tutorial processes are not only shaped by the background and experience of regional tutors, but also by the needs and interests of participants. For example, in the ECTG Jane and Lawrence placed much emphasis on the development of writing and reading skills since this was recognised as a particular need amongst most participants in this group given the dominance of isiXhosa as a mother tongue (see 3.5.3.2 & 6.2.3). In the WCTG fires as an environmental risk dominated a range of tutorial discussions since the mountains in Cape Town were ravaged by disastrous fires in February 2000 (DF8, obs.notes, WCTG-17/10/00; DF8, obs.notes, WCTG-09/03/00). These differences created a different learning context for the various research participants and though the research reflects evidence of all participants engaging in reflexive processes of change, there are some lessons to learn from one tutorial group to the other (see 7.6).

Some general activities are undertaken at tutorial meetings to support participants' engagement within course processes as they explore more effective approaches in environmental education. These include the presentation of, and discussions around draft assignments discussion around core texts and readings and the negotiation of assessment criteria (see 5.4.1, 5.4.4 & 5.4.5; see also 6.2.3). In the various tutorial groups these activities are approached and supported differently (see 3.5.2 & 6.2.3). These tutorial activities, either individually or collectively, play a role in supporting the development of assignments that provides the space for engaging in reflexive processes. For example, the explicit use of core texts during the tutorial sessions encourages the exploration of different understandings of environmental issues and risks and responses to these in context (see 5.3.3). Activities that support participants to reflect critically on the assumptions underpinning practice, drawing on theoretical perspectives introduced

through the course encourages a praxiological approach to learning and practice (*ibid*). Opening up ideas contained in assignments for deliberation and discussion support processes of shared meaning making as possibilities for different ways of thinking about and responding to environmental issues and risks are explored (*ibid*). In the smaller groups of tutorial meetings participants develop the confidence to share perspectives and engage more easily in the critical conversation around environmental education (*ibid*), more so than they would in workshops. Perhaps the most significant aspect of professional development reflected in tutorial groups is the participation and interaction of participants in a learning network that supports all other aspects of professional development. Participation and professional deliberation in this learning network exposes participants to alternative perspectives and encourages the process of a reflexive exploration of more effective responses through critical dialogue with others.

Tutorial support is probably the most significant of the course processes and features discussed in this section, since it is the one that incorporates and supports all others. Theoretical ideas contained in the core texts are introduced at workshops though tutorial support plays a significant role in supporting further interaction with these ideas and relating these to practice (see 5.4.4 & 5.4.2). Assessment processes are enacted and supported in the course at the level of tutorial groups (see 5.4.5). Readings and their role in developing work-based assignments are supported through these tutorials (see 5.4.4 & 5.4.1). From this one can deduce that tutorials are really the space in the course where all course processes are given effect and as such play a major role in supporting an engagement within reflexive processes and the development of reflexive competence.

5.4.4 Course materials

The course materials are contained in a ring bound file that has come to be known over the years as 'a living file'. Janse van Rensburg and Le Roux (1998:59) note that the choice of the file format was a '... considered choice' in keeping with the course orientation reflecting the view of knowledge as open-ended and contextual. The ring bound format allows for an easy adaptation of the course materials, resulting from a constant review of the course curriculum. Participants are encouraged to add to the file as they find additional resources of relevance to their particular context and as they progress through the course.

The course materials are introduced by an introductory text that contains the key ideas informing the course and information of the course content and processes (see 1.3.2). This introductory text is used to introduce participants to the course during the first workshop (see 5.4.2). In my observations in this research throughout the course, the introductory course materials are rarely used beyond introducing participants to the key principles and processes

underpinning the course. The contents in the introductory text are organized around three headings, namely the course, the file and the core texts. The section on the course provides a brief historical overview of the development of the course and follows on with aspects around personal and professional development. The section on 'the file' provides an overview of the contents of the course file and an overview of the four core texts (see below). These introductory texts are concluded with an overview of the perspectives from which the core texts have been written. In this section the key ideas informing the course are introduced, these being '... history, context, critical reflection, the social construction of meaning and the integrated nature of theory and practice' (Rhodes University Environmental Education Unit, Introductory Texts, 1999:10; see also 1.3.2). These key ideas are introduced as '... very big ideas' that '... through the course you will come to understand what they mean in practice' (Rhodes University Environmental Education Unit, Introductory Texts, 1999:10; see also 1.3.2). These ideas are presented in the introductory texts as a brief explanation and as a start to working within these ideas. Though the intention for course processes to be informed by these ideas is explicitly stated in these introductory course materials, two issues appear to emerge in the context of these key ideas. Firstly, the practical detail around assignments and assessment processes, and the novelty of these different approaches appear to dominate introductions to the course and appear to leave little time for discussing these key ideas in more detail with participants (see 5.4.1 & 5.4.5). Some participants appear to go through the course without a clear understanding of these ideas and how they intend to support an engagement in reflexive processes. For example, many participants interpret the idea of context as focusing mainly on their own and personal professional context (see 6.3.2 & 6.4.7). At times this is interpreted as 'all is okay' if it can be motivated as appropriate in context and possibilities for change are rejected (see 6.3.2 & 6.4.7). This particular key idea is introduced as encouraging a better understanding of environmental education processes through considering '... the history and broader social situations or context within which these have developed' (Rhodes University Environmental Education Unit, Introductory Texts, 1999:10). Some participants do reflect some exploration of socio-historical factors shaping practice, though it would seem that these key ideas that reflect the reflexive intention of the course needs to be more explicitly explored in the introduction to the course (see 6.3.2 & 7.2). The second issue emerges around the translation of these ideas into course processes. Tutors, in pre course meetings, generally explore some practical ways of supporting participants' engagement within reflexive processes (see 5.4.3). This however seems to be the point at which more support is required through which the key ideas informing the course can be *translated into* course processes. This appears to be a critical area of consideration as the course is further developed and is further discussed in section 5.5 and 7.6.

The rest of the course materials are divided into four sections, each relating to one of the four themes in the course. The course materials for each of the four themes contain a core text, presenting key concepts and theoretical ideas, an assignment relevant to that particular theme and a set of readings selected from popular and academic literature that provide critical perspectives on each of these themes (see 5.4.1). As noted above, participants are initially intimidated when receiving this bulky ring bound file at the start of the course. However, as they come to engage with the contents of the file, they begin to see it as a resource which they can use both in the context of the course and as a future resource in their practice of environmental education. One course participant in the 1998/1999 course, developing a distance education module for environmental education chose to use this format for his distance education materials (Raven, 2000:54). Another participant in the industry course of 1998/1999, described the file as ‘... a useful resource to be used in the future ... a useful format to share with colleagues’ (*ibid*). In the context of learning in the course, the course materials come to play a significant role in engaging participants within reflexive processes (see 5.3 & 6.3).

As indicated in section 5.4.1, the course is structured around four themes which has come to be described in the course materials as the ‘... the heart of the apple’ around which to develop ideas and perspectives (Rhodes University Environmental Education Unit, Introductory Text, 1999:10). Theme one entitled ‘The Environment: A Crisis and Responses’ introduces participants to changing perspectives on the environment and environmental issues and risks. This theme uses a model developed by O’Donoghue (1995:8; see diagram 5.8) that reflects the interrelated political, social, economic and bio-physical dimensions of the environment and environmental issues and risks (see 2.6). This theme further introduces participants to some of the underlying causes of environmental issues and risks⁹ and explores some of the shifts and trends, both globally and locally, in responding to these. Through this theme some of the potential causes of environmental issues and risks are exposed through reference to the social foundations, systems and structures on which modern life and the unprecedented drive towards economic growth, accumulation of material wealth and scientific innovation is premised. These ideas are intended to encourage participants to critically explore their own, and dominant constructions of environmental issues and risks in their own context as they begin to explore processes through which to respond to these issues and risks. Theme two deals with ‘Environmental Education: An Emerging Response within the Environmental Crisis’ and introduces participants to various definitions of environmental education that have been developed over the years. This theme introduces participants to the institutionally and socially

⁹ In attempting to encourage participants to explore the ‘root’ causes of environmental issues and risks (see 2.6), and to critically review the dominance of science in the understanding and construction of issues and risks, and in shaping responses to these issues and risks, this theme introduces participants to the unquestioned practices that emerge from within values and beliefs underpinning modernism (see also 7.3.1).

constructed nature of these definitions and to changing perspectives in the field. It similarly introduces some of the aims, objectives and principles that have been developed for environmental education by various international organisations and conferences. This theme supports participants as they begin to reflect critically on the history and social actions and interactions in context that have shaped the practice of environmental education. Theme three, 'Environmental Education Processes and Changing Theories within Education: Trends and Patterns' introduces participants to different theoretical perspectives underlying education practices. It presents a socio-historical narrative of how learning theories have influenced environmental education processes and methods, and introduces participants to key dimensions of educational thinking and practice, linking these to changes in practice in community development and evaluation settings. This theme intends to support participants in reflecting on the unquestioned assumptions that influence their work in environmental education. Theme three is the one theme that participants find particularly difficult to work with and over the years attempts have been made to improve this core text to make it more accessible to participants and easier to work with (see 5.5). Participants, however, continue to find difficulty in working with the ideas contained in this theme (see 6.3.4 & 6.4.7). Theme four, 'Curriculum Development: Resources and Programmes' provides some orienting ideas about curriculum and curriculum development processes. It further introduces participants to some of the trends in curriculum, resource and programme development and includes some examples of resources and programmes that have been developed in the past in the context of the course. Evaluation is also explored as an integral part of curriculum, resource and programme development. These are the four themes around which the general course is structured.

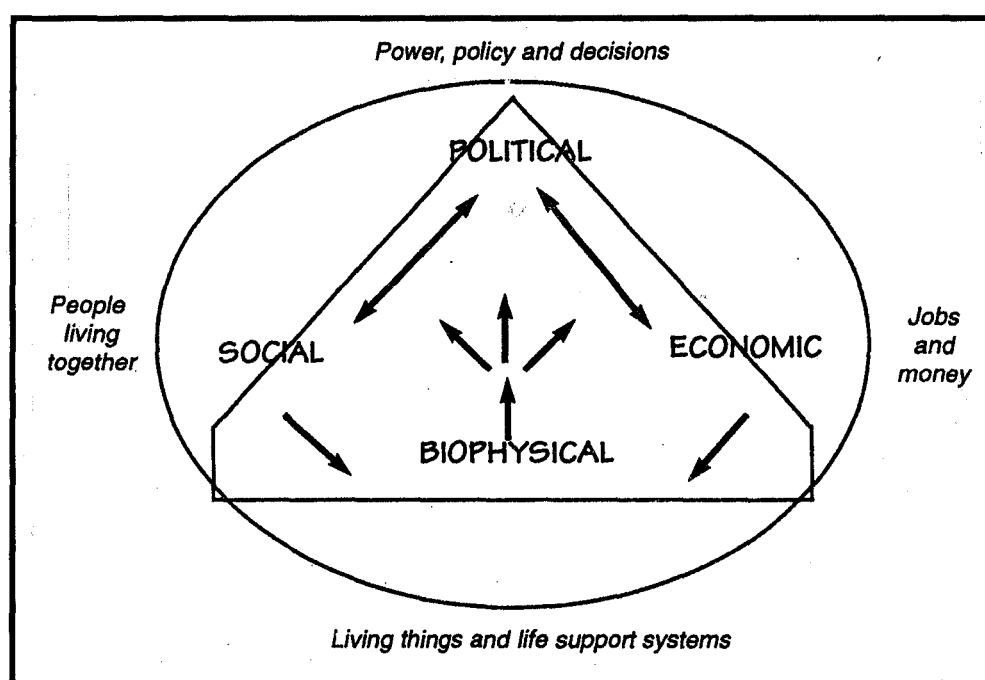


Diagram 5.8

The O'Donoghue model (O'Donoghue, 1995:8), used in the course materials to expose participants to the complex and interrelated nature of environmental issues and risks.

The themes in the industry course are somewhat different. Theme one in the industry course, 'Environmental Education and Training and the NQF' focuses on opportunities for developing formally accredited environmental education and training programmes. In the context of industry, recent legislation in South Africa encourages the provision of formally accredited programmes through financial incentives and this theme introduces participants to environmental and educational policy changes (Rhodes University Environmental Education Unit, Core Text One, 1998:6). Within this context, developing programmes within the framework of the NQF is an important feature of learning for these participants and accommodated for in this theme. Theme two, 'Industry, Business, Local Government and the Environment: Issues and Risks', explores the nature of environmental issues and risks in much the same way as in the general course, but also introduces various environmental management 'tools' for investigating issues, risks and impacts in this context. Theme three, 'Responding to the Environmental Crisis: Environmental Management Processes', introduces participants to trends in environmental management processes and various systems and standards developing in the international and local context. This theme introduces participants to a critical perspective on the development and implementation of environmental management systems in response to external, often market driven forces. It further explores environmental education and training within the context of these environmental management systems. Theme four, 'Environmental Education and Training: Methods and Processes', explores international and national trends in adult learning and changes in education and training. This theme, similar to theme three in the general course encourages participants to reflect critically on the assumptions that shape practice to in this way expose the limitations in practice and open up possibilities for change.

In both courses, the four themes are presented in the course materials as a set of building blocks, in the same way as assignments are (see 5.4.1 & diagram 5.2), in which each theme 'builds on' and is referred to in other themes. These themes provide the theoretical framework within which participants are encouraged to better understand the socio-historical contexts within which practice is shaped and so explore more effective ways of responding to contextual environmental issues and risks (see 5.3).

The core text for each theme is written in a semi- distance format and as such fosters an interactive approach to using them (see example in appendix 14). A gutter is provided at the right hand side of the texts, providing references to readings and questions that support participants in the exploration of these texts. For example, in core text one next to the discussion of the environmental crisis participants are referred to a reference that brings more of a contextually relevant perspective to environmental issues and risks. This caption reads 'Read John Yeld's 'Caring for the Earth' for a South African perspective on a number of environmental

issues' (Rhodes University Environmental Education Unit, Core Text One, 1999:5), this reference being one of the readings included in the course materials. In another example, next to the core text dealing with sustainable development in South Africa, participants are encouraged to '... try to think of ways in which different people are attempting to find more sustainable ways of living at a local level' (*ibid*:11). The core texts also include various activities that participants are encouraged to work through on their own or use in tutorial meetings (see 5.4.3). For example in core text two and related to the section of exploring various definitions of environmental education, activity 2.1 reads '... how would you answer if someone asked you "what is environmental education?"' (Rhodes University Environmental Education Unit, Core Text Two, 1999:3). The theoretical ideas introduced in the core texts as well as the format of these encourage participants to interact with these ideas and relate them to practice, as a way of exploring better ways of responding to environmental issues and risks in context.

Related to each of the four course themes, the assignment instruction is included in the course materials (see 5.4.1, appendix 12 & 13). These assignments can thus be viewed in relation to the particular core text in this theme (*ibid*; see diagram 5.2 & above). These assignments are included in the course materials when participants receive the file, so that it provides participants with an overview of the assignment work and a framework to guide professional development through the course. These assignment instructions are fairly explicit in what they require of participants (see appendix 12 & 13). However, many participants misinterpret aspects of the assignment, resulting in participants not maximising the opportunities for reflexive review in / of practice provided for in the assignment work (see 6.2.3). In my experience in the course, I have come to realise that it is imperative to assist participants in interpreting the assignment brief, so as to ensure that they maximise the opportunity for critically and reflexively reviewing practice through assignment work.

The collection of readings accompanying each of the course themes consists of academic articles, popular articles, paper presentations and newspaper articles. In some themes assignments from past participants have been included as part of the collection of readings. The readings are preceded in the course file by an orientation to the readings (see example in appendix 15). This provides participants with a brief overview of the ideas contained in the particular readings. Similar to the core texts the orientation to the readings has a gutter down the right hand side of the page that allows participants the space for commenting on and interacting with these readings and drawing on these to reflect critically on how practice has come to be shaped. These course readings provide participants with different perspectives related to the ideas contained in the core texts, which they can draw on in critically reviewing practice and trying to find alternatives to current practice.

Through interaction with the course materials participants are exposed to alternative perspectives, encouraging them to develop a broader conceptual understanding of issues and risks and responses to these. Participants are further encouraged, by drawing on these theoretical perspectives to reflect critically on their practice and adopt a praxiological approach to practice aimed at exploring other options through which to approach their work.

5.4.5 Assessment as learning¹⁰

Perrone (1997:306) notes that approaches to assessment are inextricably linked to our views about teaching and learning. In the RU/GF course, learning is designed to respond to diversity and contextuality within an open-ended, participatory and reflexive orientation (see 2.6 & 4.5). In this sense, Wals and van der Leij (1997:19) write that conceiving of environmental issues and appropriate responses depends on the perceptions and experiences of the learner as well as the context within which learning takes place (see 2.6). Within this orientation to learning, the use of standardized testing and examinations, based on the reflecting back of knowledge transferred from one group to another would be largely inappropriate in fostering the social change agenda underlying environmental education processes. Falchikov (1995:159) notes that traditional assessment approaches which simply serve to judge learners either 'correct' or 'incorrect' in their thinking and doing '... serves to lock an already closed door, rather than ... open[ing] up possibilities of change and learning'.

In the RU/GF course, assessment is recognised as an integral part of the learning process (Lotz, 1999a:35). Assessment in the course is thus not approached as a process of judging what learners have learnt through the course, but rather encourages participants to continuously reflect critically on their practice and the thinking that informs practice in their exploration of potential for change and improvement in practice. As such assessment becomes a '... critical aspect of the educational encounter' and serves as a basis for helping participants to reflect on their own learning (Perrone, 1997:305). In the course work-based assignments form the basis of assessment (see 5.4.1). It is important to note however, that the assessment of assignments serve a formative function in assisting participants to challenge their thinking and doing, and as such the focus of assessment shifts from product to process (Brown *et al*, 1995:77). This approach to assessment resonates with Wals and van der Leij's (1997:18) view of a process-based approach to assessment where more attention is given to the process of environmental education rather than the outputs that emerge from this educational experience.

¹⁰ Lotz (1999a:35).

Assessment of assignments is based on a set of regionally negotiated assessment criteria developed for each of the four, and in the case of the industry group, three assignments (see 5.4.1). Participants in regional groups, together with the regional tutor or tutors develop and decide on a set of assessment criteria for assignments. The negotiation of assessment criteria is guided by the two broad outcomes of the course, namely participation and personal and professional development. Participants similarly draw on the assignment brief to support the development of assessment criteria (see appendix 12 & 13). Some of the negotiated assessment criteria for assignment one in the ECTG include amongst others, '... each participant to make contributions' and '... [reflect an] openness about other people's ideas and comments' defined under the broad outcome of participation (DF9, ECTG – AC). Under the outcome of personal and professional development, '... improve writing skills' and '... show increased understanding of broader environment issues and dynamics of our region' are defined, amongst others (*ibid*). In relation to the assignment brief, '... [reflect] a clear understanding between nature, effects of issue but recognise relationships between causes and effect' and '... reflect a broader perspective of environment' were defined (*ibid*). For assignment two the ITG developed criteria under two broad headings, namely participation and personal and professional development (DF9, ITG – AC). These include '... attendance at all prescribed workshops and tutorials ...' and '... handing in of assignments on time' under the heading of participation (*ibid*). Under the heading of personal and professional development, they defined '... demonstrate technical writing skills in preparing the assignment' and '... show an integration of theoretical ideas presented in the course materials and your own practice' (*ibid*). The criteria under the heading of personal and professional development included the assignment specific criteria, such as '... critically analyze and describe [environmental management] system / processes relevant to your work context', '... reflect critically on [environmental education and training] in your context in relation to the two sets of principles in reading 3.30' and '... describe how you would be responding to an environmental issue in your work context' (*ibid*). For the industry group, certain range statements were developed for each of the assessment criteria that provided more detail of the scope and depth of each (*ibid*; see footnote 8). For assignment three the WCTG defined a set of general criteria and a set of more specific criteria relevant to the assignment brief (DF9, WCTG – AC). The general criteria include, '... hand in on time', '... correct referencing' and '... self assessment' (*ibid*). The assignment specific criteria include '... describe your programme briefly', '.... describe details of [environmental education] process and methods that you use', '... explain how you use the above methods' and '.... explain why you use the above methods' (*ibid*).

This process of negotiating assessment criteria serves two aims, namely to encourage participants to be a part of defining their own learning and also assessing their own learning in the course (Lotz, 1999a:37). Brown *et al* (1995:79) write that this involvement of learners in

deciding on assessment criteria develops a better understanding of the assessment process and as such should produce better work. The negotiation of assessment criteria and its contribution to processes of learning is normally experienced positively by most participants in the course, though some participants fail to see the value in participating in the process of developing assessment criteria (see 3.5.3.2). Most participants, coming from educational contexts where assessment usually takes the form of judgement, have an initial struggle with the orientation to assessment on the course (see 6.2.3). However, as the course progresses many come to see the value in this orientation (*ibid*).

In the course, assessment is primarily the responsibility of the regional tutor or tutors. Tutors in the different regions decide how they will work together to assess assignments. Very often, participants are provided with comments from all tutors in the region, in the case of more than one tutor. This enhances the process of assessment as participants are exposed to perspectives and comments from more than one individual. In the ECTG and the WCTG, both tutors commented on all assignments. Participants in the ITG were less fortunate since they had only one tutor (see 1.4 & 5.4.3). Tutors are encouraged to adopt a questioning approach to assessment where assessment comments are phrased as questions (see example in appendix 16). Tutors are discouraged from using ticks and crosses and red ink in comments, since these are symbolic of traditional assessment practices. The questioning approach to assessment is to challenge participants to probe deeper into initial ideas and perspectives, to critically review these and rework them in follow up drafts.

Falchikov (1995:157-158) and Brown *et al* (1995:81) note the critical role of feedback in assessment in supporting learning and should be provided ‘... quickly and be useful and accessible to [learners]’ (Falchikov, 1995:158). Feedback received on assignments is at times misinterpreted by participants and this is where tutors play an important role in clarifying the nature and purpose of the feedback (see 6.2.3). For example, in the ECTG some participants reflected that they had a problem with the feedback on assignment one and ‘... seemed to be misunderstanding what was being asked’ (DF8, obs. notes, ECTG-22-23/01/00). Jane explains that the comments were suggestions and it was up to the participant to use these comments to guide the further exploration of ways of thinking and doing (DF8, obs. notes, ECTG-22-23/01/00). Participants appear to have understood this approach to assessment and came to see future comments as suggestions with which to work (*ibid*). In this tutorial group Jane and Lawrence spent much time working through the comments with participants in order to support them in further developing ideas and perspectives for follow up drafts (see 6.2.3). Tutor comments, and a clear understanding of these by participants thus plays a significant role in challenging participants in their critical and reflexive review in / of practice (*ibid*).

Falchikov (1995:160) writes that ‘... devolving some responsibility for assessment to students is often seen as a means of enhancing learning’. Peer assessment and self-assessment are encouraged in the course, though these take place differently and to different extents in various tutorial groups. Peer assessment in the course involves fellow participants commenting on initial drafts of assignments (see 3.5.3.2). Participants find this a useful process, since the assessment comments often challenge initial ideas and perspectives and encourage them to rethink and rework ideas. At the end of writing assignment one Vasintha notes that ‘... discussion[s] with Olwen Gibson [was] valuable ... [it] help[ed] me structure and separate my causes and effects’ (DF10, C2). Participants are also encouraged to do a self-assessment at the end of writing each assignment. This was encouraged in both the WCTG and the ECTG, though did not take place amongst participants in the ITG (see 3.5.2). Self-assessment however appears in most cases to be at a level of reflecting on the process of assignment writing rather than on the ideas and perspectives offered in the assignments. This is reflected in Vasintha’s comments on writing assignment one, where she notes that the process of assignment writing was a difficult one at first since ‘... it has been a while since I have put pen to paper’ (DF10, C2). However, as she interacted with others and started developing the assignment, ‘... writing became easier’ (*ibid*). Anastelle’s comments attached to assignment one are similar, noting that ‘... I did not find writing this essay difficult’ (DF10, C6). She reflects further on the process of developing the assignment, noting that she spent a lot of time thinking about the issue and discussing perspectives around these issues with colleagues (*ibid*). These self-reflections attached to assignments provides some evidence of participants’ engagement in reflexive processes as this one for example, reflects how Anastelle has explored different perceptions of environmental issues and risks in her professional context. Peer and self-assessment plays an important role in supporting learning since through participating in commenting evaluatively on their own and others’ work, participants learn more about the process of assessment and how this process enhances learning (Brown *et al*, 1995:81).

Assessment as learning facilitates the development of all integrative elements of reflexive competence to varying degrees. Mostly, with respect to supporting the critically reflexive review of practice, I would argue that it supports praxis, critical reflection and conceptual understanding in challenging the thinking and doing of participants and encouraging them to critically review this. For example, assignments can be seen as the place where praxis takes shape for participants in the course. Participants’ struggle with praxis, which is often the case (see 5.3.4), can be identified and addressed through the process of assessment. This became evident in the case of Songezo who struggled with many of the educational ideas in theme three and used these in his third assignment as they appeared in the core text (see 6.3.4). Lawrence picked up the use of some of these terms and through assessment encouraged Songezo to relate these ideas to his practice. The outcome of this contribution through assessment to encouraging

Songezo to further a praxiological approach to his practice is evident in his progression from one draft of his assignments to the next, supported by assessment comments from his tutors (see 6.3.4). Critical reflection can be fostered through assessment processes by asking participants critical questions about their work and thus encouraging them to critically interrogate these aspects and explore alternatives. Critical questions can similarly be asked about participants' understandings of concepts introduced in the course and thus encourage them to clarify their thinking and proposed actions. The particular approach to assessment in the course encourages participation in deliberations around processes of assessment. In so doing, it encourages a better understanding of assessment and thus provides participants with the opportunity of using this process to enhance their own learning in the course. An example of personal and professional development fostered through the process of assessment might be that participants develop confidence in expressing ideas and perspectives, without fear of these ideas and perspectives being judged. This could encourage participants to further explore options for changing practice and so support a reflexive review in / of practice.

As reflected above course processes cumulatively encourage an engagement within reflexive processes and the development of the various integrative elements of reflexive competence and aspects of professional development. These course processes should thus not be seen as distinct incidences in the course supporting participation in reflexive processes. It should rather be seen as a collective of opportunities that encourages a reorientation in thinking and action informing practice. Participants in the course are encouraged to engage and interact with / within all of these course processes and features to support an engagement within reflexive processes. Though, as noted before, depending on the particular tutorial group, the background and experience of the tutor and the needs and interests of participants in this group interaction within these processes differ from one tutorial group to another (see 3.5.3.2 & 6.2.3).

5.5 A COURSE IN TRANSFORMATION

The description of the RU/GF course as 'a course in transformation' reflects the changing nature of the course to respond more effectively to the professional development needs of environmental educators. The reflexive review and adaptation of the course has been supported over the years both through informal evaluations undertaken through working with / within the course and more formally through various research projects undertaken in the context of the course (DF8, obs.notes, EEMeet, 26/10/2000). Since the inception of the course in 1992 (see 1.3.1), research has and continues to play an important role in the course. It has served as a means of reviewing the current status of environmental education processes in the course and as motivation for reworking course processes and features to enhance environmental learning amongst adult learners. It has similarly served as a means of identifying and

attempting to address issues and concerns around professional development processes for adult learners in environmental education (see 1.3.1).

5.5.1 Past and current research studies in the context of the course

Over the past ten years various research projects have been undertaken in the context of the course focusing on a variety of aspects in the course (Lotz-Sisitka & Raven, 2004:72). These research projects have highlighted the contributions made by the course to environmental education in the region and have identified various issues within course processes. These studies have resulted in various recommendations that have and may still inform the future development of the course. Course developers have attempted to build into the course the recommendations emerging from these research projects as a way of improving environmental education processes in the course. Issues identified have been taken up and explored in further research projects and some may still need to be explored in more depth in future. The following section provides a brief overview of some of the formal research projects undertaken in the context of the course, highlights the particular aims of each research project and discusses some of the significant findings emerging through these research processes.

In 1995/1996, Pippa Heylings from Zanzibar, Tanzania, undertook research in this region after the introduction of an adaptation of the RU/GF course in this country context (see 1.3.1). The initial aims of the research were to explore issues of ongoing curriculum development in the course in this context (Heylings, 1999:1). After a decision to formally accredit this course in Zanzibar, the research focus broadened to ‘... look at the aims, assessment and curriculum appropriate for a formally accredited ... course’ (*ibid*). Pippa (*ibid*:46) uses the metaphor of ‘distance’ to highlight the issues shaping the professional development experience of participants in this course. The first issue of distance she identifies is that created by language and she makes the point that exploring other languages can open up new understandings (*ibid*:117). All participants in the course speak English as a second language, and the course materials (texts and readings) are all in English. A second issue emerging from this research is the distance that exists between what students espouse and what they actually do, thus a gap between theory and practice (*ibid*:105). A third distance identified is that which exists between the reflexive non-quantifiable aims of the course and the need for fixed measurable criteria within a system of formal assessment for accreditation (*ibid*:77). Some of these issues have emerged in the general South African version of the RU/GF course as well, such as the issue of language in the course materials and the gaps between what participants say they do and what is reflected in practice. Assessment and accreditation has always been a contentious issue in the course as more and more participants come to request formal accreditation for learning in the course. The contention arises in the danger of narrowing learning opportunities in the

course in favour of formal accreditation (see 2.7; 3.2 & 3.8). More recently this issue has gained added significance in light of the opportunities for environmental education provided for in the South African NQF. Insight into this issue of appropriate assessment for accreditation has been explored through the initial research that I undertook in the course and is further being explored in this research (Raven, 2000).

Between 1996 and 1998 an evaluation of the general RU/GF course was undertaken. The aim of this evaluation was primarily to document the contributions of the course to environmental education processes in the region, to highlight tensions existing in the course orientation and course processes and to illuminate new areas for further development associated with the course (Janse van Rensburg & Le Roux, 1998:4). This evaluation highlighted different aspects of professional development and reflected how different course processes contribute to this development (*ibid*:79). An example of an aspect of professional development is '... seeing 'environment' with opened eyes: new understandings of environment and environmental education' (*ibid*). Further examples, amongst others, are being '... better equipped with improved job skills', '... feeling bold: increased confidence in the work context', '... equipping ourselves with tools for the job: developing resources' as well as '... learning from each other: developing networks' (*ibid*:79 – 99). Various aspects of the course nature and structure are discussed to highlight their contribution to the professional development of participants in the course (*ibid*:29 - 64). One of the issues, amongst others, emerging from this evaluation and related to the conceptual framework of the course is that the course orientation does not always manifest itself consistently (DF8, obs.notes, EEMeet – 26/10/00). Some course leaders are unclear about processes that give effect to the orientation to learning in the course, some students either reject, misinterpret or otherwise idealise aspects of the course orientation (*ibid*). I raise this issue as a significant one in terms of this research, since it is becoming clear that clarity on the course orientation provides participants with a guiding framework for their learning and provides tutors with a framework within which to facilitate / enable critically, reflexive learning (see 6.2.3 & 7.2). Another issue, amongst others, emerging from this evaluation is the need for increased tutor support, which I similarly raise as an issue significant to the professional development of participants in the course in this research (see 7.6). The increasing demand for formal accreditation amongst participants was also highlighted through this research and the need identified for further exploration of issues of assessment and accreditation. The issue of assessment and accreditation within the NQF framework was first explored in a paper written by Lotz and Janse van Rensburg (1997). It was further explored in the initial research that I undertook (Raven, 2000) and in this current research. The issue of tutor support was identified as one of the key issues requiring rigorous and in-depth inquiry through formal research in the future (DF8, obs.notes, EEMeet, 26/10/2000).

Between 1998 and 1999 Vivian Molose undertook research in the context of the adapted teacher education version of the course to gain deeper insight into the role of course materials and how these support the course orientation and intended course outcomes (Molose, 2000:2; see also 1.3.1). Though Vivian's intended focus was on the role of course materials, she notes that '... I realised that the materials are not the course' and over time the research focus was refined to include various aspects of professional development (*ibid*:3). Vivian notes that aspects such as conceptual development, praxis and critical reflection were reflected in her analysis of data, though not much depth could be found in terms of these developments (*ibid*:47 – 82). What emerged from Vivian's research was that course materials were not adequately and appropriately used in both contact sessions and by participants themselves (*ibid*). She recommends a more explicit use of course materials and the use of course processes that mediate the use of course materials so as to support the course orientation and the various aspects of professional development (*ibid*:50). The course materials, though not the course itself, play an important role in encouraging participants to critically understand their practice and explore more effective approaches to practice. Many participants, however, reflect a reluctance to use these course materials or otherwise use them inappropriately, as given perspectives to be adopted or rejected (see 5.3.2 & 5.3.4). In this sense, tutors come to play an important role in encouraging an appropriate and adequate use of course materials (see 6.2.3 & 6.3.4).

In 1998/1999 the first RU/GF environmental education course for participants in industry, business and local government was run (see 1.3.1). Nicola Jenkin undertook research in the context of this course exploring the opportunities provided for in course processes to enable meaning making amongst participants working in industry, business and local government contexts (Jenkin, 2000:2). One of the significant findings emerging from Nicola's research was the tendency that participants had to adopt rhetoric that was not necessarily reflected in their practice (*ibid*). This finding resonates with much of the other research work undertaken in different course contexts (noted above), and continues to be a significant issue in the professional development of participants in the course (see 6.3.4 & 6.4.7). A second significant issue emerging from Nicola's research is the constraints of the professional context of participants, such as time and corporate structure, amongst others, that inhibit the implementation of participants' ideas and learning (*ibid*:109).

Vivian (Molose, 2000:8) describes her research as part of a collaborative effort with other environmental education practitioners to continuously improve environmental education processes in the southern African region and to attempt to respond to the changing professional development needs of environmental educators working in the region. I similarly see my own research as part of this collaborative effort and was able to draw on many useful insights from

past research studies to inform this and prior research work. For example, the need to explore the issue of assessment and accreditation emerged from the evaluation undertaken by Janse van Rensburg and Le Roux (1998) and perspectives expressed in a paper on assessment by Lotz and Janse van Rensburg (1997). This need prompted the initial research that I undertook and which came to inform the current research. A further example is, through insights provided for in Vivian's research () with respect to the role of course materials in supporting professional development this became one of the areas of focus on course processes that support the reflexive review in / of practice in this research (Molose, 2000; see also 6.3.4 & 6.4.7). Similarly, Nicola's research reflects the potential inhibiting role of professional contexts in participants bringing their ideas to fruition in their work, similarly one of the key themes emerging in this research (Jenkin, 2000). In this research, I explored the professional context of participants in depth as a possible constraining or supporting influence to reflexively reviewing practice. More importantly however, these insights have provided valuable insight into the potential reorientation of course processes to better support the professional development of participants in the course.

5.5.2 Some changes in course processes over time

Though many of the research projects have been undertaken in particular contexts of the course (see 5.5.1), these insights have been valuable in informing the further development and expansion of various courses in different contexts and countries (see 1.3.1). Over time various attempts have been made to share the insights gained into professional development processes supporting environmental educators in the region. Some examples of these attempts are the SADC workshop culminating in the source booklet (Lotz, 1999a) and the development of a course developers' network in the region (see 1.3.1). Another example is a meeting held at Umgeni Valley in October 2000, aimed at exploring ways of taking the course forward (DF8, obs.notes, EEMeet-26/10/00). The annual conference of the Environmental Education Association of Southern Africa (EEASA) has also proved a useful forum for sharing such insights.

Over time various changes have been made to some of the course processes, both informally through working with / within the course, and formally through different research processes. Some of the issues that have gained recent attention, include:

➤ Enhancing tutorial support

Tutorial support has always been recognised as an important feature of the semi-distance nature of the course, and an essential feature of supporting participants in their professional

development (see 5.4.3). In the former years of the course the role of tutor was however, not adequately addressed and tutors were essentially left to their own devices after being initially approached to undertake the role of tutor in the course (Janse van Rensburg & Le Roux, 1998:48). During these years tutors often requested clearer guidelines and an adequately defined role for tutors (*ibid*:49). At this time a set of 'tutors pages' were developed containing some guidelines on activities and content to cover at regional tutorial meetings (*ibid*). These guidelines however, continued to prove inadequate in supporting regional tutors (*ibid*). Since 1997 a tutors' workshop has been held prior to the start of each course over a period of approximately two days (see 5.4.3). The focus of these meetings has however been on working through the course materials with very little time spent on discussion of the course orientation and aims and course processes that give effect to, or support the aims and orientation. It would appear that, though this focus on course materials might provide tutors with added confidence to work with these materials during tutorial sessions, it does little to encourage and support the course orientation and aims. In my own experience in the course, I have found that the course materials is something that one is introduced to and encouraged to interact with while doing the course. The course orientation and aims however, form less of a focus in the professional development experience of the students in the course and only really become clearer as one works with these ideas and translates them into course processes.

The inappropriateness of this focus at tutor workshops might be reflected in the varying orientations to course processes in different tutorial groups (see 3.5.3.2), highlighted both through the evaluation of the course (see 5.5.1) and through my initial (see 1.2) and current research. Tutors in different regions approach assessment, for example, differently, they have a different understanding of the aims of developing assignments in draft format and they do not necessarily see the role of course materials in supporting learning in the same way (see 3.5.3.2 & 6.2.3). In exploring the opportunities and possibilities for accreditation the need for more rigour and uniformity in course processes was identified as issues in the course that need to be explored in greater depth and addressed in the context of the course (Raven 2000:91 – 95).

In an attempt to address this need the idea of a 'Booklet to Support Tutors' was encouraged by various individuals with an interest in the course and consequently explored and developed (Raven, 2001). The draft booklet contains extensive examples drawn from my initial research of how past tutors have approached various aspects of the course and given effect to the course orientation and aims (Raven, 2000). It is introduced as not a prescription of what must be done in tutorials but rather as a resource providing examples of course processes that could enhance the professional development experience of participants. Prior to the start of the 2001 course, at a workshop for tutors held in October 2000, a rough draft of the booklet was introduced to tutors (Raven, 2001). In addition, the workshop programme provided a more balanced focus on

the role of the tutor, the course orientation, the course materials and assessment and accreditation (DF8, obs.notes, TW-27/10/00). In this workshop, for example, rather than working through the core texts and doing the readings, groups of tutors were asked to reflect on a number of key questions related to each course theme (*ibid*). These questions included what the key ideas / concepts were in each theme, what activities and processes would be useful in working with this theme, what the key aspects were related to the assignments of that theme and how the readings could be introduced and mediated in this theme (*ibid*). These examples reflect ways in which course co-ordinators are attempting to more adequately and appropriately support tutors to better support the professional development of participants in their regional group.

➤ **Assessment and Accreditation**

The issue of assessment has always been one that course co-ordinators have grappled with in the course. Over the years attempts have been made to introduce more rigour into the process of assessment since it forms an important part of learning in the course (see 5.4.5). Recently, as participants increasingly request formal accreditation (see 2.8), coupled to the opportunities identified for formal accreditation in the context of educational change in South Africa (see 2.7), assessment linked to accreditation remains an important issue in the course.

In 1992 when the course started, participants were issued with a Rhodes University Certificate for which no assessment was required (Janse van Rensburg & Le Roux, 1998:53). At this time the certificate was issued based on attendance at all meetings, the completion of all group and individual assignments and the tutor's impression of the level of students' participation in the course (Janse van Rensburg & Lotz, 1997:7).

In 1997, in an attempt to introduce more rigour into assessment processes and encourage increased participation in these processes, an approach of joint development of assessment criteria was introduced (see 5.4.5). At a tutors meeting preceding the start of the 1997/1998 course, two broad learning outcomes of participation and personal and professional development were identified within which the course orientation could be encapsulated (*ibid*:8). Participants in the various regional groups use these two broad learning outcomes to jointly decide on a set of assessment criteria that would provide guidelines for assessment for certification (see 5.4.5). Over the years the assessment criteria developed by some of the regional groups did reflect aspects of the course orientation (Janse van Rensburg & Lotz, 1997:8). For example, '... demonstration of a critical understanding of the interaction between readings and own situation' and '... evidence that the participant has challenged own thinking or their project / programme' (*ibid*). In other groups, however, certain key aspects of the course

orientation and the assignment work are omitted from the negotiated assessment criteria (Raven, 2000:81).

The initial research into the issue of assessment and accreditation further reflects variances in the process of developing assessment criteria as well as the use of these criteria in different regional groups (Raven,2000:79). For example, in some groups not all participants were actively involved in developing assessment criteria and constantly relied on the tutor to provide them with a set of criteria (*ibid*). Another issue emerging from this research is the assessment criteria, though an important learning framework within which to develop assignments, were rarely used as such in some groups (*ibid*). A further issue emerging was that some participants came to see the assessment criteria as defining a certain level of development representing the 'satisfactory' completion of assignments (*ibid*). For example if a participant reflected half of the assessment criteria in their assignment work, they felt that this represented a '50% pass' and thus no need to further develop the assignments (*ibid*:80). These examples reflect that variances in the development and use of assessment criteria become a key issue in shaping the professional development experience of participants (*ibid*:83). Depending on the approach to developing assessment criteria, some participants are likely to draw optimally on the professional development experiences in the course, while others miss out on optimal interaction with these processes.

At the start of the 1999/2000 course drawing on the preliminary insights into assessment processes emerging from the initial research an attempt was made to introduce further rigour and uniformity into assessment processes (Raven, 2000:94). At the tutors meeting preceding this course, after a discussion of various examples of developing and using assessment criteria, it was decided that each regional group would continue to develop a set of assessment criteria but these would be collated into a national set of assessment criteria. This was attempted in the 1999/2000, though not all regional tutorial groups responded to the request of submitting regional criteria for national collation.

Other examples of attempts to enhance learning through processes of assessment can be found in the industry course and the KZNNCS course (see 1.3.1). In the industry course of 1998/1999, a set of course outcomes are defined encapsulating the course orientation in addition to a set of specific outcomes relating to each of the course themes (see 5.4.4). Some of the broad outcomes defined, amongst others, include '... develop an environmental education and training course or programme which is in line with the competency framework of the NQF' and '... understand a range of environmental management tools including environmental impact assessments and environmental auditing' (Rhodes University Environmental Education Unit, Introductory Text, 1998:1). Some of the theme specific

outcomes are, amongst others, ‘... demonstrate an understanding of how the NQF was shaped within the South African transformation process’ for theme one (Rhodes University Environmental Education Unit, Core Text One:1) and ‘... critically analyse environmental issues and risks in industry, business and local government’ for theme two (Rhodes University Environmental Education Unit, Core Text Two:1). Participants are encouraged to use these outcomes to define a set of assessment criteria and associated range statements (see 5.4.5). Participants are further encouraged to reflect on and refine these assessment criteria as they develop their assignments. A similar process of developing and using assessment criteria was used in the KZNNCS course (Personal Communication, Sisitka, 2001). These examples provide some insight into attempts made, informed by research and working with / within the course to enhance learning through assessment in the course. Further research, such as this research, is likely to further inform assessment processes and articulation with national standards and associated requirements, as a way of improving learning in the course without compromising the specific orientation to learning in the course (see 3.8).

➤ **Course Materials**

The evaluation of the course reflects many positive comments about the course materials and particularly their role as a current and future resource in environmental education (see 5.5.1 & 5.4.4). Over the years however, through various formal research studies and through informal working with / within the course, the issue of limited engagement with the course materials has repeatedly emerged (see 5.5.1). Some of the main critiques of the course materials, expressed by past course participants, are a lack of contextual relevance, language difficulties expressed mainly by English second language participants and difficulties experienced with reading the more academic texts.

Janse van Rensburg and Le Roux (1998:61) feel that the critique of a lack of contextual relevance is unwarranted since the very format of the file encourages participants to ‘tailor make’ the file to suit their particular contexts and circumstances (see 5.4.4). The course is characterized by diversity and as such makes it very difficult for all specific contexts and needs to be catered for in a course of this general nature (see 3.5.3.3). I also think that many participants, influenced by the traditional content driven educational context from which many of them derive their educational experience, come to view the course file as a set of prescribed texts thus not opening these course materials up to their own adaptation and interpretation. These issues reflect another key role which the tutor comes to play in encouraging participants to see the materials as a set of introductory ideas to be engaged with critically as these relate to their own context and needs. In the 1998/1999 course, WCTG participants included as one of their assessment criteria ‘... share at least one resource with fellow participants’ (Raven,

2001:15; see also 5.4.5). In responding to this particular assessment criteria participants collected readings that they thought were relevant to each other's context and these were kept in a file with the tutor so that all participants could access them (*ibid*). In this way participants were encouraged to seek theoretical and other perspectives outside of those contained in the course file (*ibid*).

Several course participants have commented on the dense and complex language used in the core texts (Janse van Rensburg & Le Roux, 1998:62). However attempts to simplify the texts meant that certain points made became distorted and '... somehow turned out of shape' (*ibid*). Moreover, a simplification of the texts does not only mean simplifying the meaning made by both author and reader, but goes contrary to the orientation in the course which reflects the reality of environmental issues and risks as complex issues, requiring sophisticated and considered responses (*ibid*:63). These difficulties in working with the dense and complex core texts similarly highlights the role of the tutor in mediating the core texts and encouraging participants to engage with these through the use of various activities, questions and references included in these (see 5.4.4).

Participants often fail to engage appropriately and adequately with readings (see 5.5.1) and often see readings as only relevant to their assignment work (Janse van Rensburg & Le Roux, 1998:63). This often then limits the development of a critically reflexive and praxiological approach to their practice and thus limits any meaningful change. In attempting to encourage participants to engage more with readings, initially a reading checklist was introduced to the course file. Later in the course this checklist was replaced by a set of 'orientation to readings' pages that supported participants in finding their way into the readings (see 5.4.4 & appendix 15). Through these orientation pages participants are assisted in selecting those readings that they find useful to their particular work context and encourages engagement with these. The role of tutors in explicitly attending to supporting participants in engaging with readings is continuously recognised as an important aspect of supporting the professional development of participants in the course.

5.5.3 Further research directions identified

The important role of research in informing the reflexive review of the course was highlighted at a meeting of co-ordinators and tutors with an interest in short course development in environmental education (DF8, obs.notes, EEMeet, 26/10/00). At this meeting past research was traced and its role discussed in shaping course processes to date (see 5.5.1 & 5.5.2). This meeting further highlighted the continued importance of research related to the course and

identified some areas of focus for future research studies. Some of the areas for further exploration include:

- ◆ the course orientation and how course co-ordinators and tutors in environmental education may work with and within this orientation to support the professional development of environmental educators to respond effectively to environmental issues and risks in the southern African region;
- ◆ the establishment and formalising of partnerships to strengthen environmental learning in the region;
- ◆ how course materials and resources support learning, rather than focusing on a continuous rework of these materials, and the suggestion was made to explore the role of tutors in mediating these resources appropriately and adequately to support learning and be responsive to participants socio-historical context;
- ◆ the need for increased and improved tutor support;
- ◆ continued exploration of certification and accreditation options within the NQF and assessment options linked to the 'formalising' of the course within a national standards framework;

In recognising the open-ended nature and structure of the RU/GF course allows one to see the course as being continuously open to review and refinement. This provides opportunities for seeking better ways to support the professional development of environmental education practitioners. A 'course in transformation' seems to be an appropriate way of encapsulating the reflexive review and changes within the course over time. Through working as researchers in the course, co-ordinators and tutors (such as myself) come to mirror the reflexive and praxiological orientation to learning inherent in the course. It seems that this enables a continuous process of supporting change in providing professional development opportunities that support the development of responses to increasing environmental degradation.

5.6 CONCLUSION

The initial research exploring the development of competence in the context of the course identified various course processes and features that support participants in critically reviewing and acting to improve their practice of environmental education (Raven, 2000:61). This research probes opportunities in these course processes and features (see 5.4) that support an

engagement in reflexive processes and the development of a range of integrative elements of reflexive competence (see 5.3), in more depth. Section 5.4. introduces these course processes and features in a broad and general sense, as they have been undertaken in the course. A specific aspect of this research involves linking / relating the various aspects of engaging within reflexive processes and developing reflexive competence to specific course processes as individual participants interact with / within these (see 3.2). Chapter six provides more of a specific account of the personal professional development experience of the six case study participants and links these experiences to specific course processes as they were observed in particular regional tutorial groups (see 3.5.2).

Through both research projects I have encountered difficulty in specifically identifying reflexive competence as a specific observable capability (see 5.3.1 & 5.3.2). I have come to see reflexive competence as a culmination of various integrative elements of competence that support an engagement within reflexive processes (see 5.3.3). This is however, not to say that the notion of reflexive competence should be seen as a number of discrete aspects of competence (*ibid*). Rather it is an interlinking of various aspects of professional development that encourages the reflexive exploration of more effective approaches within environmental education (*ibid*).

Though the course processes emerging from the course orientation and aims reflect various opportunities for a change in thinking about and approaches to practice, various issues around the professional development experience of participants have emerged through both past and current research. The aim of this research (see 1.2 & 3.2) is to clarify this reflexive orientation to the course, to look at ways in which this is translated into course processes and to gain insight into how these processes further support reflexive agency emerging from within multiple social contexts. Chapters six and seven provide more insight into this link between course processes and a reflexive review in / of practice. These insights could come to play a significant role in supporting participants' engagement in reflexive processes and the development of reflexive competence.

6.1 INTRODUCTION

Beck (1999:131) argues that reflexivity begins with doubt, uncertainty and questions, the need for exploring unknown and new ways of thinking and doing, and so opens up ‘... contexts of action’. As is characteristic with most participants joining the course, the case study participants in this research project joined the course with questions about their practice, with doubt about what they were doing and with a need to explore new and different understandings and ways of approaching their work (see 6.2.1). Reflexive processes with which participants have engaged appear to have been shaped by social structure and the course provided an opportunity for the further processing of these issues of unawareness. In this sense, engagement in reflexive processes and the development of reflexive competence needs to be viewed in terms of a longer term ongoing processes of continuous monitoring and modifying of thinking and action shaped by and within social context (Loyal, 2003:53; see also 5.3).

Drawing on structuration theory that recognises social structure as both the medium and outcome of agency, and Popkewitz’s social epistemology that locates thought and action within socio-historical context to understand what shapes thinking and doing (see 1.5.1), the following chapter begins a presentation of participants engagement in reflexive processes with an overview of contexts within which reflexive agency have emerged. It introduces in more detail the academic background of participants, their experience in environmental education and their professional contexts (6.2). This introduction intends to provide for the reader a description of broader contextual factors shaping reflexive agency and is offered as a backdrop to further discussions of participants’ engagement with / within course processes and within reflexive processes in the context of the course (see 6.3). It similarly provides the reader with a contextual description within which to interpret the tensions emerging from reflexive processes in context (see 6.4).

Doubt, uncertainty, questions and the need to know and do differently, what Beck (1999:126) calls issues of unawareness brings about ‘... a compulsion to open oneself to ... the outsider perspective’. The RU/GF course might be seen as an opportunity that participants have chosen to process these issues of unawareness and explore new and different ways of thinking about and enabling environmental education processes in context. Following on from the ‘sketch’ of multiple contexts shaping an engagement within reflexive processes, section 6.3 explores participants’ further engagement in reflexive processes enabled through a range of course

processes and features and the development of reflexive competence as introduced in section 3.7.2 and 5.3.3.

Participants' engagement in reflexive processes and the development of reflexive competence is reviewed in section 6.3 in relation to socio-historical contexts shaping participation in reflexive processes. Loyal (2003:64) notes that reflexive agency is often the result of a mix of factors emerging from within individual desires on the one hand and social norms on the other. In reviewing reflexive agency in relation to social context various tensions become evident as participants attempt to critically review and reorient thinking and doing in environmental education within contexts of existing and dominant social norms. This chapter is concluded with a discussion of some of the tensions emerging out of attempts at engaging in reflexive processes and conventions established and entrenched within social systems, structures and processes.

6.2 CONTEXTS OF CHANGE

Popkewitz and Brennan (1998:8) describe a social epistemology as a strategy that places social agents and agency within '... historically formed patterns and power relations'. As such, this social epistemological approach provides a context within which to understand identities, perceptions and actions and how these come to be organised according to dominant rules and standards. Through adopting a socio-historical perspective to understanding roles, identities, thinking and actions, the external and deterministic nature of context is challenged and greater insight is developed into the potential and possibilities for reflexive processes of change.

Popkewitz and Brennan (1998:12) use the term '... regional study instead of context' to challenge conceptions of context as geographically bound spaces developed in specific chronological sequences. In this study I use the term contexts of change (with an emphasis on plural) to highlight the multiple histories that have shaped reflexive agency. Contexts of change as discussed here is presented as a follow on to chapters two to five that describe some of the broader socio-historical factors shaping the contexts within which participants learn and work (see 3.5.2). The following section focuses on more specific socio-historical factors that have come to shape participants engagement within reflexive processes in context. This section firstly describes participants academic background and experience in environmental education to provide some insight into how perceptions and actions in education broadly and environmental education more specifically have been shaped. It further explores participants' interests in environmental education processes as a way of highlighting factors shaping reflexive processes of change in context. Participants' professional context is described here in more detail as a means to signifying some of the opportunities for change, some of the

constraints to change and to provide a framework within which to understand some of the tensions emerging as participants engage in reflexive processes in context. In conclusion this section also discusses in more detail the learning contexts provided for in the tutorial groups to which participants were affiliated with the aim of providing insight into course processes and features that have supported an engagement in reflexive processes. Despite the organisation of this discussion around specific themes and headings, I have been careful not to construct boundaries between the multiple contexts shaping thought and action. Instead I have been mindful of these as interacting histories shaping reflexive environmental education processes. Participants' interactions within reflexive course processes, for example cannot be separated from professional and learning contexts *and* the broader context of transformation within which the course plays out (see 3.5.2.2). As such, multiple contexts are discussed here as a collective shaping roles, identities, perceptions and actions in reflexive environmental education processes.

6.2.1 Background and experience in environmental education

Four of the six participants have an academic background in teaching and all four have been involved in teaching and learning processes in the formal teaching context (DF10, C1, C2, C3 & C6)¹¹. Anton, Vasintha, Cathy and Anastelle qualified as teachers and have varying levels of experience in formal education (see 3.5.3.3). Daniel's academic background and experience appears to be of a more technical nature related to the mining industry and Songezo's background and experience lies in community development issues addressed through civic organisations, the establishment of which was prominent during the years of political struggle in South Africa (DF 10, C4 & C5).

Anton qualified from the University of the Western Cape in 1988, with a Bachelor of Arts degree, followed by a Higher Diploma in Education (DF10, C1). Following on from his studies, he took up a teaching position, teaching primarily in the subject area of Biology. Anton taught at two schools over a period of ten years and while teaching he completed a Bachelor of Education postgraduate degree. While teaching, Anton was involved with an extra mural programme at the school that involved taking learners on hikes and camps. Anton left teaching in the formal school context due to the impending rationalisation of teachers in the Western Cape Education Department after which he took up the position at the CCE. He notes that when he applied for the position at the CCE, he saw this as an opportunity to combine his hobby of camping and

¹¹ In presenting data from the various cases, I have attempted to minimise data referencing in this chapter by including only an initial data reference. All subsequent data presented, following on from this initial reference comes from the same data source and carries the same reference. Where data from a different source is used, I then begin with an initial reference and all subsequent data relates to this particular reference, until a further data source and reference is cited.

hiking with a career. Vasintha qualified as a teacher from the University of Cape Town with a Bachelor of Arts degree followed by a Higher Diploma in Education (DF10, C2). Vasintha began her teaching career at a school in Johannesburg in a temporary position before she started teaching at Rylands Primary School eight years prior to participation in the course. She teaches at Grade five level in the subject areas of English, Afrikaans, Science, Physical Education and Life Orientation. Cathy similarly qualified from the University of Cape Town with a Bachelor of Arts degree followed by a Higher Diploma in Education (DF10, C3). Cathy's experience of twelve years in teaching and learning spans across four schools, three of these local and one in the United Kingdom. Cathy started her career in teaching at Camps Bay High School and then left South Africa to teach in London for one year. She notes of this experience that the school in London '... has a really good work ethic and the kids and their parents are very competitive ... the school is rated the fifth highest academic school in London with most of the kids having aspirations of going to Cambridge and Oxford'. She further notes that the experience at the school in London '... has taught me that high standards are possible in a school ... something I don't see happening here'. When returning from London she taught at Wynberg Boys High School briefly before taking up her position at Sans Souci High School. She has taught primarily in the subject area of Geography. Anastelle completed a Bachelor of Science (B.Sc) Degree at the University of the Western Cape followed by a Higher Diploma in Education through which she qualified as a teacher (DF10, C6). On completion of these initial qualifications, Anastelle was unsure of whether she wanted to pursue a career in the formal education context. She taught at various schools for short periods of time in relief teaching positions primarily in the subject areas of Biology and Science. While teaching in these various short-term relief positions she went on to complete a Bachelor of Education Honours Degree. Through further exploring a link between her science education background and an interest in community development issues, she took up a position at the National Botanical Institute within which she undertook research for a Masters Degree in Science at the University of Cape Town.

Daniel and Songezo are the two case study participants with no formal academic training in education and no experience in the formal education context (DF10, C4 & C5). Daniel began his academic career with a specialist qualification in coal mining after which he pursued a range of qualifications related to mine management and general management (DF10, C4; see also 3.5.2.3). Daniel has always worked in the mining industry and at the time of doing the RU/GF course occupied a senior management position at a coal mine in Mpumalanga. Songezo undertook examinations for some of the subjects towards a matriculation certificate in 1982 and at the time of the course still needed to complete two subjects to qualify for the full senior certificate (DF10, C5). Songezo, though not formerly employed at the time of the course, has his work experience in civic organisations.

Of the six participants, Anton and Daniel are the only two participants in whose case environmental education processes form either the main aspect or one of the specific focus areas of their job (DF10, C1 & C.4). Environmental education is the main focus of Anton's job at the CCE and involves '... teaching environmental education to school groups and teachers' (DF10, C1). Daniel manages the Technical Services Department at Khutala Colliery (see 1.4 & 3.5.2.3). His department is involved with planning and running environmental education programmes as a significant aspect of planning mining operations (DF10, C4). Environmental education is thus an aspect of the work for which this department is responsible. Cathy and Vasintha appear to have more of a personal interest in environmental education (DF10, C2 & C.3). In her school context Cathy has always been involved in taking learners on fieldtrips as part of an extra curricula programme (DF10, C3). Cathy notes that her interest in environmental education started at home. Her father has always been a member of the Wildlife and Environment Society of South Africa and her parents both loved plants and animals '... so it was something that I grew up with'. She feels that '... if you do geography then you obviously have an interest in the environment ... I like to know what is going on in and the environment is everything that surrounds you'. In her school context, she has an interest in integrating environmental education into her fieldtrips, as these become part of the curriculum requirements for the grades that she teaches. At her school, Vasintha was one of the teachers who initiated the formation of a school environmental club (initially referred to as the garden club) aimed at addressing the poor physical condition of the school (DF10, C2). The formation of this club emerged out of concern amongst some of the teachers at the school around the poor physical conditions of the school and the initial intention with the project was '... to beautify our school'. Her exploration of environmental education processes was initially to provide her with some practical guidelines to further develop the activities of the club. Anastelle and Songezo appear to be exploring environmental education in the context of the socio-economic priorities emerging after the 1994 elections (DF10, C6 & C.5). Songezo joined the course with an interest in exploring the potential for improved waste management practices to address issues of unemployment amongst community members through increasing employment opportunities (DF10, C5). While undertaking her Masters degree in Science (M.Sc), Anastelle became involved with the Paulshoek community in Namaqualand, a community ravaged by a range of socio-economic issues (DF10, C6). On completion of her M.Sc. degree Anastelle began exploring different approaches to combining science education with issues around community development and began to explore environmental education processes as a means to supporting communities in challenging the socio-economic issues with which they were confronted. These examples begin to highlight some of the factors shaping participation in reflexive processes emerging from within context.

Some participants heard about the course through word of mouth from past course participants and others heard about the course through the advertising flyer. In all cases, participants appear to have heard about the course at a time when they needed support in their work in environmental education and these professional development needs are expressed in the expectations that participants had prior to the start of the course. Anton, Vasintha, Cathy and Songezo heard about the course from past participants who shared with them their own experiences of the course (DF10, C1, C2, C3 & C.5). Anton heard about the course while he was teaching and at the time he wanted to get more involved in environmental education (DF10, C1). He however, did the course four years later when he joined the CCE since he didn't feel that the course was appropriate to him while he was teaching in a formal school context (see 3.5.2.3 & above). Vasintha, through her involvement with the environmental club at her school made contact with Wendy who worked at the NBI and who supported the work being done at the school (DF10, C2). Wendy had told Vasintha about the course that she had done the year before and found most interesting. At the time, Vasintha assumed the course would '... empower me to help the club back at school with a focus on gardening'. Cathy was told about the course by a past tutor on the course who expressed much enthusiasm about the course and learning within the course (DF10, C3). She then requested the course brochure and the course structure appealed to her, '... the fact that there are regional groups and you get together'. Songezo was also told about the course by a friend who had done the course the previous year and at the time he was '... looking for something to help me get started with a practical project in the community' (DF10, C5). Daniel and Anastelle got to know about the details of the course through the course flyer (DF10, C4 & C6). In Daniel's organisation clarity could not be reached on who should do the course and the flyer was circulated between the training department and Daniel's own department, incorporating environmental management (DF10, C4). After many discussions, Daniel, not knowing much about the course, decided to do the course as a way of finding out more about the environmental education course offered to trainers in industry and business. A course flyer was posted up on a notice board at the NBI where Anastelle first saw it (DF10, C6). Of significance to Anastelle was '... the focus on understanding what environmental education is and the part of developing resources', and she knew this was an area into which she would like to move. These examples reflect some of the needs that arose out of context that prompted participants to explore participation in the course and approaches to environmental education processes.

In the expectations of the course expressed by participants most reflect a need to know more about the environment, environmental issues and to better understand environmental education processes (DF10, C1 – C6). Some expectations expressed by participants appear to focus on acquiring additional knowledge of environmental issues and environmental education. Vasintha, for example joined the course with the twofold purpose, to '... better understand

[outcomes-based education] and broaden my knowledge on the environment' (DF10, C2). Cathy similarly, had the need to '... broaden my knowledge, share ideas and meet people' (DF10, C3) and Anton had the need to '...better understand [environmental education] ... [and] know more about the theory behind [environmental education]' (DF10, C1). Some expectations expressed by participants imply the need for professional development to improve the way they think about and do their work in environmental education (DF10, C1 - C6). For example, Daniel's expectations of the course are that, through sharing with other course participants he is able to develop different perspectives on environmental issues in the mining industry and approaches to respond to these (DF10, C4). Anton expressed the need for professional development to '... give me a better understanding of my work' (DF10, C1) and Songezo wanted to '... learn more about environmental issues and how to respond to these' (DF10, C5). Anastelle's expectations are to '... build capacity and learn about [environmental education], equip myself for a future career, to build important networks with people' (DF10, C6).

Popkewitz and Brennan's (1998:12) conception of context as '... regional studies' (see above) focuses on how the individual is to be known and knowing, not within specific geographical spaces or physical points of reference, but within '... discursively constructed practices'. This provides a focus on how social agents and agency are shaped through specific rules and standards *in* specific institutional settings that play out through social actions and interactions *beyond* these specific institutions. Cathy's interest in environmental education was for example shaped through her family life, and this experience shaped her practice in the school context and through interactions in the course (see above). The above description attempts to provide some of a historical narrative of participants background and experience in education generally and environmental education more specifically to provide a framework within which to interpret reflexive agency. Out of this historical narrative the following insights begin to emerge:

➤ **Needs arising in a context of socio-political change**

Chapter two and chapter four provide some insight into changes in policy and practices in the period following the democratic elections in South Africa. This section follows through with this changing context to consider more specific factors shaping policy and practice within specific institutions and organisations, as they relate to specific case study participants and reflexive agency in these contexts.

The South African Constitution enshrines the right of every citizen to an environment that is not detrimental to his / her health and well-being and the right to an environment that is protected for the benefits of present and future generations. This policy statement is reiterated in and has shaped various other policies, trends and patterns in the context of change in South Africa.

Daniel works in an environmental management context in industry (DF10, C4). Through the National Environmental Management Act (NEMA) of 1998 industry and business is being encouraged to consider more critically the implications of productive processes on the environment and are being encouraged to approach development in a socially, economically and environmentally sustainable way (see 2.5 & 2.6). NEMA similarly stresses the importance of environmental education in promoting community well-being and empowerment, raising environmental awareness and sharing of knowledge and experience (McKay, 1999:3). The evolving legislative framework encouraging improved environmental performance together with increasing global market pressures are shaping changed approaches to environmental management systems, processes and practices in the industry and business context. Various industries are responding through the development and implementation of environmental management systems, such as the International Standards Organisation's (ISO) 14001, for example. A key feature of accreditation for organisations in the ISO 14001 environmental management system is the development and implementation of environmental education and training programmes that support environmental policy and practice. Environmental management in the context of Khutala Colliery where Daniel works is governed by its United Kingdom based holding company (DF10, C4). Currently an environmental education policy is in place in the organisation with a focus on health and safety of employees and interested and affected parties (see also 6.2.2). With regard to the environmental education and training programme at Khutala, Daniel notes that '... we all have technical qualifications in planning a mine from the cradle to the grave, but we do not have a formal system of environmental education, where you are teaching people but you do not know whether what you are doing is the right thing'. Daniel joined the course with the intention of exploring more effective responses to environmental issues and risks through environmental education processes, expressed in the need to '... be exposed to other disciplines and their environmental problems ... develop a programme that will assist in environmental education ... develop a different outlook towards problems'. This case reflects an example of reflexive agency shaped by change in environmental management policies, processes and practices in industry and business settings, in both a global and local context.

Cathy and Vasintha work with learners in the formal school context and Anton's work focuses on supporting teachers to develop and implement environmental education processes in their school context (DF10, C3, C2, & C1). In South Africa, as in many other countries, environmental education has traditionally been approached as peripheral to mainstream curricula (Mokuku, 2002:136). Over a period of approximately ten years, both prior to and after the 1994 elections, through processes of proactive lobbying within a broader environmental education community in South Africa, environmental education was moved from this peripheral position to be integrated into the curriculum framework for learners between Grade one and

Grade twelve. Between 1992 and 1995 the Environmental Education Policy Initiative (EEPI) introduced a participatory process of deliberations to influence education policy making (Lotz – Sisitka, 2002:97). This was followed by the Environmental Education Curriculum Initiative (EECI) between 1996 and 2000, a state – civil society partnership that allowed broad debate and the defining of environmental education in the emerging school curriculum framework (*ibid*:98). The school curriculum framework - initially known as Curriculum 2005, now revised as the NCS (R - 9) - included a range of environmental concerns in the specific outcomes that underpin learning programmes for learners between Grade 1 and Grade 9. In addition, environment was defined as one of the phase organisers making it one of the key themes around which to organise learning programmes. It is at this time that Vasintha, Cathy and Anton began to explore environmental education in the context of the school curriculum. This is evident in Vasintha's expectations of the course '... to get a better understanding of the mechanics of [C]urriculum 2005 ... to broaden my knowledge of this vast topic environment' (DF10, C2). Cathy similarly notes in her pre-course assignment that she is looking forward to '... includ[ing] [environmental education] throughout my teaching' to focus on the '... cross curricula aspect ... more importantly to implement the ideas' (DF10, C3). Anton notes that he is seeking through the course '... better understanding of my work ... and also to have a better understanding of environmental education' (DF10, C1). As noted above, conventional trends and patterns reflect environmental education as extra curricula activities at schools or within particular subject areas, mainly the Natural Sciences and Geography. This is reflected for example, in Vasintha's environmental club's focus on gardening as an extra curricula activity in her school context (DF10, C2). Cathy's overview of environmental education in her school context similarly reflects the extra curricula nature thereof, for example in the recycling programme being run and the celebration of various environmental calendar days (DF10, C3). She further notes that '... there are not [environmental education] programmes as such at our school, it generally happens in the classroom' where teachers have a particular interest in environmental education, as in her own example as a Geography teacher. These three participants all express an interest in exploring environmental education in the context of their own teaching. Vasintha, for example expresses the vision for the activities of the environmental club to be integrated into the school curriculum (DF10, C2). Cathy is similarly exploring environmental education processes in the context of her fieldtrips as part of the curriculum requirements in the grades she teaches and Anton is looking for ways of better supporting teachers to integrate environmental education programmes into teaching and learning in their school context (DF10, C3 & C1). This data reflects three examples of the changing context of environmental education in the school and curriculum context shaping reflexive agency in these three cases and contexts.

Anastelle and Songezo appear to be focussing on environmental education as a process through which to address socio-economic priorities in the broader context of redress and addressing inequalities inherited from the apartheid government in the period post 1994 (DF10, C5 & C6). Songezo has always worked in civic organisations and particularly in the formation of the civic organisation in the Grahamstown community where he lives (DF10, C5). He notes that '... since 1983 I have been involved in civic organisations ... the aims w[ere] to eliminate the apartheid structures and I wanted to be part of that'. Since 1994 Songezo notes that he doesn't see the purpose of the civic organisations opposing the government and believes the government '... is doing something for the people ... so the civic organisation cannot really come up with an alternative'. Since then Songezo has been involved in the unemployed project in Grahamstown, a project under the umbrella of the civic organisation aimed at addressing issues of widespread unemployment in the community. More recently the organisation has picked up a focus on environment issues and Songezo joined the course with the intention of exploring improved waste management practices (for example, recycling programmes) as a means to generating employment opportunities and income for unemployed members of the community. Prior to doing the course, Songezo participated in a range of short courses aimed at supporting people in the community to address some of the wide range of socio-economic issues that confront them in their daily lives. For example, he completed a counselling course to support people in '... addressing some of the conditions under which people live' since there are '... so many problems in our society ... family violence, rape, abortion, child abuse HIV'. Lawrence describes Songezo as having '... a real concern for people in his community' and this concern is similarly expressed by Songezo in his expectations of the course '... to be able to alleviate the social conditions in my community and to be able to respond to issues'. Songezo therefore appears to be exploring ways in which he can support communities in exploring ways to address some of the socio-economic issues with which they are confronted. Anastelle's case shows a similar focus in attempting to support communities in developing responses to local socio-economic issues (DF10, C6). When undertaking her research for her M.Sc. degree Anastelle worked in the Paulshoek community in Namaqualand. Anastelle describes the Paulshoek community as being ravaged by '... poverty in the community, unemployment, young people dropping out [of school], girls falling pregnant' amongst '... other social problems which one sees in urban areas, but here people seem unable to deal with it'. When she completed her B.Ed degree she was eager to get involved in projects that provided the opportunity through which she could combine her science education with community development. She saw the M.Sc degree as an opportunity to link her science education background with community development issues and notes that the research opportunity '... exposed me to what was out there'. Anastelle's vision in the Paulshoek community was to '... work with young people in addressing issues of social development and also agricultural development ... something over which they can take ownership and sustain themselves'. The data discussed above reflects

some of the intentions and visions that Songezo and Anastelle had in their work context and through the course they were wanting to explore these intentions and visions in more depth.

The above description attempts to locate participants' orientations to environmental education in the specific life and work contexts out of which they have emerged and provides some insight into the socio-political factors shaping an engagement in reflexive processes.

➤ **Engaging in reflexive processes**

The above description provides some insight into the contextual 'prompts' to engaging in reflexive processes in the cases of the six course participants. Engagement in reflexive processes is however not confined to these 'prompts' and other factors emerging within the broader context of life and work appear to have similarly 'prompted' reflexive agency.

As noted before, all participants joined the course with questions about their practice and thinking in environmental education (see above) which according to Beck's (1999) thesis of reflexivity, lays the foundations for reflexive processes. From the data analysed it becomes evident that the start of reflexive processes cannot be specifically defined within specific contexts and time frames, but rather appear to be an amalgam of factors culminating in a reflexive 'search' for new and different ways of thinking and doing in environmental education. For example, Anton notes that when he undertook studies towards his B.Ed degree he '... felt like I was getting stuck and needed to know more about the socio-historical context of education in South Africa' (DF10, C1). This statement might be viewed as indicative of his reflexive search for alternative social interactions in the education context. Anastelle's uncertainty about whether she wanted to go into formal teaching and her search for '... more in education' could similarly be seen as reflexive processes through which she continually explored ways to support change (DF10, C6). For these and other participants a further reflexive search is articulated in the way in which they came to know about and decided to enrol for the course and in the expectations that they had of the course prior to its start (see above). Anton for example, notes that he '... wanted to know more about environmental education, understand why people do things the way they do and change the way I approach people on environmental issues' and to explore '... whether our centre really achieve with [environmental education] what we initially set out to do' (DF10, C1). He further notes that '... it is important to consider the history of the centre to understand why we do what we do'. Songezo's reflexive 'search' is articulated as the need to find '... something ... to help me get started with a practical project in the community' (DF10, C5). Anastelle notes that in her work context she was exposed to concepts such as '... environment, environmental education, and so on' and saw the course '... as a way of formalising what I had in mind about these concepts ... understanding and knowing the link,

between education and science' (DF10, C6). Daniel in his work context was concerned that environmental education processes were hosted by '... mining technical people, not trained in education methods' and was uncomfortable about some of the approaches used. Amongst Beck's (1999:121) categories of unawareness participants appear to recognise what they do not know about environmental issues, risks and responses and all participants, through their voluntary participation in the course reflect a willingness to explore what is not known (see also 1.5.1). In some cases, as for example in Anton's case he explores an epistemological approach to exploring new ways of thinking and acting in education, through a focus on understanding the socio-historical underpinnings of practice (see above).

6.2.2 Professional contexts

Amongst the six case study participants there is diversity in the nature of the organisations for whom they work, difference in the positions that they hold in their organisations and variety in the job related activities with which they are involved (DF10, C1 – 6). Within these professional contexts, participants express various visions that they have for environmental education in their respective work contexts. These professional contexts are described here as a way of providing insight into the factors that enable and constrain engagement within reflexive environmental education processes.

➤ Anton – Centre for Conservation Education (CCE) (DF10, C1)

Under the auspices of the Western Cape Education Department, the CCE '... teaches environmental education to primary and secondary school groups'. Visiting school groups participate in a variety of lessons offered by the CCE and facilitated by the teaching staff, of which Anton is one. The CCE is a small organisation with a total of five staff members. In the organisation, Anton is '... second in charge' that involves undertaking various administrative and management tasks in addition to his teaching duties.

In addition to teaching, administrative and management tasks, Anton is also involved in curriculum development '... developing learning programmes for visiting schools and teachers'. His portfolio further includes networking and liaison with other environmental organisations, with respect to joint workshop presentations and the co-ordination of specific calendar days. A further significant aspect of his job is the co-ordination of the *Walters / ABSA School's Project* that involves supporting fifty schools in initiating environmental projects. This co-ordination involves inviting schools to participate in the project, supporting teachers through workshops in identifying environmental issues and developing plans for addressing these and further, conducting school visits to support the implementation of projects at schools.



Diagram 6.1 Anton with a group of learners from one of the visiting schools,, exploring 'the Rocky seashore' lesson at Dalebrook Beach in Cape Town.

Anton has always had an interest in teacher education and feels that this should be one of the focal areas at the CCE. His vision in his current job is to encourage and support teachers to initiate and sustain environmental projects at their schools. He notes however, that currently teacher education is not one of the main focus areas at the CCE.

➤ **Vasintha – Rylands Primary School (DF10, C2)**

Vasintha teaches as a grade five teacher at Rylands Primary School, a school in what was formerly classified as an Indian group area in the apartheid years. Vasintha lives in the same area as her school and in fairly close proximity to it. Vasintha's concern is that her school is losing learners to former Model C schools (schools formerly classified as white schools) and that the school has no 'fair' grounds for competing with these schools. She feels that in addressing the physical state of the school, parents' impression of the school might become more positive and this may encourage further enrolment of learners at the school.

At the time of the final interview that I conducted with her, Vasintha occupied a post level one position at the school, but was in the process of applying for a promotion post at her school and others. She appears to have felt the need to 'move on' in her career, but was reluctant to move out of formal education, hence the exploration of promotion possibilities.

Vasintha teaches in the subject areas of English, Afrikaans, Science, Physical Education and Life Orientation. Though the new curriculum framework for schools in South Africa was being introduced, Vasintha had not yet engaged with this framework since, at the time of the interview, it had not yet been introduced into the grade that she teaches. Vasintha is one of three teachers at the school who initiated the formation of the environmental club, approximately six months prior to the start of the course. She and two other colleagues were prompted by a concern for the physical conditions of the school and established what was first known as the garden club. The aim of the club was to attend to the school grounds and to '... beautify our school'. The garden club initially undertook activities as an extra-curricula programme where some learners and teachers, supported by one parent worked at laying out and maintaining the garden at the school during school holidays, weekends or after school. Approximately one year after the formation of the club its name was changed to the environment club and its activities were included as part of the official extra-curricula programme with time being allocated to its activities. The club still focuses on the maintenance of the school garden but the activities have been extended, for example, to include the co-ordination of programmes celebrating various environmental calendar days.

Vasintha notes that environmental education at her school is still confined to the environmental club and her vision is for environmental education activities to be integrated into all learning at the school. She feels that this could only happen through curriculum policy on environmental education that has currently not been highlighted at her school.

➤ **Cathy – Sans Souci Girls High School (DF10, C3)**

Sans Souci Girls High School is situated in the suburb of Claremont in Cape Town and Cathy notes that it draws learners from '... a wide range of socio-economic backgrounds'. Cathy describes her school as '... hav[ing] large school grounds, well greened, with an awesome view of Table Mountain'. Cathy feels that because the school is such a '... big green property, it appears superficially that there is no real environmental crisis to be addressed'. Cathy feels that as a staff at the school they do have some sense of environmental consciousness. They have a recycling programme and various environmental calendar days are celebrated, such as Arbour Day and Spring Day.

At the time of doing the course, Cathy taught Geography at the school, occupied the position of Head of the Geography department and co-ordinated the grade twelve class group. In this position she notes that '... I enjoy the freedom to develop new ideas ... I have to come up with the programme'. Because of her involvement in Geography she has been asked to help with

the recycling programme at the school but she hasn't kept this up as much as she would have liked to.

Cathy notes that as yet, '... there are no [environmental education] programmes as such, at our school, it generally happens in the classroom'. Cathy notes that environmental education '... happens in individual classrooms where teachers have an interest in it'. She notes that it is mostly integrated into the subject areas of Science, Biology and Geography and in her Geography teaching she attempts to integrate environmental education into her teaching where she is able to do so. Her vision is for an environmental education policy at the school and she sees the new curriculum framework for schools as a way to developing and establishing such a policy at the school.

➤ **Daniel – Khutala Colliery (DF10, C4)**



Diagram 6.2 Daniel explains to his fellow course participants the process of open cast coal mining.

Khutala Colliery is a fairly large mining corporation, dedicated to the supply of coal to the Escom Power Plant at Kendall, near Delmas in the Mpumalanga Province. Daniel manages the Technical Services Department of the organisation that includes long- and short-term planning, overall management of mining projects, geological services and information technology. Daniel's department is involved in environmental issues in that the surface environment is one of the facets to consider in planning the mining process from the cradle to the grave. Part of these environmental duties includes co-ordinating the environmental education programme.

The current environmental education programme at Khutala encompasses three aspects. These include a brief session on the environment of approximately one hour presented at a nine-day induction programme for employees returning from leave and for new employees. A second aspect is an adventure experience in which individuals are nominated to visit various environmentally sensitive areas in South Africa for a period of two weeks. The third aspect of the programme is a six monthly meeting between mining personnel and interested and affected parties, in which surrounding communities are introduced to the planned mining operations and are allowed to discuss the environmental implications of these.

Daniel's vision for environmental education in his organisation is '... to formalise a training and education system that would satisfy the need of the mine, the community and the environment'.

➤ **Songezo – Grahamstown Unemployment Project (DF10, C5)**

Songezo is involved with a civic organisation in Grahamstown and works in different aspects under this umbrella. For the past six years he has been involved with the unemployment project, aimed at trying to address issues of large-scale unemployment in the community. Here he occupied a position at the unemployment desk from where he initiated a plan for creating self-employment.

For the past two years he has '... been involved in focusing on environmental issues' and his current role is serving on the health and environment desk. In this role Songezo has been involved in trying to address some of the environmental issues in the community, such as waste, water and greening issues. He also sees addressing these issues as having the potential to generate income and as a means to addressing the issue of unemployment in the community.

At the time of the course, Songezo was unemployed and worked within the structures of the civic organisation. Through these structures he explored the development of an improved waste management strategy, involving unemployed community members as a means to generating income. Having no specific institutionally located work context, Songezo worked through the local municipal structures through which he attempted to rally support for the project and access funding to sustain it. Through his attempts to implement the project he did experience many challenges in securing support for the project.

Two years after the course, Songezo was working with the 'Pick it Up' project in Grahamstown, supported by the Municipal Health Department. Here he co-ordinates a group of unemployed community members in physically picking up waste in the community.

➤ **Anastelle – National Botanical Institute (NBI) (DF10, C6)**

When the course started Anastelle had been working with NBI for three years in the research division. She worked here as a researcher in stress ecology that involves ‘... scientific research, plant research and community awareness raising’. Anastelle worked primarily in the Paulshoek community situated north of Cape Town and ravaged by a range of socio-economic issues. Her vision in this community is to work with young people in addressing issues of social development and agricultural development, ‘... something over which they could take ownership and sustain themselves’.

During the course Anastelle changed jobs and moved to the Department of Water Affairs and Forestry where she worked in a community development initiative focusing on water conservation. Some of the projects with which she was involved here include, an income-generating project working with female farmers in the Limpopo Province and developing a ground water resource pack for schools in the province. Her particular role in this position was to assist in training and development in these projects and ‘... developing resources ... thinking through and implementing processes of resource materials development and providing training to the provincial co-ordinators’.

In further reviewing the professional contexts of participants, together with some of the data presented in section 6.2.1, the following insights begin to emerge from within these professional contexts:

➤ **Orientations to environment and environmental education in context**

Within the multiple contexts described above, some dominant orientations to environment and environmental education begin to emerge. These dominant orientations become evident in participants’ early descriptions of environmental education policy and practice in context expressed in the pre-course assignment and through some of the critique that they begin to develop through the course.

Dominant orientations to environmental education reflect a strong focus on issues of nature and conservation. In some cases there appears to be moves within organisations towards integrating social issues into an exploration of environmental issues and developing responses to these. In her pre course assignment, Vasintha notes that she feels ‘... quite apprehensive about doing this course as I feel that I lack the necessary academic and experiential background knowledge that my other course participants have’ (DF10, C2). At the start of the course she felt that she was ‘... lacking the science background’. Vasintha joined the course

equating environmental education to science education. At this time she associated environmental education with greening the school. She notes a sense of discomfort through the first workshop and few tutorials where ‘... I went through reflexive period where I wondered what I was doing here and do I fit in here’. ‘... I thought the course would assist me with greening of the school grounds ... I thought I would learn more about the layout of the garden and gardening in general ... was I in for a surprise’. As noted before, in Vasintha's school context environmental education is approached through the activities of the environmental club. The aim of the environmental club is described as ‘... to beautify our school ... nurture a love and respect for the environment’. The activities of the environmental club at the time of Vasintha joining the course focussed on teachers and learners coming together ‘... during school holidays and weekends ...to plant and maintain the garden’. This reflects an extra mural approach to environmental education at the school with a strong focus on green issues of nature. Through her involvement in the course, Vasintha was able to challenge some of these dominant orientations in her school context and initiate some change to the way in which environmental education was approached in this context (see 6.2.3).

In her pre course assignment at the start of the course Cathy similarly reflects a strong emphasis on green issues and the preservation and conservation of natural species and areas (DF10, C3). She introduces her assignment for example, with an overview of learners at the school who are ‘... environmentally deprived and they lack a sense of ownership and hence commitment to cherishing and nurturing the environment’. Her vision for environmental education is to ‘... through my teaching engender a greater appreciation and responsibility for the environment’. As noted before, she describes her interest in environmental education as being stimulated through her parents' interest in plants and animals and her father's commitment to nature conservation in some of the work he does. She describes the environment in terms of ‘... everything that surrounds you’ and links her ongoing interest in environmental education to her subject area of Geography. Cathy similarly appears to focus in her initial assignment work on scientific solutions to environmental issues and risks, in noting for example ‘... decisions need to be backed up with scientific evidence and not just based on emotions’. In her school context there similarly appears to be much emphasis on environmental awareness and consciousness. She for example describes the staff at her school as ‘... hav[ing] some sense of environmental consciousness’ and some of the activities at the school include running a recycling centre, celebrating various environmental calendar days such as ‘... harbour week ... spring day’ and supporting the ‘... Greening of the Cape Flats project’. She further notes that environmental education is being promoted ‘... in Biology and Geography ... but not really in other subject areas’. This reflects an extension of conventional approaches to environmental education in the school context within specific subject areas. Prior to the start of the course, Cathy however begins to explore alternative conceptions and approaches to

environmental education and is trying to adopt '... a more holistic approach'. She for example, with her learners begins to explore understandings of '... the concept of sustainability and the conflict between development and the environment' in the context of the '... Saldanha Steel Project'. In this example, one sees some dominant and traditional approaches to environmental education, however, coupled to the start of developing alternative conceptions and approaches to environmental education. This reflects a sort of discomfort with the *status quo* and the emergence of conflicting rationalities that Beck (1999:120) describes as central in reflexive processes.

Anton describes his career move from teaching at a school to his position at the CCE as being a way of combining his hobby with a career (DF10, C1). While he was teaching he took '... learners out on hikes and camps as this was my hobby and at the time I thought that this was environmental education'. He saw the job advertised at the CCE as an opportunity to '... do something which I have a passion for ... when it was a hobby I used to take learners on weekends, and now I had an opportunity to make a career out of it'. The job was advertised as one of '... working with learners and teaching them about the environment' and at the time he interpreted the job as teaching learners about '... the wonder out there'. In his pre-course assignment Anton describes the lessons offered at the CCE to visiting learners and teachers as '... a variety of [approximately] 25 lessons ... each with a conservation theme'. He further describes these lessons as varying from indoor to outdoor lessons and provides some insight into the range of activities that include, for example, exploring the history and geography of a river, the influence of human and exotic plants on the river and a fieldtrip to two rivers, one being a natural and one a canalised river where learners are encouraged to undertake some '... practical, co-operative work at the natural site'. A further focus at the CCE is on national and world environmental days, two cited as examples being Arbour Week and National Marine Day. Anton notes that his biggest challenge in the work context is to challenge the way that people think about and respond to the environment. He notes that '... many still think of the environment as natural areas ... they see environmental education as the way to protect these natural areas'. Similar to Cathy, it would appear that Anton experiences a sense of discomfort with narrow nature and conservation orientations to environmental education in his work context and through the course is attempting to find ways of challenging these dominant conceptions of the environment and environmental education.

At the start of the course Daniel notes that '... the environment that I saw was little bugs and water' (DF10, C4). This conception of the environment becomes evident through his initial assignment work where the impact of mining operations on the environment is described predominantly in terms of '... impact on fauna, flora, surface runoff, aquifers and the community'. Some of the further impact of mining operations discussed include that these

operations '... generate noise, dust and water pollution which will have an impact on the local people'. He further notes various monitoring processes that have been developed as part of an environmental impact assessment process to quantify impact and suggests some solutions such as '... these concerns will have to be addressed and several licenses will need to be applied for'. This example reflects a fairly strong emphasis on scientific rationality in defining and assessing environmental impact and risk and similarly in finding ways of addressing these issues and risks. This example might reflect what Beck (1992:24) sees as debates around environmental issues and risks '... being conducted exclusively or dominantly in the terms and formulas of natural sciences'. Dominant approaches to environmental issues and risks in the industry and business context reflect attempts at minimising short-term impact of productive operations, with less emphasis on longer-term impact and issues of sustainable development. Whitehead (1998:1) notes that approaches to managing environmental issues and risks in an industry and business context are predominantly '... driven by specific business related factors, rather than an overall change in operating environment'. In the context of Khutala, environmental education is approached from a safety, health and environment perspective as is typical in many industry responses to environmental issues and risks. Through joining the course Daniel intended to explore new and different ways of responding to environmental issues and risks in context, articulated in his expectations of being exposed to how people in different contexts respond to environmental issues and risks (see 6.2.1).

Songezo began the course with a concern for the physical state of the Grahamstown East community (DF10, C5). He notes that his interest was sparked when he started comparing his own community to that of the Grahamstown West community, a previously white group area. He notes that '... things are not the same ... environmentally ... not as much greening as in the West ... the West is much cleaner ... the differences are there because of the past government'. He notes that through reading some material he '... became concerned with waste ... a big problem in daily lives ... result of communities carelessness and ignorance'. Songezo feels that most black communities have been neglected as far as environmental education goes and sees environmental education as a way to encourage '... people to respond to cleaner surroundings ... community taking responsibility for their own surroundings'. His vision for his community is to '... see my community free from illegal dumpings, I want to see tidying and greening'. Songezo's concerns and vision reflect a strong emphasis on physical surroundings and the improvement of these. He does however couple this vision to one of addressing inequalities and addressing some of the socio-economic issues in the community. The comparison that Songezo makes to Grahamstown West however appears to indicate an acceptance of or perhaps even striving towards dominant 'rules and norms' of lifestyles established through unequal social systems.

Anastelle perceives environmental education as ‘... educating people about their surroundings, their lives and about everything that they are involved in ... is all encompassing with the overall aims to support people and educate people about environment and our interaction with the environment’ (DF10, C6). At the NBI, Anastelle worked in the scientific research unit and the research undertaken was part of the National Programme to Combat Desertification, the aim of which was to ‘... assess the degree of land degradation’. The dominant research ethic emerging in this context was scientific assessment of natural degradation with less emphasis on and integration of the social dimension in this environment. Given Anastelle’s interest in community development issues, her vision and intended orientation came into conflict with dominant orientations to environmental education in her context, reflecting a further example of conflicting rationalities out of which reflexive agency has emerged.

The data discussed above, show approaches to environmental education that emphasise the natural environment, at times without or with limited consideration of social and cultural considerations and the interrelations between these dimensions of the environment (see 2.6). In most cases these dominant approaches and the *status quo* in environmental education appear to have created a sense of discomfort amongst participants. As participants begin to critically reflect on these dominant approaches there appears to be an emergence of conflicting rationalities, a context within which reflexive agency is stimulated. As noted before, for Beck (1999: 124) the foundations for reflexive processes are ‘... reflected doubt, effective distrust’ which opens up opportunities to question and challenge the foundations, systems and structures through which we respond to environmental issues and risks. In this light, Vasintha notes that this was the first course that has made her ‘... feel so uneasy ... I never felt comfortable ... the process of questioning was a very uncomfortable one ... I was not used to it’ (DF10, C2). This statement reflects some of the discomfort through which participants went in ‘search’ of more effective and appropriate ways of responding to environmental education processes in context.

➤ Educational orientations in context

Through an analysis of contexts of action, emerging orientations to education reflect a strong emphasis on awareness raising and the sharing of knowledge about environmental issues with the intention of motivating action to address these issues. These orientations become evident in participants’ descriptions of, and visions for educational processes in their context. Various participants describe these orientations to education in their contexts as behaviourist and through interaction within course processes begin to recognise the limitations in these and explore different approaches to environmental education (see 6.3.3).

Most orientations reflect a central role of knowledge in teaching and learning processes and environmental education processes intended to transfer knowledge about the environment issues and risks and environmental education responses. For example, as an introduction to the course and through his pre-course assignment, Anton describes his biggest challenge in his work context as being ‘... to change the way in which people ... think and respond to the environment’ and through a teacher education workshop ‘... to explain to them what the environment is all about’ (DF10, C1). In the same sense, Anastelle describes the primary role of education ‘... as a process of getting the core information out, ... explain[ing] to people in a way that they understand’ (DF10, C6). Daniel describes the environmental education programme at Khutala as ‘... it is a case of we show you what we have got and you go out and do it’ (DF10, C4). Similarly, Songezo’s expectations of the course are ‘... to learn more about environmental issues ... how to respond to them ... be able to mobilise communities so as to canvass for support ... plough back information to the communities’ (DF10, C5). Cathy also describes her practice as ‘... wanting through my teaching and on fieldtrips to make learners environmentally literate and responsible citizens ... through knowledge and awareness’ (DF10, C3). Vasintha describes one of her science lessons in introducing the plant to learners as ‘... I showed them and told them about the various parts and told them of the two types of roots’ (DF10, C2). This key role of knowledge in orientations to education are further reflected in the roles and identities that individuals assume in teaching and learning processes as well as the way in which they approach environmental education processes in context (see 6.3.3 & 6.4.7).

Popkewitz (2000) notes that in contemporary life the exercise of power is found to be subtle ‘... through the ways in which knowledge constructs the objects’ that comprise practices of daily life. With knowledge as central and cast in a role of power in education processes, certain roles and identities in education processes are implied through participants’ descriptions of practice. The central role of knowledge appears to have implications for both the roles and identities that participants assume in running environmental education processes in their own contexts as well as the roles and identities that they expected to assume in the course. Anton for example, saw the course as an opportunity to ‘... equip ... ‘ himself as an individual ‘... to teach about [environmental education]’ (DF10, C1). As such, he notes that he expected to come on the course ‘... and be told what [environmental education] is all about’. In this sense, Wendy comments that ‘... Anton was looking for a recipe for good [environmental education] that he could follow’. He talks of ‘... empower[ing] teachers to take action’ through his practice of environmental education. Various participants express the expectation of coming onto the course to be told by ‘experts’ what are appropriate ways of approaching environmental education and then having the opportunity through environmental education processes in their context to replicate the information transfer from ‘experts’ to others (see 6.4.7). Similar to the example of Anton above, a fellow course participant commenting on Vasintha’s construct (see

3.7.1.3) similarly notes that she ‘... expected to be told (a recipe) what to do, how to do it and what she would need for her project at school’ (DF10, C2). Approximately half way through the course Cathy questions whether she is ‘... doing the right thing’ and appeared to become frustrated that ‘... the course is not telling me yes or no’ (DF10, C3). Songezo wanted to be ‘... motivate[d] with knowledge about environmental education ... that I could plough back into the community’ and Anastelle notes that ‘... I thought that we would learn about certain theories or an idea and you would have to go and develop the resource around this idea’ (DF10, C5 & C6). These examples reflect the shaping influence of dominant and conventional educational orientations through which learners are ‘filled up’ with knowledge about what to go out and do and draw on these dominant perspectives in practice. Through the course much of these dominant orientations were challenged which becomes evident in proposals developed for environmental education processes in their context (see 6.3.1 & 6.3.3). However, out of these challenges to dominant educational orientations various tensions emerged as participants’ visions come into conflict with these dominant orientations, as discussed in section 6.4.7.

Orientations to education reflected in the examples above appear to have had implications for approaches to environmental education processes in these contexts. Many participants describe the intention of environmental education processes as being to raise awareness and stimulate knowledge accumulation of issues and risks that would be translated into effective action to address these. Anton describes the intention of the lessons at the CCE as ‘... although we try to make the learners environmentally more aware ... we would like them to take the idea of environmental awareness further and put it into action ... that is why I am focussing on the role of the educator ... so that he / she take[s] the environmental awareness and put it into action’ (DF10, C1). Vasintha in motivating for a proposed teacher professional development workshop notes that ‘... if my colleagues concept, understanding of the environmental changes, it will imply that their teaching methods ... will have to change’ (DF10, C2). Cathy describes one of the dilemmas that she is confronted with in her teaching context as ‘... learners know the environmental jargon, but this knowledge is not leading to action or a change in their lifestyles’ (DF10, C3). She describes some of her fieldtrips as intending to ‘... increase the learners sensory and environmental awareness ... by visiting a landfill site ... the shock of the landfill site might in some way influence their consumerist life styles’. Songezo ‘... think[s] it is better to inform and to give people knowledge before they take action’ and in Anastelle’s organisation, through environmental education ‘... we hope to raise awareness that the environment in which they live is precious and their heritage’ (DF10, C5). These examples begin to show up dominant trends in environmental education, in these various professional contexts, as being characterised by assumed linear relationships between knowledge, awareness and action to address environmental issues. Through the course however, all

participants begin to challenge these orientations and begin to explore critically the assumptions of which practice is premised (see 6.3.3).

Through the course many participants were able to identify these orientations as behaviourist and to recognise and attempt to challenge the limitations inherent in these approaches through their developing proposals (see 6.3.3 & 6.4.1 – 6.4.6). In the context of the CCE, Anton describes the lessons as ‘... more engaged in fieldwork and the verbal transmission of facts’ and most methods are centred on ‘... changing attitudes, values and behaviour ... mostly influenced by the behaviourist theories’ (DF10, C1). He further notes that though they are exposed at the CCE to other processes through which to address environmental issues, for example, outcomes-based approaches, ‘... we tend to fall back on the one’s we are most comfortable with’. This reflects some of the dilemmas with which many participants in the course were confronted in attempting to challenge dominant orientations (see 6.4.7). Vasintha expresses the same sentiment in describing some of the factors that have shaped her own teaching (DF10, C2). She notes that she ‘... attended school and university during the 80’s and early 90’s’ and her own teaching methods have been shaped by ‘... those to which I had been exposed as a learner’, in which ‘... teaching did not encourage learners to question [but to] accept what was learnt as the only fact or truth’. She describes the activities of the environmental club as behaviourist in ‘... aim[ing] to change learners behaviour [through] forming the [environmental] club’ and notes that she often finds herself going back to what she knows best ‘... what makes me feel comfortable and in control and that is transmission teaching which includes reverting back to the text book practice’. Cathy notes one of the aims of her fieldtrips as being ‘... to raise environmental awareness of the local environment’ (DF10, C3). In reflecting on the fieldtrip which she had the opportunity of implementing in context she notes that she felt that ‘... knowledge and awareness would lead to behaviour change, but ... realised this is not ... the case’. Daniel similarly describes some behaviourist patterns in the environmental education programme in his context: ‘... it was a case of we show you what we have and you go out and do it ... we know, you do ... the sort of empty vessel story’ and begins to explore different ways of approaching environmental education in his context (DF10, C4). Songezo also comes to describe a part of his environmental education programme as reflecting ‘... some behaviourist ideas’ since they are ‘... informative, educative in the sense of giving knowledge and make people aware and change behaviour ... I am trying to conscientise and make people responsive’ (DF10, C5). Anastelle further offers a critique of approaches to environmental education in the NBI context that focussed on information dissemination with little consideration of the means of sharing information, the intention of sharing information and whether this intention is effectively achieved through approaches used (DF10, C6).

➤ Contexts enabling and constraining change

As noted before, the diversity characteristic amongst course participants generally in the course is similarly evident amongst the six case study participants (see 1.4 & 5.1). As reflected in the data above, the nature of organisations differ, the positions held by participants in these organisations differ, participants are confronted with different challenges in their work context and varying opportunities exist for the implementation of environmental education processes. From this data some indicators begin to emerge within context that could potentially enable or constrain change in environmental education processes.

For Anton and Daniel, environmental education forms a significant focus of their work in their respective organisations and both occupy a relatively influential position in their organisations (DF10, C1 & C4). Both these participants occupy positions in the upper hierarchic tiers in their organisations and in these positions might be more influential in bringing about change to environmental education and training processes in these organisations. For example, Anton is involved in developing curriculum for the schools visiting the CCE and is also integrally involved in the co-ordination of the Walters / ABSA school programme through which he supports school based environmental education processes (DF10, C1). Anton notes that he has always ‘... had an interest in teacher education’ and feels that this should be one of the focal areas of the work that they do at the CCE. At the time of starting the course teacher education was however not one of the main focal areas of the work being done at the CCE. In his position as co-ordinator of the Walters / ABSA school programme, he worked towards supporting the professional development of teachers to develop and implement environmental education programmes in their school context (see 6.4.1). In this way he appears to have been able to shape the development of teacher development processes in the organisation. In Daniel’s organisation he is integrally involved in the planning of the environmental education programme, though these programmes are run by others in his department. He notes that ‘... essentially I am more involved at a planning level and initiating programmes’ and ‘... I would get involved to a certain point and then hand it over, and later come back to it’ (DF10, C4). Both, in these positions are able to shape and direct approaches to environmental education in their organisations, as reflected in their proposals developed as part of assignment four (see 6.4.1 & 6.4.4).

Traditionally in the school context change is enabled by policy. For both Cathy and Vasintha the policy framework existed, though the extent of implementation at the levels at which they teach had not been realised at the time of the course (DF10, C2 & C3). Vasintha for example, notes that she had not yet engaged with the introduction of Curriculum 2005 ‘... since it has not yet been introduced at Grade 5 level’, which is the level at which she teaches. At the time she had not had much exposure to training in Curriculum 2005, though her expectations of the

course reflect that she was exploring environmental education processes in the context of the curriculum framework through the course (see 6.2.1). Cathy similarly teachers in the Further Education and Training (FET) band and at the time of the course, the curriculum framework for this band had not been fully developed and implemented (DF10, C3). Both Cathy and Vasintha express the significance of school policy to support the integration of environmental education into the curriculum at their schools (DF10, C2 & C3). Through her own efforts, Vasintha was able to shape approaches to environmental education at her school evident in the activities of the environmental club being moved from an *ad hoc* extra mural activity into the official extra mural programme at the school (DF10, C2). Vasintha however, notes that ‘... all teachers are not involved in [environmental education] in the classroom and feels that ‘... this is because [environmental education] in the curriculum has not been highlighted at the school’. She further feels the ‘... need for joint planning to ensure the integration of environmental education in the classroom’ and feels that this could only be enabled through a school policy on environmental education. Cathy notes that a few years ago the school principal was a biology teacher ‘... who was more interested in the environment’ and this led to the establishment of various environmental education initiatives at the school, such as the recycling programme and the celebration of various calendar days (DF10, C3). At the time of the course however, environmental education initiatives became the responsibility of the Biology and Geography teachers. She was for example, ‘... requested to help in the recycling project because I am the Geography teacher’. Cathy feels that in the school context ‘... there is quite a bit of influence from [the] top down and a policy on environmental education would be a good idea’. She feels that a policy on environmental education is quite important ‘... I would like the principle to take it more seriously ... the OBE thing can only be good ... if the Ministry of Education can make it compulsory it would be great’. For both these participants, environmental education processes are likely to be confined to their specific subject areas, as for example in Cathy’s case or in a specific area of interest as for example in Vasintha’s role of co-ordinating the activities of the environmental club. Opportunities for change in these contexts might then be viewed as limited and organisational support within these opportunities might similarly be limited. At the time of the course a review of Curriculum 2005 was commissioned. For both participants, this placed a moratorium on any further exploration of environmental education in the context of the school curriculum (DF10, C2 & C3). The review of the curriculum similarly had implications for Anton’s work in context and he notes that ‘... the implementation of the workshop was put on hold until more clarity could be reached on ... the curriculum’ (DF10, C1). These examples reflect a greater measure of dependence on general and institutional policy in developing and implementing options for change.

Both Anastelle and Songezo experienced extensive challenges in exploring and implementing environmental education processes in their contexts, though the nature of these challenges

differed (DF10, C5 & C6). Songezo was dependant on support (financial and organisational) from the local authorities to implement the waste management programme that he had developed through the course (DF10, C5; see also 6.4.5). He notes that '... meetings that were called did not happen'. '... I talked with my ex mayor about it and he made promises about it but I never saw anything happening on the ground'. At the end of the course he continued to explore other options of support for the programme and felt that it was '... important to link the plan to the work of the municipality since it is the duty of the municipality first to clean our community ... it is their responsibility'. Songezo's example reflects the difficulties experienced in implementing reflexive opportunities in the absence of a supportive institutional context. In Anastelle's case, the primary focus area of work in the research unit at the NBI was scientific plant research (DF10, C6). Environmental Education is not a primary focus area in this organisation, but emerged for Anastelle as appropriate processes within which to support responses to socio-economic issues in the communities in which they worked. In this context, Anastelle experienced various challenges to her proposed approaches to environmental education in the Paulshoek community. An example is her challenge to presentation of research information '... via flipcharts and talking' that she describes as having '... a top down upliftment approach that is expert driven', approaches that she found her colleagues extremely reluctant to let go of. In Anastelle's case this is an example of a context that was less enabling of change processes.

The above data is presented as a way of providing some deeper insight into some of the opportunities enabling change in the professional contexts of participants, but also highlights some of the constraints to change that potentially affected the exploration and implementation of alternative approaches to environmental education in context.

6.2.3 Learning contexts

Through an exploration of participants academic background and experience in environmental education and an overview of participants professional context, section 6.2.1 and 6.2.2 attempts to provide insight into the multiple histories out of which reflexive agency has emerged and that have shaped participation in reflexive opportunities provided for in the RU / GF course. As reflected in the data above, most participants joined the course having already started a process of questioning and critiquing orientations to environmental education processes in context. The RU/GF course provided participants with further opportunities to critically explore conceptions of environmental issues and risks and responses to these in context. Chapter five introduces the RU/GF course and its associated orientation, structure, processes and features that enable an engagement in reflexive environmental education processes. This section, draws on the overview introduced in chapter five to explore more closely course processes as

they emerged within the specific tutorial group case studies and the learning context within which participants further explored reflexive responses to environmental issues and risks.

As introduced in section 1.4 and 3.5.3, the six case study participants were affiliated to one of three tutorial groups within which course processes enabling an engagement in reflexive processes were explored. This introduction highlighted some of the factors shaping the nature of, and interactions within these tutorial groups. A key focus of the research is course processes and features that *enable and support* an engagement in reflexive processes within the context of the course. The following section discusses in more detail the various course processes and features as they are given effect within the three tutorial group case studies and in relation to participants' engagement within reflexive processes. The intention of this description of specific course processes and features within the tutorial groups is to provide the reader with deeper insight into the learning contexts within which participants interacted as they explored options to questions, critique and issues of discomfort experienced in professional context.

➤ **Working with the reflexive orientation and aims of the course**

The course orientation and the intention to enable an engagement in reflexive processes are introduced to participants at the first workshop and are laid out in the introductory text to the course materials (see 5.4.2). This introduction includes the key ideas informing the reflexive orientation to the course, such as the significance of history and context in understanding environmental issues and risks in context and responses, the role of critical reflection in reflexive processes and the praxiological approach encouraged through the course (see 1.3.2 & 5.3.3). As such, this introduction addresses the integrative elements of reflexive competence as introduced in section 3.7.2 and becomes critical in supporting and providing participants with a learning framework within which to reflexively explore environmental education processes in context. This workshop is however, a very full meeting and '... [participants] do not take the message of the course orientation with them' (DF7, e-mail, E-02/03/01). Of the course orientation, Lawrence notes that in most cases '... these are almost entirely alien ideas, having been entirely absent from [participants] previous experience of educational processes' (DF8, e-mail, L-06/03/00). Tutorial meetings are viewed as the process in the course through which these key ideas are given effect and it therefore becomes critical to frame tutorial learning processes around these key ideas. Eureka and Lawrence share my sentiments that it is imperative for the course orientation to be fully explored, revisited and worked with in tutorial groups, so as to provide participants with the opportunity of engaging fully with the reflexive orientation and aims of the course (see 7.2). In this research, the course orientation was worked with differently and to differing extents in the three tutorial groups (DF 8, all obs.notes).

From my experience in tutoring in the previous industry course (see 3.3.1), I felt that participants are able to better maximise reflexive opportunities in the course if they had a deeper insight into and understanding of the reflexive orientation and aims of the course, how these shape course processes and the potential these hold for a reorientation of environmental education processes in context. In the ITG, I spent a considerable amount of time discussing the course orientation, its intention and exploring different features of the course. Assessment as a process of learning is an example of such a discussion (see 3.3.3). At another tutorial we discussed the key ideas of participation, praxis and critical reflection and how participants can work with these ideas through the course as they reflexively explore approaches to environmental education processes (DF8, obs.notes, ITG 10/03/00). In this tutorial group these discussions however remained at a theoretical level leaving participants to work practically with them in the context of the course.

Jane and Lawrence's approach to working explicitly with the reflexive orientation and aims of the course was at more of a practical level (DF8, obs.notes, ECTG). Lawrence notes that in the ECTG '... participants [were] given ample opportunity to understand and engage with the orientation' (DF7, e-mail, L-06/03/01). During the research I observed various incidences of discussions and activities that highlighted and supported the reflexive orientation and aims of the course (DF8, obs.notes, ECTG). In this group, Lawrence and Jane '... highlighted ... different aspects of the orientation ... at different times, when they [were] appropriate in relation to elements of the core text, ... assignments, or ... discussing assignments' (DF7, e-mail, L-06/03/01). For example, one such discussion flowed from presentations of assignment two (DF8, obs.notes, ECTG-10-11/03/00). As participants presented their assignments, Lawrence reminded them that '... theories are meant to improve what we do, these ideas can help one to be more effective in responding [to environmental issues and risks]'. Another example can be seen in a discussion prompted by two participants who experienced difficulty in understanding the notion of praxis in the context of the course (DF8, obs.notes, ECTG-22-23/01/00). Jane responded, by drawing on the example of assignment two and discusses praxis as '... the relationship between the principles in theory and what you do to inform what you do in future'. A more practical example can be seen in an activity supporting the exploration of core text three and the development of assignment three (DF8, obs.notes, ECTG-10-11/03/00). Participants were requested to think through their existing programmes and identify the methods and processes inherent in them. They were then requested to think about the educational orientations informing these methods and processes, consider how these have shaped their practice and present these ideas to the rest of the group. These examples provide some insight into tutorial activities that encouraged participants to reflect on the assumptions inherent in practice and then engage in deliberations around these developing perspectives (see 6.3.3).

In the WCTG, two of the course features emerging were that of the process orientation to learning and the participatory nature of the course (DF8, obs.notes, WCTG). The process orientation to the course is expressed by various participants as a significant course process and appears to have been ‘... a novelty and they valued it’ (DF8, e-mail, E-02/03/01). For example, Cathy notes one of the significant aspects emerging from the course as being ‘... the whole idea of improving things as you go along’ (DF10, C3). Vasintha similarly notes that the course challenged her ‘... to start thinking again ... about what I was doing and my approach to things’ (DF10, C2). At the end of the course the participants in this group ‘... felt as if they had embarked on a journey of learning which was not yet over’ (DF7, e-mail, E-02/03/01). These examples reflect participants beginning to develop an *ongoing* orientation to exploring new and different ways of approaching environmental education, which could be seen as a key feature in reflexive processes in never becoming complacent with thinking and action in context (see 5.2 & 5.3). Other key features of the course were emphasised to a less extent in this tutorial group. On one occasion as co-tutor in this tutorial group, I undertook a discussion on critical reflection and praxis during feedback on assignment two, after commenting on assignments (DF8, obs.notes, WCTG 09/03/00). This was prompted by an observation that participants in this group wrote easily about their own practice, and critiqued their practice extensively, but experienced difficulty in relating the theoretical ideas introduced in the course to their practice (DF8, obs.notes, WCTG 06/11/99). A further example of emphasis on ‘own practice’ becomes evident in an activity supporting the exploration of core text two and the development of assignment two, within which participants were encouraged to discuss the aims and objectives of their own programme (DF7, e-mail, W-29/02/00). Wendy notes that ‘... the aim of this exercise was to help participants to start to look at their projects and programmes’. In the context of reflexive processes, the challenge of focussing on private and unique experiences of the individual limits the exploration of ‘outside’ perspectives and approaches that have yet to become known, as is congruent with Beck’s (1999:119) description of non-linear reflexive learning processes (see 1.5.1 & 4.5.4). The discussion in this tutorial group revolved around the idea of critical reflection as a process of reviewing practice in relation to the theoretical ideas informing that practice, focusing on options for improving practice and attempting to respond more effectively to environmental issues and risks in context (DF8, obs.notes, WCTG-09/03/00). Beyond these three examples, there is little evidence in this group of further exploration of the key ideas informing the course or examples of how these key ideas informed specific tutorial learning processes (DF8, obs.notes, WCTG).

Many aspects of the course processes and features are new and novel to participants. Cathy for example, valued the experience of completing assignments in draft, handing these in for comment and having the opportunity of working further with these ideas in the assignment (DF10, C3). She similarly experienced the process of peer assessment as useful and these are

two aspects that she has integrated into her own teaching practice in her school context. However, in some instances the reflexive orientation and intent inherent in these processes, that of encouraging ongoing deliberations with critical others, appears not to be fully understood, as reflected for example in participants in the WCTG's interactions within assessment processes. '... Participants felt that they were not learning much from the process of deciding on assessment criteria' (DF8, obs.notes, WCTG 06/05/00), a course process that is considered significant in challenging the conventional approaches to assessment and in allowing for an open-ended and reflexive learning process through which new and different constructions of environmental issues, risks and responses are 'allowed in' on existing constructions derived from within personal experience and context (see 1.5.1, 5.3.3 & 5.4.5). In another example participants in the ECTG struggled with the notion of praxis and through discussions came to see the value of reflecting on current practice through the analytical lens provided for in theoretical perspectives introduced through the course (see 5.4.4). If participants are not aware of the reflexive orientation and intentions inherent in the course processes and features this could potentially result in them deriving less support from within these processes as they reflexively explore approaches to environmental education in context. Examples above reflect the need to work more explicitly with the course orientation and ideas informing the course as in the case of the ECTG. Echoing my sentiments, Eureta feels that '... course co-ordinators and tutors need to be clear about the course orientation' (DF7, e-mail, E-02/03/00) and collaboratively explore ways of working with these orienting ideas to point participants to the potential for professional development in the course (see 7.6).

➤ **Developing work-based assignments**

O'Donoghue (Personal Communication, 1998, cited in Lotz, 1999a:58) describes professional development as '... being able to profess'. This would require participants in professional development processes to '... express their understanding through writing or talking' (Lotz, 1999a:58). In this sense, Janse van Rensburg and Le Roux (1998:109) see professional development as being a mix of doing, understanding what shapes this doing and expressing or articulating this understanding. Assignments thus play a significant role in providing the space for articulating the understanding that shapes practice (see 5.4.1).

At the start of the course participants are introduced to all assignment work, particularly the idea of all assignment work and learning culminating in the development or redevelopment of a resource material, course or programme to be used in their particular professional context (see 5.4.1). This introduction focuses participants on assignment one as exploring critically conceptions of environmental issues and risks in context, assignment two in supporting an critical exploration of the aims and intentions of their environmental education programme and

assignment three that supports their critical exploration of the orientations that shape approaches to environmental education (see 5.4.1). Participants are then encouraged to see assignment four as a culmination of these ideas into the development of a course, programme or resource material to be used in context. As with the introduction of the key ideas informing the course and the reflexive intent of the course, this introduction is brief, the intention being for assignment work to be further supported in tutorial groups.

Generally in the course, learning is structured around work-based assignments and as such, much of the reflexive intention of the course is either explicitly stated or implied in the assignment instruction (see 5.4.1, see also appendix 12.1 – 12.4 & 13.1 – 13.3). In the three tutorial groups, assignments played various roles in learning processes and participants engaged differently with assignment writing processes.

In the ECTG assignments formed a focal point of all tutorial activities and tutorial programmes were structured around supporting participants' reflexive exploration of environmental issues, risks and responses in context. Lawrence notes that in the ECTG '... assignments play a big role in discussions and activities in tutorials and are always discussed in relation to core texts' (DF7, e-mail, L-10/03/00). In this group, when starting to explore a new core text, the assignment would be briefly introduced, after which participants are encouraged to introduce related aspects of their work in relation to the assignment (DF8, obs.notes, ECTG-10 - 11/03/00 & 22-23/01/00). For example, in exploring core text two and introducing assignment two, each participant was requested to introduce their work and look at how the theoretical principles around environmental education contained in the core text are reflected in what they do (DF8, obs.notes, ECTG - 22-23/01/00). The core text was then explored in relation to the assignment brief, drawing on examples of participants' practice. A similar approach is evident in the tutorial through which assignment three and core text three are explored (DF8, obs.notes, ECTG – 10 - 11/03/00). This data reflects some examples through which participants were encouraged to draw on theoretical perspectives in critically reflecting on principles shaping their practice and so support the reflexive review in / of practice. In another example that supports the development of work-based assignments and the exploration of core texts, participants were encouraged to write down a list of questions that arose for them through discussions. They are further encouraged to select one of the readings related to the core text that they find '... relevant[t] to your context'. Participants were then encouraged to do the reading in time set aside and were guided through the reading by specific questions posed by the tutor. These questions include '... what is the key ideas / points in the reading? ... think of two questions that came to mind while doing the reading? ... how does what you have read help you to respond to your own work? ... what orientation (behaviourism, constructivism, humanism, social constructivism, socially critical or a mixture) does the writer place her / himself in and why do you think this?'.

Participants were then encouraged to reflect on their questions and to assess whether these had been answered through the activity. This activity and the assignment were intended to support participants in better understanding the assumptions that shape their practice and provide an example of tutorial activities specifically focussed on supporting assignment work. This central role of assignments in tutorial processes focuses participants specifically on the issues and risks to which they are responding and the processes through which they are attempting to respond to these. In the ITG and the WCTG assignments formed less of a focal point in tutorial meetings. In the ITG participants joined the general course tutorial groups for support in developing their assignments. Two specific ITG tutorials focussed on some of the challenges that participants were confronted with through the course and some of the core texts that they needed further discussion on. As such, little time was allocated to the discussion of assignments that were developed by participants and they were encouraged to share assignments electronically for comment by fellow course participants. In the WCTG time allocated to assignments was for the presentation of ideas and discussions around these and so did not constitute much of a focus in tutorial activities.

As introduced in section 5.4.1 and above, the reflexive intent is at times explicitly stated and at times more subtly implied (see also appendix 12.1 – 12.4 & 13.1 – 13.3). Assignment instructions are sometimes wordy and emphasis in the different parts to the assignment could be misinterpreted. For example, most assignments begin with a request for descriptions of practice followed by a critical analysis of practice. At times descriptions take precedence over critical reflection in the assignments (see 5.4.1). Following on from the initial introduction in the first workshop (see above), assignment instructions are generally further discussed with participants at the tutorials. In the three tutorial group cases, assignments were introduced at tutorial groups differently, with more of a focus on the 'how' and 'why' of practice in some cases and different emphasis on these aspects in others. Through my experience with the ITG, I found that participants often skip over some important aspects of the assignment and do not then maximise the full reflexive potential of the assignment. In this group when introducing the assignments I specifically set time aside for drawing participants' attention to all the details in the assignment brief (DF8, obs.notes, ITG-10/03/00). Here I extracted specific key phrases from the assignment brief and communicated these to participants using either an overhead projector or a separate handout. For example, in introducing assignment two, I highlighted four specific themes for consideration in developing this assignment, these being '... the *status quo* of environmental management systems, potential strengths and weakness of these systems and processes, education and training within these systems and critical reflection on the nature of education and training' (see appendix 13.2). I felt that this focussed participants on the specifics of the assignment and encouraged the critical reflection on the existing approaches to environmental education in context that could be overlooked in the additional detail of the

assignment brief. Daniel's assignment two reflects that this assignment was explored relative to these headings used in introducing the assignment, and so addresses all of the key themes in the assignment brief, intended to support a reflexive exploration of current approaches to environmental education (DF4, ass 2.1 & 2.2). This might be the consequence of clarity on the assignment brief and all related aspects to be explored. In the ECTG, each assignment brief was extensively discussed with participants prior to the exploration of specific course themes (see above). For example, in introducing assignment two, participants were asked to consider the aims and objectives of their programme and reflect on a number of questions in relation to these (DF8, obs.notes, ECTG-22-23/-1/00). These include considering '... why and how [aims and objectives] were developed, which of the principles could be useful to their project, how and why do they consider them relevant'. Songezo's assignment is discussed under the headings of '... responding to issues ... aims and objectives ... relevance [of aims and objectives] to the project ... principles guiding the project' that similar to Daniel's case reflects that all suggested themes in the assignment brief were attempted and covered (DF5, ass 2.1, 2.2 & 2.3). This might similarly be the result of clarity on the assignment brief reached during tutorial discussions. In the WCTG, various assignments analysed amongst the four participants affiliated to this group reflect that certain critical areas, that support a reflexive exploration of environmental issues, risks and responses, remained unexplored. In the WCTG the tutor '... felt that the instructions were clear' and found a '... formal assignment activity' to introduce the assignment to participants not necessary (DF7, e-mail, W-29/02/00). In all four participant cases the initial drafts of assignment one reflects that the impacts associated with environmental issues were not explored (DF1, ass 1.1, DF2, ass 1.1 DF3, ass1.1 & DF6, ass 1.1), an area in this assignment critical to considering the unintended consequences of thought and action in context (see 1.5.1). This might be the result of participants becoming overwhelmed with the complexity of discussing the nature of environmental issues in context (see appendix 12.1). It might however also be the result of less clarity on the critical areas of exploration in the assignment that support reflexive processes. Presentations of assignment work similarly reflect less focus on some aspects in the assignment brief (DF8, obs.notes, WCTG-28/11/99; DF8, obs.notes WCTG-17/02/00). For example in presentations of assignment two, Anton focuses on a description of the environmental education programme offered at the CCE and the aims and objectives of the programme (DF8, obs.notes, WCTG-28/11/99). Vasintha similarly presents a description of the activities of the environmental club and the aims and objectives that guide the programme. Cathy's presentation included a discussion on some of the principles that are likely to inform her programme, but notes that '... this was hard to do ... hard to link the principles to the programme ... they are sort of taken for granted'. In her presentation, Anastelle similarly notes that '... the assignment is a struggle ... discussion around the assignment is very helpful'. She further describes her envisaged aims and objectives of the proposed environmental education programme in the Paulshoek

community'. A focus on the aims and objectives informing the programme and how these were developed and exploring international principles that could potentially inform the reorientation of these programmes provides the space in this assignment to reflect critically on factors shaping practice and exploring varied approaches beyond those known and existing, thus supporting a reflexive orientation to practice (see 1.5.1 & 5.4.1). The overemphasis on own practice in these example, with less engagement with theoretical perspectives might have limited reflexive explorations and 'trapped' these explorations within existing structures, systems and processes (see 4.5.4). These latter statements might point to the critical need to support reflexive explorations amongst participants through the varied processes and features of the course, but more importantly in the development of assignments, which provide the points of articulation of this reflexive exploration (see 5.4.1).

In all tutorial groups assignments are developed in draft format, for comment by either fellow course participants and / or tutor (see 5.4.1 & 5.4.5). The number of drafts completed by participants is not prescribed in the course but is intended to provide participants with the opportunity for ongoing interactions and deliberations around environmental issues, risks and responses. The number of drafts completed amongst participants in the different tutorial groups differed from one group to another (DF1 – DF6). In the ITG, due to time constraints and participants' heavy work schedules, participants completed two drafts of each assignment. Comments on the second draft of assignments sometimes reflected critical areas still to be explored (DF4, ass 1.2; DF4, ass 2.2; DF4, ass 3.2). For example, comments made on Daniel's second draft of assignment one include, amongst others, '... the revised assignment includes some more of the specific impacts, you might however have expanded on the causes ... in considering your response to this issue, try to consider more of the underlying causes' (DF4, ass 1.2). These comments indicate that the causes of the contextual environmental issue that Daniel was exploring was not explored in great depth that might compromise reflexive responses that attempt to address the root causes of the issue (see 1.5.1, 2.5 & 3.7.2). In this case, the development of two drafts might also be seen as limiting ongoing deliberations around the constructions of environmental issues, risks and responses. In the WCTG, some controversy existed amongst tutors as to the number of drafts to be completed by participants. Whereas I understand the rewriting of draft assignments as intending to encourage a deeper and ongoing exploration of thinking and practice as alternatives are explored, Wendy felt that '... rewriting ... assignments to an "acceptable standard" presented a standardization of the course which she found difficult to enforce' (DF8, obs.Notes, WCTG, 06/05/00). This appears to reflect a misunderstanding of the role of developing assignments through various drafts in supporting the ongoing reflexive exploration of approaches to environmental education. Most participants in this group completed two drafts for each assignment and in some instances, one draft. Anastelle for example, completed only one draft of assignments three and four (DF6, ass

3.1; DF6, ass 4.1), assignments that are critical in exploring the unconscious preconditions of practice and exploring ways of addressing constraints to change (see 3.7.2). Through assignment three for example, Anastelle provides a rich description of the environmental education processes traditionally used in the NBI context (DF6, ass3.1). The assignment provides much detail on how environmental education is approached and Anastelle notes ‘... I am not sure whether this could be done differently’. In response to this question, the tutor comments ‘... think about this and try to answer the question here ... this is an opportunity to do so ... try ... to focus on why things are done in a particular way’. The absence of a further assignment draft and discussions means that these critical questions raised in the initial draft of the assignment were not further explored and might have compromised the opportunity for reflexively reviewing practice. In another example, Vasintha, Cathy and Anton completed two drafts of assignment one (DF1, 1.1 & 1.2; DF2, 1.1 & 1.2; DF3, 1.1 & 1.2). These participants all engage in rich discussions of the nature and causes of environmental issues in context, but through these initial drafts do not discuss the impacts of these issues. In commenting on the second draft one of the tutors suggests that a third draft of the assignment be completed focussing on the impacts of the issue. Cathy and Vasintha responded to these comments and explored more fully the impacts of the issue (DF2, 1.1 & 1.2; DF3, 1.1 & 1.2). Vasintha developed the third draft of the assignment through discussions with a fellow course participant and notes that these discussions ‘... were very valuable ... [it] helped me to structure and separate my causes and effects’. The assignment appears to become in this case a framework around which to encourage ongoing discussion, debate and an exchange of perspectives. Subsequent drafts of the assignment in this case appear to have stimulated further exploration of, and understandings of contextual issues and risks and so supportive of a reflexive exploration. All participants in the ECTG prepared three drafts of each assignment. In the case of Songezo a clear progression can be seen from one draft of the assignment to the next (DF5 – all assignments). For example, Songezo, in the first draft of assignment one, discusses waste very broadly, defining it, describing it in general terms and exploring general causes and impacts (DF5, ass 1.1). In commenting on this assignment, Jane notes this general discussion and encourages Songezo to describe waste as he sees it in his own community and encourages him to ‘... speak with your own voice’. In draft two of the assignment Songezo continues to generally discuss waste with some specific reference to particular issues of waste, such as plastic pollution (DF5, ass 1.2). With further encouragement from Jane and Lawrence through assessment comments, Songezo discusses waste in the Grahamstown community more specifically, for example, by referring to the threat that plastic pollution poses to domestic animals in the community (DF5, ass 1.3). This case provides an example of opportunities through the development of assignments and interactions and deliberations within assessment processes that support deeper explorations of environmental issues and risks, and so supports the ongoing reflexive explorations around thinking and doing in environmental education.

An engagement in reflexive processes is described in section 5.3 as an ongoing, long-term process supported by interactions and deliberations. The extended number of drafts described in some of the cases above, supported by tutorial activities, tutors and fellow course participants' comments and discussions appear to have provided participants with the space for ongoing reflexive exploration of environmental issues and risks and responses to these in context. It similarly provides opportunities for processes of shared meaning making around issues, risks and responses, as suggested by Loyal (2003:40) to challenge individualistic approaches to reflexive agency (see 1.5.1). In this sense, the longer term and interactive nature of developing assignments provides a basis for conceiving of reflexivity as collective processes of exploring options for change and so provides support for engaging in reflexive processes.

➤ **Supporting the engagement with theoretical perspectives**

The theoretical ideas contained in the course materials are intended to provide the analytical framework within which to reflect critically on thought and action and to explore alternative perspectives and approaches to practice. Formal theory, as opposed to informal theory implicit in practice, provides the space for breaking beyond the boundedness of the private and unique thinking and action of individual practitioners and opens up the space to explore 'other' forms of reason and social interactions (see 1.5.1, 4.5.4 & 4.6.3). In the context of the RU/GF course and the reflexive orientation and aims, the core texts play a critical role in the reflexive exploration of conceptions of environmental issues and risks in context and processes through which we respond to these.

As noted in section 5.4.4 course materials comprise of a set of core texts and a set of readings for each theme (see 5.4.4). The core texts provide a broader orienting framework within which to critically and reflexively explore conceptions of environmental issues and risks and socio-historical processes that shape thought and action. An analysis of participant's course files, assignments and discussions with participants reflect that amongst the six case study participants the interaction with the course materials varied. Vasintha and Cathy appear to have interacted extensively with the core texts through the course, evident in an analysis of their course files and assignments (DF10, C 2, C3 & C1). Vasintha for example, in response to a question contained in the core texts '... have you ever made the assumption that you can change someone else's behaviour?' discussed under behaviourist orientations to education notes '... yes ... assignment 1 ... aim to change pupils behaviour [by] forming the [environmental] group'. This example reflects an engagement with core texts to reflect critically on some of the assumptions that underpin practice (DF10, C2). In the section in core text two discussing '... principles of environmental education' Cathy notes the question '... what am I

doing here ... underlying objective' which might indicate reflections on the aims and objectives shaping practice (DF10, C3). An analysis of Anton's course file reflects more interaction with the course readings (DF10, C1). In relation to an extract from a draft discussion document on trends and issues in environmental education he notes '... what about teachers in service ... the role of the Centre in this regard is important' that might point to his exploration of more effective ways of supporting school-based environmental education through teacher professional development processes. Daniel's specific area of interest in the course materials appeared to have been in the case studies included as part of the industry course materials (see 5.4.4). He notes that '... there were a lot of case studies in which I was interested' that appears to respond to his expectations of being exposed to how others were addressing environmental issues and risks in the industry and business context (DF10, C4). An assessment of engagement with the course materials could not be done for Anastelle and Songezo through an analysis of the course files (DF10, C6 & C5). Anastelle's course file does not explicitly reflect engaging with the course materials as in the case of the other four participants (discussed above) and Songezo in an attempt to provide myself, tutors and course co-ordinators¹² with a 'neat and tidy' file removed the physical signs of interacting with the course materials. In addition to the varying ways in which course participants interact with the course materials, these are also used differently in the tutorial groups.

In the ECTG all course materials were explicitly used in the tutorial sessions with more time being spent on some than others (DF7, e-mail, L-10/03/00). Lawrence for example notes that less time was spent with course materials relating to theme two in comparison to those relating to theme three since the latter is the most difficult of all four themes (see also 5.4.4). In this tutorial group all activities and discussions were structured around the course materials and these theoretical perspectives were explored relative to participants' practice and assignment work (see examples in 6.3.1 & 6.3.2). In another example, Jane introduced core text three to participants, using the analogy of a drama (DF8, obs.notes, ECTG 10-11/03/00). The theoretical ideas contained in the core text, highlighting various orientations to environmental education and methods and processes shaped by these, were presented as the stage backdrop. Participants' were then encouraged to consider their practice (methods and processes) represented as the stage and both the presented orientations and practice shaped through these illuminated by a 'questioning' spotlight above the stage. Through this activity and drawing on examples of participants practice, they were encouraged to consider the assumptions that shape their practice, to identify the limitations inherent in these practices and to explore alternative approaches to environmental education in their context. In another

¹² At the end of the course, participants' course files are reviewed to assess interactions with these. These insights are used to assess participation in the course, one of the criteria for the issue of the certificate at the end of the course (see 5.4.5).

example of an activity supporting the exploration of core text two, participants were requested to look at two sets of international principles developed for environmental education that are contained as part of the theoretical perspectives introduced through this theme (DF8, obs.notes, ECTG-22-23/01/00; see also 5.4.4). Participants were then requested to select one or two of these principles that they might draw on in future to support their work in environmental education. Participants were also encouraged to consider five principles that might ‘... guide [environmental education] practice in the Eastern Cape’, specifically. These examples, together with others discussed in 6.3.1 & 6.3.2 provide some insight into the explicit use of core texts in the ECTG. In the ITG, participants largely worked through the course materials on their own. Daniel, for example, notes that he found the course materials to be very useful and relevant ‘... a lot of the theories helped me to understand the shortcomings of our education programme’ and provided him with the opportunity of discussing some of these perspectives with his colleagues. This highlights the significance of the role of formal theory as an analytical lens within which to reflexively review practice (see 4.5.4). Participants in the ITG group generally highlighted questions that they had relative to the course materials and when planning a programme for the tutorial, these questions were forwarded to me and discussions around these questions were integrated into the tutorial programme. For example, towards the end of the course, participants were experiencing some difficulty in working through the various educational orientations in core text three and requested a discussion around this theme to clarify these theoretical perspectives (DF8, obs.notes ITG-15-16/04/00). A discussion around the various orientations shaping practice was included into the next tutorial programme as part of discussions around core text three. Here, I used a diagrammatic presentation of various educational orientations contained in the core text to explore these and encouraged participants to locate their practice within these orientations, identify the limitations in their practice and consider ways to overcome these limitations (DF8, obs.notes, ITG-15-16/-4/00). This was the only occasion in the ITG that core texts were explicitly used in discussions in the tutorial group meetings. In other tutorials some activities from the core texts, for example activity 3.1 in core text three were used to encourage participants to interact further with the core texts (DF8, obs.notes, ITG-10/03/00). Similar to the ITG, in the WCTG course materials were not extensively used in tutorial activities (DF8, obs.notes, WCTG). Initially in the course, some activities contained in the core texts were used around which tutorial activities were structured as well as some of the course readings. For example, activity 2.1 contained in core text two was used to encourage participants to reflect on their own understandings of environmental education (DF8, obs.notes, WCTG 06/11/99). Through recordings in their course files participants define environmental education as, ‘... a process of developing a world population that is aware of and concerned about the total environment and its associated problems and which has the knowledge, skills, attitudes, motivation and commitment to work individually and collectively towards solutions’, as for example in Cathy’s case (DF10, C3). This reflects an

example of Cathy beginning to explore constructions of environmental education. In her course file, relative to this same activity, Vasintha first describes environmental education as ‘... equipping pupils with skills to become critical thinkers and reflect on one’s actions in the various dimensions of the environment’. This entry into her course file is dated ‘... 06/11/09). As the course continues, she later reflects on this initial construction of environmental education processes, and drawing on core text three notes that ‘... I am imposing – behaviourist ... I am equipping them, they are empty vessels. She then redefines environmental education in her course file as ‘... providing learners with the opportunity to develop critical thinking skills to recognise the interlink between various systems and its repercussions on the environment ... so as to take action’, dated 25.02/00 (DF10, C2). This reflects an example of ongoing interactions with course materials in reconstructing thinking and doing in environmental education, and similar to Daniel’s example, highlights the significance of theory in reflexive explorations (see above). During initial tutorials in this group, readings pertaining to core text one were similarly used to support participants in engaging with the theoretical perspectives in the course (see below). Subsequent to these two examples of using the course materials, these were not further used in tutorial activities and participants were requested to work through the core texts on their own and to raise questions that they might have at future tutorials (DF8, obs.notes WCTG 17/02/00). Approximately midway through the course some participants in the group felt that there was a need for more explicit use of the core texts during tutorials and Anastelle requested ‘... more use of core texts to help me understand things better’ (DF8, obs.notes, WCTG-09/03/00). In this example, it would appear that Anastelle’s questions around environmental issues, risks and responses were not being answered and she expressed the need and use of additional resources, in the form of theoretical perspectives, to explore these questions further. Wendy expressed a reluctance to use the course materials in the tutorials since she felt that ‘... I do not understand the theory and do not feel confident to lead a discussion in that field’ (DF7, e-mail, W-06/03/00). This issue emerged at the time of exploring core text three which is by far the most complex of themes, requiring participants to begin critically exploring the assumptions on which their practice is based, to explore the consequent limitations and explore more effective processes in environmental education. Wendy further expressed discomfort with ‘... this co-learning / co-teaching story’. More use of these theoretical perspectives might have supported Anastelle further in her reflexive exploration of approaches to environmental education within the community-based context of Paulshoek. Though course materials were used to a less extent in this group, other resources were however introduced to explore the various themes. For example, in exploring the nature of environmental issues, the Compass Rose¹³ was used as a resource to explore the social,

¹³ The ‘Compass Rose’ is a model developed to help users explore the complex and interrelated nature of environmental issues and risks. It uses the four (4) compass points to reflect the natural or bio-physical (north), economic (east), social (south) and who decides or political (west) dimensions of environmental issues and risks. This model highlights particular questions to be explored, in relation to each of these

political, economic and bio-physical dimensions of environmental issues and risks (Development Education Centre, 1995; DF8, obs.notes WCTG 17/02/00). These examples discussed here reflect the varying ways in which course materials were used in the different tutorial groups. More detail on participants' interaction with the theoretical perspectives introduced through the course is further discussed in section 6.3.4.

Readings contained as part of the course materials provide participants with critical perspectives on environmental education processes and are drawn from popular and academic texts (see 5.4.4). Being an open entry open exit course and given the diversity and difference amongst participants with respect to academic and professional backgrounds, the need often arises to specifically support some participants in the exploration of these readings (Heylings, 1999:111; Molose, 2000:90; see also 5.5). Tutorial group meetings are generally the space in the course where the need for support and mediation of readings arise and are responded to. Amongst the three tutorial groups, course readings were supported and mediated differently in response to the needs of particular participants in different groups. In the ECTG tutors recognised participants' difficulties in engaging with readings early in the course and in response various activities were structured around support and mediating the course readings. Most participants in the ECTG are isiXhosa speaking with English as a second language. All readings contained in the course materials are drawn from English sources. Participants in this group often expressed difficulties in reading and understanding the academic texts included in the course materials (DF8, obs.notes, ECTG-22-23/01/00). In this context, Jane notes that as a result of language difficulties amongst participants '... we work ... with more detail and we don't assume that people understand unless they say so' (DF7, e-mail, J-22/02/00). In this group readings were mediated and supported in two ways. Firstly, time was set aside to support participants in developing techniques to access readings. For example, during one tutorial activity participants shared amongst each other some practical ways to make reading and understanding easier (DF8, obs.notes, ECTG-22-23/01/00). One participant suggested '... highlighting difficult words, underlining them and bringing them up for discussion in tutorials'. Other participants in the group suggested '... read[ing] paragraphs one at a time, then summarise the main ideas in your own words' and '... write down your interpretation of what is being said in your own words in the column at the side of the reading'. This example reflects some practical skills that participants were collaboratively exploring to support the accessing of theoretical perspectives that allows for reflexive explorations of approaches to environmental education. Through another activity in this group, Jane encourages participants to '... practice reading' (DF8, obs.notes, ECTG-10-11/03/00). Jane prepared a list of questions relating to a specific reading and these questions were written up on the board. They included, amongst

dimensions. For example, economic dimensions involve '... questions about money, trading, aid, ownership, buying and selling' (Development Education Centre, 1995).

others, '... what is the key idea / point of the reading ... think of two questions that come to mind while doing the reading ... how does what you have read help you respond in your own work'. Participants were given thirty minutes to do the reading and to attempt a written answer to the questions. Through observation of this activity it appeared that participants initially struggled to start writing down their ideas until they were reassured that this was '... an exercise to practice reading' and they would not be required to present their ideas. This appeared to have created more ease amongst participants to explore the reading and attempt to respond to the questions. This similarly reflects an example that supports participants to access theoretical perspectives on which they could draw in reflexively exploring constructions of environmental issues, risks and responses. The second way in which readings were supported and mediated in this group was to set aside time during tutorial sessions for participants to do some of the readings on their own and to discuss their emerging understandings with fellow participants and tutors. An example of one such activity called the 'hot seat conversation' involved participants doing a particular reading guided by a specific question on the reading drawn from a hat (DF7, obs.notes, ECTG-22-23/02/00). This activity was based on the reading 'The Educational Response to the Environmental Crisis (Janse van Rensburg, 1998)' contained in the course file. Once participants had read the reading they were encouraged to begin a conversation of the main ideas reflected in the reading, guided by their specific question and others then commented on their presentations. This reflects an example of a tutorial activity supporting participants engagement with theoretical perspectives and then offering an opportunity to engage in dialogue around emerging insights, so supporting reflexive deliberations around environmental education processes. Through another activity, participants were encouraged to choose one reading that they felt was specifically relevant to their work context (DF7, obs.notes, ECTG-10-11/03/00). Participants did the reading during the tutorial and presented it to the rest of the group with a particular focus on the relevance of this reading to their work context. Participants appear to have found these activities useful, reflected in some of their comments on the 'hot seat conversation activity', '... the questions helped to understand focus areas ... the questions made it easier' and '... questions simplified the article ... encouraged you to think broader and relate this to what we are doing' (DF8, obs.notes, ECTG, 22-23/01/00). These comments reflect the significance in these activities in supporting processes of accessing academic literature and the latter statement reflects an example of participants moving beyond existing frames of reference. In the ITG engaging with readings was not identified as a particular issue amongst participants, as reflected in Daniel's comment: '...after the first meeting ... I got the course file and started reading it' (DF10, C4). As such no specific tutorial activities were designed for this group to support and mediate readings. In the WCTG at the start of the course some time was spent encouraging participants to share perspectives from the readings they had done (DF8, obs.notes, WCTG-17/10/99). At the first tutorial, readings relating to core text one were allocated to and shared amongst the group of participants. Participants were

requested to do these readings in their own time and prepare presentations of each reading for the next tutorial. Each participant prepared a presentation of at least two readings, summarised the key ideas in these readings and provided each participant in the group with a photocopy of these key ideas, and discussions were opened up in the tutorial group around emerging perspectives from engaging with these readings (DF8, obs.notes, WCTG-06/11/99). This activity reflects an example of a tutorial activity supporting participants in developing and sharing perspectives emerging out of their engagement with theoretical perspectives. Participants comments on this activity were that the '... focus on readings [was] good ... but time consuming and tiring'. Suggestions were made for future tutorial activities supporting an engagement with readings, '... to focus on the relation of readings to the practice of [participants]'. Participants felt that '... [the] process did not necessarily focus on this [relation] ... [and] readings [were] done in isolation'. These comments reflect participants emerging understandings of the significance of theoretical perspectives in critically and reflexively exploring environmental education processes within their context. Subsequent to this activity and participants' comments, they were requested to do readings on their own and prepare questions for discussion at tutorials. Data collected at subsequent tutorials does not reflect any further activities specifically supporting or mediating readings.



Diagram 6.3 *Participants in the ECTG discuss one of the course readings in a group.*

➤ Assessment processes

Assessment and the level of rigour in these assessment processes provides participants with not only a framework to guide learning as discussed in section 5.4.5, but similarly to challenge traditional conceptions of, and approaches to environmental issues, risks and responses in context and to stimulate further thinking and action (see 5.3.3). Rigour in assessment has been (and continues to be) a controversial issue in the course (see 5.4.5 & 5.5), with some participants (co-ordinators, tutors and students) in the course viewing this as a challenge to the open framework of learning traditionally associated with the course (see 1.3 & 3.2). Section 5.4.5 introduces assessment as a *process of learning* intended to provides participants with an ongoing challenge to thinking and doing in environmental education. Section 6.3.2 further introduces some examples of how assessment of assignments have provided participants with the space to continue thinking about and reorganise the way in which they think of and respond to environmental issues and risks. In this sense assessment, and the extent of rigour in these assessment processes should be seen in terms of its potential to encourage participants to explore new and different approaches to environmental education, beyond those conventionally known to them and together with all the insecurities that this exploration potentially holds.

An analysis of assessment processes in the three tutorial groups reflects different orientations and approaches. In the ITG and the ECTG, various incidences were observed within which the orientation to assessment was discussed together with discussions around the orientation and aims of the course (see above). In the ECTG, in response to one participant raising the issue of ‘... problems with responding to comments ... misunderstanding of what is being asked’ Jane discussed assessment comments with participants as ‘... suggestions ... it is up to you to take comments and use these to further explore’ approaches to environmental education in context (DF8, obs.notes, ECTG-22-23/01/00). This discussion appears to have clarified for participants the role of assessment in supporting reflexive processes (see 3.3.3). In the ITG, a similar discussion helped Daniel to understand assessment processes in the context of reflexive learning processes (DF10, C4; see also 3.3.3). In reflecting on his experience of assessment processes he notes ‘... it was a change ... I am very used to writing exams and getting to know my pass mark or not getting the pass mark ... it is very goal orientated’. He further notes that discussions around assessment helped him ‘... to understand the orientation to assessment as learning a bit better’.

Assessment comments made by tutors were fairly uniform across the three groups, with tutors adopting a questioning approach to assessment as is encouraged amongst tutors in the course (see 5.4.5). Participants in the WCTG and the ECTG received critical comments from two tutors thus enhancing the feedback received. Given that I was the only tutor for the ITG, only one set

of comments was received by participants in this group. In the ITG I commented on assignments generally in relation to the ideas presented in the assignment through comments and / or questions marked in the text, intended to encourage participants to think further through the ideas presented (DF4, ass 1.1 – 3.2). For example, in the absence of a discussion of impacts of the environmental issue discussed in Daniel's assignment one, I included the comment '... are there any long term or invisible impacts which you can explore here' relative to a discussion of managing the pollution of water courses in the mining context (DF4, ass1.1). In addition, feedback was also provided relative to the assessment criteria developed through negotiation amongst participants for that assignment (see 5.4.5). For example, one of the assessment criteria defined for assignment two includes, amongst others '... reflect critically on environmental education and training in your context in relation to the two sets of principles in reading 3.30' developed in relation to the assignment brief (see 5.4.5). In response to this particular assessment criteria and relative to the assignment, I included the comment '... good description of [environmental education and training] processes ... you might have considered drawing on a few specific principles as suggested by my comments here' (DF4, ass 2.2). In the ECTG, Lawrence and Jane provided general comments in relation to discussions contained in the assignment text (DF5, ass 1.1 – 4.2). For example, Songezo's initial drafts of assignment one reflect a general description of plastic pollution (DF5, ass 1.1 & 1.2). In encouraging Songezo to focus his discussions more on his specific community context, Jane comments '... this is a[n] improvement on your first draft ... you have looked at the issue with more depth ... you still seem to be struggling to focus down on your particular issue ... and tend to talk about environmental issues in general ... what may help ... is looking at the nature of your particular issue in more detail ... tell the reader exactly what you are exploring ... this may help you to stay focussed ...' (DF5, ass 1.2). Similar to the ITG, in the WCTG Wendy provided feedback through comments and questions raised in the text of assignments and also relative to assessment criteria developed for this group (DF 1-3 & DF 6). For example, in commenting on Anton's assignment three and descriptions of methods and processes used in environmental education processes in his context, Wendy notes '... trends in [environmental education] are not linked to what you do ... OBE ... Curriculum 2005 ... how are you dealing with these changes?' (DF1, ass 3.2). In commenting on Vasintha's second assignment, Wendy raises the comment '... this assignment requires you to give the why ... why are you wanting to green your school ... why are you wanting to develop respect for the environment ... what principles does [the environmental education programme] relate to?' (DF2, ass 2.1). Relative to assessment criteria developed for assignment one, namely '... nature ... causes ... effects ... reference to O'Donoghue model' her comments on Cathy's assignment include '... posed as a question which is very interesting ... the issue is personal because the questions relate to the effectiveness of your teaching', '... well done', '... not explained enough' and '... not referred to directly but all four aspects mentioned', respectively (DF3, ass 1.1). These examples of

comments made by tutors reflect a challenge to participants to think through different aspects of their work and to further explore specific aspects relative to the assignment brief and assessment criteria developed. As such, their intention appears to be supportive of an exploration of reflexive environmental education processes in context.

Similar to the critical role of commenting on assignments, feedback on assignments play a crucial role in supporting participants to further explore initial ideas and perspectives developed in assignments (see 5.4.5). In the ECTG, in addition to discussing the orientation to assessment in the course (see above), Jane also attempted to clarify for some of the participants comments made on assignments. For example, one participant felt that the comments made on her assignment ‘... redirected me into a new issue ... not relevant to my work’ and Jane clarified the comments made on the assignment relative to the initial issue that this participant raised in her assignment work. This example, points to the critical need for clarifying the comments made on assignments through processes of feedback. Feedback on assignments was provided differently and to differing extents amongst participants in the three tutorial groups. In the WCTG, feedback on assignments comprised of general discussions of specific trends across all assignments (DF8, obs.notes WCTG). For example, in the second tutorial for the WCTG, Razeena (the initial support tutor - see 1.4) discussed with participants a lack of reference to the theoretical perspectives contained in the course materials, as a way of encouraging praxis amongst participants (DF8, obs.notes, WCTG-17/10/99). She notes that ‘... most people avoided using the ‘isms’ ... ‘ in reference to some of the primary beliefs and values raised in core text one out of which environmental issues and risks emerge, for example, scientism, technicism, modernism, consumerism, amongst others. This point appears to have been raised as a means of encouraging the deeper exploration of the socio-ecological factors out of which contextual environmental issues and risks emerge. In the same tutorial another example was to discuss with participants the use of headings and subheadings as a way of encouraging a clearer and concise articulation of ideas. Following the assessment of the first draft of assignment two, I undertook a similar general discussion of critical reflection and praxis as areas that I found needed to be addressed in assignments amongst participants in this group (see example in 6.3.1). Subsequent to these discussions in initial tutorials, feedback was provided through comments in the individual assignment texts of participants and through an attached comment sheet relative to the assessment criteria developed. In the ITG feedback similarly took the form of highlighting general issues emerging from assignments and attempting to relate these issues to the course orientation and aims (DF8, obs.notes, ITG-10/03/00; see also 6.3.1). Participants in this group generally appear to have had clarity on the assessment comments, evident in responses to these comments in subsequent drafts (DF4, all assignments). For example, in draft one of assignment two, Daniel discussed environmental management processes at the level of policy and referenced the policy to a large extent in

commenting on the strengths and weaknesses of the environmental management system (DF4, ass 2.1). In response to my comments to '... focus more on practice, or the practical implications of policy' a subsequent draft reflects more discussion of the translation of environmental management policy into practice in the context of Khutala Colliery. Feedback from tutors to participants in the ECTG was more personalised through both general discussions of main trends in assignments and one-on-one discussion with participants focusing on specific comments in individual assignments (DF 8, obs.notes ECTG). For example, in one tutorial activity participants were asked to review the comments on their assignments and to share their responses to these with the rest of the group (DF8, obs.notes, ECTG-22-23/01/00). Gladys, one of the participants in this group notes that she had a problem with understanding some of the comments and Jane attempted to clarify these comments for her (see above). Following from these discussions, Jane asked participants to reflect on '... how they feel about the comments' and a discussion ensued as to the purpose of these comments (see above). In another activity in this tutorial group, while other participants were busy doing readings, Jane and Lawrence met individually with different participants to discuss the feedback on assignments, and so supporting ongoing deliberations around environmental issues, risks and responses (DF8, obs.notes, ECTG-22-23/01/00).

Responses to assessment comments were more evident in the case of Songezo and Daniel than in the case of participants in the WCTG. Songezo's assignments for example, show a clear progression of ideas from the first draft to the third draft supported through tutor comments (DF5, all assignments). A further example of Songezo reaching greater clarity on ideas and perspectives through engagement within the assessment process is evident in assignment three where Songezo begins his first draft with a discussion of the various orientations to education and Jane comments that '... your assignment shows that you are working through the theoretical ideas ... now you just have to relate these ideas more firmly to your own project' (DF5, ass 3.1). In draft two of this assignment Songezo begins to discuss some of the methods and processes that he envisages for his project in relation to these theoretical perspectives (DF5, ass 3.2). He discusses for example, a workshop he plans to use '... the main purpose is to share ideas, knowledge and experiences about ... [integrated waste management] ... and to construct new knowledge' which he describes as 'constructivism is the theory that has influenced me because it allows participation, discussions and construction of new ideas'. Daniel's assignments similarly reflect responses to the tutors' comments. Comments on draft one of assignment one encourage Daniel to explore more of the long term and invisible impacts of the coal mining process (DF4, ass 1.1). In the second draft of the assignment he begins to explore the effects of open cast mining in '... river diversions ... farmers ... having to relocate ... land use characteristics will change from farming to grazing land' amongst others (DF4, ass 1.2). An analysis of assignments amongst participants in the WCTG reflects varied responses

to tutors' comments. For example, all participants in this group were requested to develop assignment one to third draft through which they focus more on the impacts of the environmental issues and risks noted in the first and second drafts (see 6.3.2). Of the six participants two responded to this request which means that for many participants in this group the impacts of issues and risks remain unexplored through assignment work challenging the reflexive exploration of processes that respond to the unintended consequences associated with these environmental issues (see 2.6 & 5.2). Participants in this group appear to have linked the assessment process to the outcome of a certificate at the end of the course. They appear to have resisted full engagement with assessment processes as a way of challenging the traditional emphasis on certification. Eureka, the third successor for support tutor in the group notes that '... most participants in the group valued diversity and interactions in the course more than the outcome, the certificate' (DF8, obs.notes, WCTG-06/05/00; see also 1.4). A misunderstanding of assessment processes in this group can similarly be seen in the controversy that existed amongst tutors, as to the number of assignment drafts necessary in response to assessment comments (see above).

In all tutorial groups assessment criteria were developed for each assignment, though in the WCTG participants experienced this process differently than in the ECTG and the ITG. As noted before, in the ITG and ECTG the negotiation of assessment criteria was viewed positively as contributing to professional development (DF8, obs.notes, ECTG-22-23/01/00; DF8, obs.notes, ITG-10/03/00; see also 5.4.5). Participants in the WCTG experienced the process of negotiating assessment criteria differently and '... felt that they were not learning much from the process of deciding on assessment criteria' (DF8, obs.notes, WCTG-06/05/00). This sentiment is similarly reflected in a tutorial in which participants were requested to come prepared with some assessment criteria for the assignment, to be negotiated amongst all in developing a single set of criteria (DF8, obs.notes, WCTG-06/11/99). At the next tutorial, one person had developed a set of criteria, this being accepted by the rest of the group with very little discussion or negotiation amongst other participants (DF8, obs.notes, WCTG-28/11/99). Participants in this group thus engaged with processes of negotiating assessment criteria to a lesser extent that might have had the effect of these participants playing less of a role in defining their own learning in the course and so challenging the intention in the course to foster an open-ended framework of learning that encourages the reflexive exploration of approaches to environmental education (see 5.4.5).

Self-assessment was encouraged in both the WCTG and the ECTG but was approached differently in the two cases (see 5.4.5). In the 1999/2000 course a national set of assessment criteria was developed but this only reached participants after they had completed their first assignments (see 5.4.5 & 5.5.2). In the ECTG these national assessment criteria were used to

assist participants in reflecting on their own learning thus far in the course (DF8, obs.notes, ECTG-22-23/01/00). Participants reviewed their own assignments in relation to these criteria and participants note that they found it a useful experience. Songezo notes that this exercise showed '... where you are ... what are the weaknesses ... what are the strengths'. In the WCTG self-assessment took the form of participants reflecting on the process of developing their assignments (see 5.4.5). For example, Anastelle writes at the end of her second assignment '... I found writing this essay very challenging and not as easy as the first assignment ... I found myself spending a lot of time analysing the existing documentation of our project' (DF6, ass 2.1). Attached to assignment three, Vasintha writes '... perhaps my understanding of why is not analytical enough ... but it is a process' (DF2, ass 3.1). No self-assessment was done amongst participants in the ITG. Despite the different ways in which it was undertaken in the two tutorial groups, the aim of this self-assessment process appears to be uniform in encouraging participants to reflect on their learning in the course and to identify areas for further exploration as reflected in the examples above.

Peer assessment was encouraged in all groups. In the ITG, participants paired up and shared assignments and exchanged ideas about their work. Of his interaction with the rest of the ITG participants Daniel notes that '... I felt a lot of benefit in talking to the rest of the industry group' (DF10, C4). In the WCTG and the ECTG participants shared draft assignments with each other (see 5.4.5) '... as an easier way of sharing ideas' (DF8, obs.notes, ECTG-22-23/01/00) and helping each other in articulating their ideas (see 5.4.5). Peer assessment in the course is a significant process in supporting the ongoing deliberations and interactions amongst participants around environmental issues and risks and processes through which to respond to these educationally.

➤ Interactions and deliberations amongst participants

As noted before in section 5.4.6, participation, interactions and deliberations are significant processes that support and challenge the way in which we think about environmental issues and risks and the way in which we respond to these through educational processes. Through the research and an analysis of data various incidences of interaction and deliberations were evident that supported meaning making amongst participants in the course (see 5.4.6). These interactions and deliberations amongst participants were varied and diverse ranging from interactions amongst individual participants in the group, interactions within the tutorial group as a whole, interactions and deliberations within the broader learning network provided for in the course as well as interactions with work colleagues in professional context.

Various incidences of interactions and deliberations are evident amongst participants linking with one or more participants in the regional tutorial group to support their work. Some examples of these interactions have been highlighted in the discussion of peer assessment in 6.3.4. Through other examples of interactions and deliberations, perspectives on contextual environmental issues and risks were shared and challenged and participants collaboratively explored approaches to environmental education in context, providing evidence of the development of collective reflexive agency in the context of exploring effective approaches to responding to environmental issues and risks (see 6.3.5). For example, in doing assignment one Vasintha struggled with conceptualising the causes and impacts of '... a lack of parental participation in the school' as the environmental issue to which she was responding (DF10, C2). Through initial discussions the causes of this issue appear to have been mixed into the impacts and she notes that she struggled to separate the causes out from the impacts. Some participants in the WCTG, when developing assignments would phone each other for discussions around their initial ideas. In her self - reflections attached to the second draft of assignment one, Vasintha writes '... discussions with Olwen Gibson very valuable ... help[ed] me structure and separate my cause and effects' (DF2, ass 1.2). This reflects an example of Vasintha reaching greater clarity on environmental issues in her context through interactions and deliberations with a fellow colleague. In another example, Cathy did the course together with a colleague who teaches at the same school as she does (DF10, C3). She notes that she and Jacky were able to support each other through the course '... discussing ... reading through assignments ... give each other support and advice on these'. She further notes that in the school context, they were able to plan combined fieldtrips integrating environmental education and after the course they have '... continued support and discussions and still combine their fieldtrips ... OBE has a more integrated approach and the departments have to liaise'. In another example, both Vasintha and Anton decided to run a teacher professional development workshop in their professional contexts exploring perceptions of environmental issues (DF10, C1 & C2). As noted before, Anton was to run this workshop for teachers visiting the Centre and participating in the Walters / ABSA programme and Vasintha ran the workshop for colleagues at her school. In developing the programme for these workshops and through ongoing deliberations and interactions, some ideas were exchanged between them to inform the workshop programme. For example, both Anton and Vasintha felt it would be worthwhile to explore how teachers perceive environmental issues in their context and what are some of the environmental issues that emerge in their context, prior to the workshops. These two participants then collaboratively developed a questionnaire that was sent out to workshop participants prior to the workshop. This questionnaire was also used by Jacky (another participant in the WCTG) in her school context to gauge her colleagues' perceptions of environmental issues and risks. This provides an example, of the collaborative exploration of environmental education processes in different professional contexts supporting school-based

programmes. In another professional context, Daniel notes that through deliberations with Beverley, a fellow course participant in the ITG, who worked closely with issues of health and safety, he was able to challenge some of their approaches to health and safety issues at Khutala Colliery (DF10, C4).

All participants note the value derived from presenting assignments for discussion at the tutorial meetings and discussions emerging from these presentations. These presentations and discussions appear to have supported participants in developing clearer conceptions of environmental issues and risks and environmental education processes in context. For example, in assignment one Anton initially described the issue to which he would like to respond in his context as ‘... the role that teachers should play in introducing environmental education at their schools’ (DF10, C1). When presenting this idea at a tutorial, he is challenged by Jacky, a fellow course participant in the group, to reflect on his own role at the centre in achieving the aims of his environmental education programme (DF8, obs.notes, WCTG-17/10/99). Through subsequent assignment work, Anton continues to focus on the role of the teacher in supporting school-based environmental education processes, but begins to explore the role of the centre in supporting the work of teachers back at their schools (DF10, C1). This becomes evident in ‘... *ek is nie altyd seker nie of ek die nodige doen om opvoeders te inspireer om a groter rol te vervul om omgewingsopvoeding tot sy reg to laat kom*’¹⁴. This is further evident in Anton’s further focus in assignment four on a teacher development workshop that he ran at the centre for teachers participating in the Walters / ABSA project (see 6.4.1). Tutorial discussions appear to have been similarly significant in Cathy’s case in supporting her to identify a particular issue of concern in her context (DF10, C3). In developing initial ideas for the assignment, Cathy considered the issue of water wastage after which the issue of environmental awareness amongst her learners began to take shape (DF8, obs.notes, WCTG – 17/10/99). Through discussions with colleagues during this tutorial session she decided to focus on ‘... a more personal account of my own role in the environment’ and begins to explore ‘... a lack environmental literacy and an active response to the environmental crisis’.

Some participants were able to draw support from the broader learning network offered through the course (see 5.4.6). For example, Songezo struggled with finding support for his community based environmental education programme (DF10, C5). He initially planned to run the programme with support from the local municipality, but this support was not realised. At the last national workshop, Songezo was able to discuss these issues of support with one of the tutors who is connected within the waste management community nationally (DF8, obs.notes,

¹⁴ Anton’s mother tongue is Afrikaans and some of his initial assignment work was prepared in Afrikaans. Translated this statement reads ‘... I am not always sure of whether I am doing the necessary to inspire teachers to play a bigger role in bringing environmental education to its rightful place [in schools]’.

NW – 07-09/07/00). Tembeka was able to refer him to ‘... some other people’ through whom he could ‘... possibly raise some funding for the programme’ (DF10, C5). In the WCTG, Anastelle’s interest in community-based projects was somewhat isolated given the strong focus in this group on teacher development and school-based support for environmental education (DF10, C6; see also 1.4 & 3.5.3.2). At the final workshop she was able to interact within a broader network of participants some of whom were similarly exploring community-based projects, such as Songezo for example (DF8, obs.notes, NW – 07-09/07/00).

Some participants used opportunities provided for in the course to interact with colleagues around approaches to environmental education in their respective work contexts. Cathy’s interaction with her colleague Jacky who was also a participant in the course, reflects one example of such interaction (see above). This example reflects ongoing deliberations around environmental education, beyond the context of the course and Cathy and Jacky continue to explore more effective approaches to environmental education in their school context. In another example, through the work of assignment two Anton was encouraged to discuss with the head of the CCE the opportunity of reorienting the aims and objectives of the Centre, who admitted the limitations in these and the need to address them (DF10, C1). This example similarly reflects Anton’s reflexive exploration encouraging others in the work context to engage in a reflexive critique of existing approaches to environmental education. Through her exposure to a range of resources in the course, Vasintha introduced the environment club at her school to the ‘A year of Special Days’ booklet to which she had been introduced in the course, that came to guide much of the subsequent activities of the environmental group around specific environmental calendar days (DF10, C2; Davies, 1997; see also 5.4.2). Some of these activities were introduced into the school’s official extra-mural programme whereas before the activities of the environmental club were confined to after school and weekend activities (see 6.2.1). Some of these activities were also undertaken as a school programme thus involving the whole school community. This example reflects Vasintha challenging the conventional role of environmental education as an extra-mural programme and bringing it closer within the official school programme. It similarly reflects Vasintha realising (in part) her vision for environmental education in the school, undertaken across all school subjects and including the whole school community (see 6.2.2). Daniel discussed some of the core texts with the environmental officer in his department (DF10, C4). The environmental officer, through his own initiative, contacted the social responsibility officer and together they explored the possibility of supporting local schools in environmental education initiatives. Daniel feels that ‘... the department is moving towards a broader understanding of the environment and things are obviously starting to change very slowly’. This example shows Daniel’s interaction with others in the work context around perspectives in environmental education shaping the vision for future programmes. In a further example, Anastelle through the work of assignment three was

encouraged to challenge current approaches to planning and organising community meetings in Paulshoek (DF10, C6). She notes a change in approaches to these meetings to which she feels she has contributed when tasked with organising ‘... something quite different ... involving workshops and fieldtrips’ during the course. Her Anastelle was able to challenge dominant thinking and approaches to environmental education in the NBI context (see 6.2.2).

6.2.4 Summation

Cases in case study research are complex entities operating in multiple social contexts, as introduced in section 3.5.2. Contexts of change as discussed in this section attempts to provide the reader with a descriptive and explanatory account of the multiple social contexts within which the cases are embedded and through which reflexive agency amongst the six case study participants have been shaped (see 3.5.1). This in an attempt to foreground the social epistemology within this multiple embedded case study approach to explore how participants have engaged in reflexive processes (and the socio-historical factors that have shaped their engagement in these reflexive processes) and so give specific meaning to the cases of reflexive agency (see 3.5.1 & 3.5.3).

This section takes the reader through a detailed account of the academic background of participants and their experience in environmental education processes to provide some insight into contexts that have shaped reflexive agency through environmental education processes offered through the course. For many participants, participation in these reflexive processes in the course emerged from within the broader context of transformation in South Africa as well as the more specific professional contexts of participants at the time of the course (see 6.2.1). Cathy, Vasintha and Anton were for example reviewing their practice in the context of change in education and training and more specifically the introduction of outcomes-based education for General Education and Training through Curriculum 2005 (see 6.2.1). Daniel was exploring environmental education processes in the context of the need for improved environmental management performance as the pressures on industry and business increased for more efficient productive processes in relation to the increasing scope of environmental issues and risks in this context. For Anastelle and Songezo, the emphasis was on addressing some of the socio-economic disparities that continue to plague South African society in the period after the fall of the National Party government. From these examples context emerges as significant in shaping reflexive agency and these examples highlight the range of trends and patters (globally and locally) that have come to shape participants interaction within reflexive processes.

This section further explores the professional context of participants as a way of providing insight into conventional and existing orientations to environmental education processes in

these contexts (see 6.2.2). The intention with this overview is to provide the reader with some insight into the role of knowledge and power, and the emerging roles and identities in enabling or constraining change in context, a crucial framework within which to review processes of change within a social epistemological approach. This overview begins to illuminate some of the dominant conceptions of environmental issues and risks in professional contexts and some of the conventional approaches to environmental education processes in these contexts. For example, in Daniel's context, environmental education has traditionally been approached with a focus on issues of safety, health and environment, these approaches coming into conflict with broader trends and patterns in environmental management processes, both globally and regionally that support an equal focus on and prioritising of economic, social and environmental issues. For Anton, Vasintha and Cathy curriculum change through Curriculum 2005 has shifted environmental education processes in the school context from the periphery of extra mural activities or locating it within specific subject areas to a cross curricula concern being integrated into all learning areas across all grades, so challenging the conventional role of environmental education in the school context (see 6.2.2). Anastelle's challenge was a critical reorientation of approaches dominated by scientific rationality towards prioritising responses to the widespread socio-economic issues that confront communities in the Paulshoek community. Out of Anastelle's case emerges the difficulty and possible reluctance on the part of scientific researchers in the institution to reorient responses and begins to highlight the relations of power embedded in conventional approaches to environmental education in this context (see 6.2.2). Reflexive agency in this case begins to reflect a challenge to these power relations inherent in traditional and dominant approaches to environmental education. Various participants, in their various positions and in their respective organisations were confronted with challenging conventional ways of doing things, for example the critical role of policy in the school context to support change. Cathy and Vasintha's cases for example begin to highlight certain constraints to change evident in both of them expressing the need for policy change from 'the top down' in giving effect to processes of change, which might begin to reflect the role of power in constraining processes of change (see 6.2.2). The 'effects' of power emerging from within dominant knowledge frameworks similarly emerges in participants' expectations of being told what constitutes environmental education (see 6.2.2) thus placing the experts in the role of defining processes of change. These discussions begin to highlight some of the dominant frameworks of knowledge (and the power relations embedded in these) out of which reflexive agency has emerged and within which reflexive environmental education processes are further explored, as a way of signifying some of the possibilities for change and also some of the potential constraints to change.

This section is finally concluded with a detailed account of the learning contexts provided for in the course within which participants interacted. In this section various course processes are

discussed and an overview provided of participants interaction within these processes as a way of illuminating the course processes that enabled and supported an engagement in reflexive processes. In the context of Beck's (1999:120) thesis of reflexivity, a key feature within reflexive processes is the emergence of conflicting rationalities. The discussions in sections 6.2.1 and 6.2.2 highlights the contexts out of which these conflicting rationalities begin to emerge. Section 6.2.3 provides insight into the specific course processes that have enabled further engagement and exploration within these conflicting rationalities. For example, the longer-term and ongoing development and assessment of assignments allows participants the space to engage within these conflicting rationalities as they begin to reconstruct understandings and responses to environmental issues, risks and responses. Various interactions and deliberations, for example, amongst course participants, amongst course participants and others in the work context and interactions within theoretical perspectives in the course provides the opportunities for engaging within '... pluralistic knowledge claims' that opens up opportunities for exploring new and different ways of thinking about and acting on environmental issues and risks. This section begins to highlight some of the conflicting rationalities emerging out of reflexive processes, these being further discussed in section 6.3.

Out of these rich and descriptive accounts of multiple social contexts begins to emerge 'instances' of reflexive agency. In Anton's case for example, he was prompted to do a B.Ed degree out of interest in the socio-historical factors shaping teaching and learning in the South African context (see 6.2.1). He was further prompted to do the course with an interest in exploring why individuals do things the way that they do. Cathy was similarly uncomfortable with her practice and was looking for ways in which she could enhance her practice. Anastelle was looking for a way in which she could combine her science education background with issues of community development in the interest of supporting processes to address socio-economic issues. Daniel joined the course with an uneasiness about the way in which environmental education was being approached in his context, knowing that individuals in the mining context all have technical qualifications with less exposure to teaching and learning processes. Vasintha and Songezo were looking for practical ways in which they could improve their practice in context. From these examples it becomes evident that reflexive agency emerges from within, and is shaped by context, as proposed through structuration theory (see 1.5.1). From these examples it similarly becomes evident that reflexive agency involves the emergence of conflicting rationalities as participants bring new, different and evolving insights to bear on conventional and dominant thinking and action around environmental issues, risks and responses. From this data it similarly becomes evident that reflexive agency cannot be pinned down to a specific experience or participation in a professional development processes. It needs to be considered in terms of a longer-term and ongoing process of actions and interactions within social context. This discussion of contexts of change has been offered as a

way of providing the background around which to critically review participants' engagement in reflexive processes and the development of reflexive competence enabled through interaction within course processes in the RU/GF course, as discussed in the following section.

6.3 REFLEXIVE AGENCY

In structuration theory, through recognising the duality of structure people are considered to be '... active social agents' who have the capacity to produce, reproduce and change social structure, while at the same time drawing on these social structures, systems and processes in social action (Tucker, 1998:56). In this sense structure is seen as both enabling and constraining and becomes both the medium for and the outcome of social action as the mediating link between social agents and structure (see 1.5.1). Giddens (1990:36) recognises reflexivity as a key and defining feature of social action, recognising social agents capacities to reflect on, monitor and modify actions on an ongoing basis in light of new knowledge coming in about these social actions (Loyal, 2000:53). As such, a conception is offered of reflexive agency emerging in relation to social structure, with the potential to produce, reproduce or change social structure (see 1.5.1). Section 6.2 provides a detailed and descriptive account of the social structure, systems and processes out of which reflexive agency emerge and is shaped. The following section extends this account of reflexive agency, through providing an analysis of participants' engagement within processes that move thought and action beyond the binds of the social structure that shape that thought and action

Knowledge and consequent actions of social agents are bound by spatial breadth as well as unacknowledged conditions of actions and the resultant unintended consequences of actions (see 1.5.1). Beck (1999:131) notes that reflexive processes involves both an acknowledgement of the boundedness of consciousness and actions and a further exploration of unawareness (what is not yet know) and the social conditions within which unawareness is constructed (how and why we come to not know) to open up possibilities for knowing and acting differently (see 1.5.1 & 4.6.3). In this sense, Loyal (2000:31) argues that reflexivity involves primarily the elucidation of human actions '... not only in terms of their intentionality but also in terms of their motivation and subsequent side effects'. As noted before in chapter 5 and discussed in section 6.2.3, the RU/GF course provides a range of opportunities through which to critically reflect on thinking about environmental issues and risks and environmental education processes as a response to these issues and risks. The reflexive intention of the course being to support participants in understanding practice, to reflect critically on practice so as to highlight limitations and constraints in thinking and action and to explore more effective processes through which to respond to environmental issues and risks in context. The following section discusses participants' engagement in reflexive processes and the development of reflexive competence

in the context of the RU/GF course. In this discussion I draw on the analytical framework introduced in section 3.7.2 that highlights a number of integrative elements to reflexive competence. Here I draw primarily on Beck's (1999) thesis of unawareness as the central focus in reflexive processes, Giddens' (1979) account of reflexive agency shaped by and in turn shaping social structure and Popkewitz's (1999) social epistemology of understanding thought and action in socio-historical context as a means to challenging 'norms' and conventions of social action and interaction (see 1.5.1 & 3.7.2).

6.3.1 Reconstructing environmental issues and risks in context

Environmental issues and risks are often constructed, communicated and managed within dominant, scientific knowledge frameworks and through power relations embedded in them (see 1.5.1 & 2.6). An example of this might be seen in traditional educational practices that links environmental education processes to particular subject areas often the natural sciences and geography with dominant approaches reflecting processes of transmitting knowledge to raise awareness and intended to effect change (see 6.2.1). The construction, communication and management of issues and risks are often shaped within particular socio-political and economic interests that entrench particular roles and identities in society (see 2.6). As such, environmental education is increasingly being seen as social processes of change challenging the structures, systems and processes through which environmental issues and risks are created and managed (*ibid*). Engaging in reflexive environmental education processes in response to these environmental issues and risks requires a careful consideration of how these risks are constructed in society, how they are communicated and managed and why we know and don't know about issues and risks (see 2.6 and 5.2).

Often participants join the RU/GF course with a view to exploring in more depth environmental issues and risks that confront them in context and with a need to explore more effective processes through which to respond to them (see 6.2.1). A large focus in the course is to challenge narrower perceptions of environmental issues and risks as being exclusively associated with nature and to challenge conventional approaches to environmental education. Most participants often note a change in conceptions of environmental issues and risks as the one of the more significant experiences of the course. Changing conceptions of environmental issues and risks similarly emerge amongst the six case study participants in this research. These changing conceptions of environmental issues and risks often leads to changing conceptions of environmental education processes in response to these issues and risks.

As reflected in section 6.2.1, some participants joined the course with a broader conception of environmental issues and risks. Anton for example notes in his pre-course assignment '...

many still think of the environment as nature areas [and environmental education] as the process we should use to protect natural areas (DF10, C1). He further notes in this assignment that environmental problems ‘... are the result of our modern lifestyles and are not only about the natural world ... but caused by and related to political, social and economic factors’. Prior to the course it appears that Anton was concerned with narrow conceptions of environmental education in the school context and was exploring some ways of challenging these narrower and perhaps dominant perceptions. He further notes that he also initially saw the environment as ‘... a physical world of nature at risk’. Through his experience in environmental education, he has come to see the environment as ‘...more than bio-physical ... which also include political, economic and social processes where people are at the centre of the environment’. This evolving conception of environmental issues and risks addresses Beck’s (1992:24) concern for environmental issues ‘... atrophying into a discussion of nature *without* people, without asking about matters of social and cultural significance’ (original emphasis). Other participants joined the course with more of a ‘green’ perspective on the environment and environmental issues and note a change in these conceptions of environmental education through the course. Vasintha for example, joined the course with an association of environmental education to ‘... greening the school’ (DF10, C2). She notes that ‘... my concept of the environment was limited to the natural / bio-physical environment ... I now realise how vast and interrelated the various dimensions are’.

In theme one, participants are introduced to the O’Donoghue model (1995:8; see also 5.4.1) as an analytical framework within which to critically analyse the construction of environmental issues and risks in their context (see 5.3.3). All participants draw on this analytical framework in their explorations of the nature, causes and impacts of contextual environmental issues and risks through the work of assignment one (see 5.4.1). As a result of Anton’s discomfort with the lack of school initiatives in environmental education, he begins to explore ‘... *die rol wat die opvoeder veronderstel is om te vervul om toe te sien dat omgewingsopvoeding binne skole tot sy reg behoort to kom*’¹⁵ (DF10, C1). In this assignment Anton begins to explore some of the issues that are likely to have given rise to teachers’ reluctance to initiate environmental education processes in their schools. Some of the causes he cites include the conventional role of environmental education as an extra curricula programme and teachers’ possible perceptions of environmental issues being the domain of ‘... environmental organisations, national governments, community organisations, NGOs, etc.’ (translated). He similarly begins to explore the history of curriculum in South Africa through which syllabi were prescribed in terms of content and processes through which to transmit this content. He further notes that ‘township’ schools were often viewed as an extension of the apartheid government resulting in a lack of

¹⁵ Translated – ‘... the role that the teacher should play to ensure that environmental education is brought to its rightful place in the school context’.

ownership of these schools within the community and consequent apathy amongst teachers as to the teaching and learning environment of the school. Vasintha's concern raised in her first assignment is the physical state of the school and the lack of parental participation in school affairs (DF10, C2). She notes that as schools become integrated in the post apartheid period it becomes difficult for their school to compete with former Model C schools, with learners having to travel long distances past Rylands Primary to these schools (see 6.2.1). The environmental club was established in response to this concern and amongst the colleagues that supported the establishment of the club it was felt that if the school was aesthetically pleasing, this would attract learners. She joined the RU/GF course with a concern that '... the lack of parental participation in school and a general sense of apathy amongst parents is hindering the development of the school'. She begins to explore some of the causes of this issue as being '... parents were marginalized from decision making ... traditionally ... lack of ownership contributed to this feeling of apathy'. She further begins to explore the policies of separate development and group areas in the past political dispensation as resulting in people's apathy towards their physical surroundings with overcrowding and associated social issues emerging from within poorer socio-economic areas. Through interactions within various course processes Vasintha begins to explore the environmental issues and risks in the context of her school beyond dominant constructions of issues associated with nature. Through assignment one Cathy explores '... school leavers are not environmentally literate and active citizens' with some of the causes of this issue cited as '... cultural hegemony ... technicism, consumerism and the role of the media' (DF10, C3). Cathy notes that '... many powerful messages were and are still being communicated' through processes of teaching and learning and '... it is taking some time to adjust to the "educator – learner" complementary relationship where we acknowledge that everyone has something to share'. Cathy in this example begins to reflect on power relations embedded and entrenched within dominant knowledge frameworks. She further reflects on curriculum wherein '...environmental issues are compartmentalised into subjects and not taught as life skills' and the role of the media in supporting technicism and consumerism with '... people aspiring to Western consumerist values'. These examples begin to show that participants are beginning to explore environmental issues and risks beyond the mere bio-physical implications and begin to explore some of the root causes of these issues. They similarly reflect that participants begin to reflect critically on some of the aspects that shape perceptions of environmental issues and risks and responses to these, as for example, in Cathy and Anton's case of exploring how teachers and learners perceive environmental education processes. Daniel explores the impact of open cast mining operations on the environment through the work of assignment one (DF10, C4). He cites as the main '... underlying cause' of the impact of open cast mining as being '... modernism ... a belief that by reducing the cost and availability of primary energy to the general public the economy will prosper'. He further notes that '... mining by nature is not a sustainable resource but it is cheap and alternate methods of

power conservation or generation is not vigorously pursued due to costs'. This example similarly reflects the start of exploring environmental impact beyond superficial causes of productive processes, but the values and beliefs that shape these productive processes. Songezo explores the issue of plastic waste in the community of Grahamstown East (DF10, C5). Some of the causes that he explores contributing to this issue are industry's role in supplying the retail trade with plastic bags and the uncritical use of these plastic bags in '... consumers are not allowed to carry their own bags while they go for shopping instead they are provided with plastic bags because there is a fear of stealing'. For Anastelle the issue of concern for her in the context where she works is the '... unsustainable use of natural resources in communal areas' and she begins to explore whether '... environmental education ... can ... serve as a solution' (DF10, C6). In a discussion of the causes of the issue, Anastelle begins to explore the root causes of unsustainable natural resource use, for example, '... apartheid policies of forceful removals and displacement of people from their land discouraged and eroded this nomadic lifestyle which served as an indigenous resource management method'. She further notes a range of socio economic issues, such as '... poverty ... unemployment and the greatest financial contributions ... gained from pensions, welfare and remittances' creating an overburden on the natural resources used for '... grazing, fuel wood for energy' resulting in the *veld* having '... changed from a palatable state to an unpalatable state'. As in the previous examples, these participants are also beginning to explore environmental issues with a consideration for some of the social and cultural issues out of which they have emerged and so responds to a reflexive orientation to exploring contextual environmental issues and risks. For many participants this critical exploration of issues and risks takes them beyond what is conventionally known about environmental education and begins to open up new possibilities for interpreting contextual environmental issues and risks, so addressing issues of unawareness and what is not known as central aspects of reflexive environmental education processes.

As noted before, changing conceptions of the environment and environmental issues and risks stimulate the development of other ways of seeing and approaching environmental education. The Centre for Conservation Education focuses on lessons with an environmental theme which Anton describes as '... tend[ing] to concentrate on conservation as the wise use of (mainly) natural resources and basic ecology' (DF10, C1). He feels that approaches at the CCE reflects more '... than just simply conservation education ... I do focus on politics, history and influence of the built environment on the physical environment' which might indicate initial challenges to dominant conceptions and approaches to environmental education. Through referencing course materials, Anton notes that '... environmental education should empower all peoples and promote opportunities for grassroots democratic change and participation' that reflects the possible recognition of environmental education as social processes of change (see 2.6). Through assignment work and in preparation for developing an environmental education

programme as part of assignment four, Anton begins to recognise the role of teachers, through the curriculum framework to ‘... contribute to education reform to address the need of sustainable living and social justice in South Africa’. Vasintha notes a change in her initial conceptions of environmental education associated with science education through ‘... the course exposed me to alternative perspectives on environmental education through discussions and readings’ which provides an example of exploring what was previously not known about environmental education processes and an opening up to outside perspectives through interactions within course processes in the company of others (see 6.2.2; 1.5.1, 2.6, 5.2; DF10, C2). She notes that ‘... I now realised more about environmental education ... not only bio-physical’ and through exposure to the O’Donoghue model (1995:8) contained in the course materials realised that ‘... there are various dimensions and that history, time and context are equally important and impacts on events’. She further notes in her second assignment that ‘... [environmental education] has progressed from conservation education to a socio-ecological movement of many dimensions ... calls for active community participation rather than consultation and the change of top down approaches’. This reflects an example of challenging dominant knowledge frameworks that places experts in the service of ‘others’. Cathy started the course with much emphasis on stimulating a love and appreciation for the environment (see 6.2.1). Through the course and in exploring ideas for her final assignment she comes to place emphasis on active approaches to addressing environmental issues and risks beyond the school context (see 6.4.3 & 6.4.7). Daniel notes ‘... that [the course] did actually assist me in changing my outlook ... at first I didn’t think that education was needed, now I see the need in the [Interested and Affected Parties] IAPs forum (inclusive of us as being part of the IAPs) ... we can’t produce without input from other people’ (DF10, C4). Daniel describes the nature of prior IAPs meetings as ‘... a backlashing session with each one blaming the other and the mine representatives justifying their operations’. Daniel notes that he sees the future of environmental education processes in this forum as stimulating discussion around ‘... the interdependencies of the social, political, economic and bio-physical of our environment and that solutions to the environmental crisis cannot be found in isolation’. This reflects the developing conception of responses to environmental issues and risks in the mining context being a collaborative endeavour opening up ‘... an enlarged horizon of competing agents, producers and interested parties for knowledge’ about the impacts of mining operations and the increasing permeation of established linear boundaries between knowledge and unawareness (Beck, 1999:120). Songezo’s assignment work and discussions reflect a strong emphasis on community participation and collaborative action (DF10, C5). For example in exploring some of the aims and objectives of his programme he notes that ‘... any [environmental education] programme must integrate knowledge, skills, values, attitudes and actions ... must facilitate equal partnerships ... in decision making’. This example reflects Songezo’s vision for challenging disparate social positions in responding to environmental issues and risks that

confront the Grahamstown East community. For Anastelle '... development in the community' is seen as a priority and she begins to see '... [environmental education] [as] a means to this end' (DF10, C6). She describes environmental education as '... a means to reducing socio-economic and ecological problems and an intervention to optimise sustainability'. She further notes that environmental education '... encourages the integration of political, social, economic and bio-physical dimension[s] and this type of approach which ecological research generally lacks'. Similar to previous examples cited, Anastelle appears to be reflecting on the limitations of dominant scientific approaches to environmental issues and risks in the community in which she works.

Beck (2000:100) notes that '... risks in which people believe are the whip driving the present to make some move' and so highlights future impact as the driving force of present thought and action. Beck (1999:109) further recognises that reflexive modernisation is in essence bound not only to the knowledge of '... foundations, consequences and problems of the modernisation processes' but also essentially bound to '... unintended consequences of modernisation'. This requires an extension of responses that traditionally focus on what is, to include a focus on *what is still to come*. As noted in section 5.4.1 part of assignment one requires participants to begin to explore the impacts of environmental issues and so focus on the risks associated with these. The intention is so that as participants plan future environmental education processes they remain mindful of the longer-term and at times invisible impacts of environmental issues. As noted in section 5.4.1 & 6.2.3, participants appear to struggle with this exploration of impacts or risks associated with environmental issues, which might be the result of more focus in course materials on the causes of environmental issues and risks or possibly the complexity of exploring the nature and causes of contextual environmental issues that might leave less 'steam' for exploring the equally complex notion of risks associated with these issues (see 7.3). Some participants however, do begin an exploration of some of the unintended consequences of thought and action, through the work of assignment one. Vasintha for example, begins to explore some of the impacts of a lack of parental participation in the school and towards the environment that might '... spill over to the child' and result in '... learners becom[ing] disruptive in class ... and in some cases attention is diverted to other petty crimes in school' (DF10, C2). She further notes that in the longer-term '... some of these learners become school dropouts or turn to drugs and crime', which might point to some consideration being given to some of the socio-economic issues that *might* result from learners disinterest in teaching and learning processes at school. Cathy describes '... littering, grafitti and stealing' as some of the '... symptoms of the systems of which we are part and relate directly to attitudes towards the environment' as some of the impacts of learners' lack of environmental literacy (DF10, C3). This discussion appears to place more emphasis on impact within the immediate school context with less exploration of impacts beyond the boundaries of the school. In terms of Beck's

conceptions of risks (1992, 1999) this example might limit critical reflection on the wider and longer-term potential impact of environmental issues and risks beyond specific geographical boundaries and time frames. Impacts were not specifically explored in the initial assignment work of Anastelle and Anton and both participants did not respond to tutors' comments to explore these longer-term and invisible impacts in more depth. For both participants further engagement in assignment writing and assessment processes might have support more of futures perspective in the proposals that they have developed for environmental education in their context (see 6.2.3, 6.4.1 & 6.4.6). Songezo begins to explore some of the economic impacts of plastic pollution in that tourists will not be attracted to the area that '... leads to no jobs and no money' and some bio-physical impacts such as '... marine animals die ... we are using our natural resources ... plastics take a long time to [degrade]' amongst others (DF10, C5). Some of the impacts of open cast mining that Daniel begins to explore include the potential relocation of schools and graves, the contamination of ground and surface water on which surrounding communities depend, the reduction in air quality and the visual impacts of spoil piles, amongst others. In the context of Beck's (1999) thesis of unawareness linked to unintended consequences of thought and action, the exploration of impacts of contextual environmental issues and risks appears to require considered attention in structuring course processes that allow a thorough analysis of these longer term and currently invisible impacts (see 7.3).

The data discussed above reflects participants' reflexive exploration of environmental issues and risks in context. For some this included an exploration beyond traditional constructions of environmental issues and risks and educational processes as for example, in Vasintha and Daniel's case. For others it provided the space for deeper explorations of environmental education as for example in Anton's case. For all participants this exploration provided the space for reconceptualising environmental education as social processes of change and so challenges traditional scientific responses to environmental issues and risks and the role of expert responses within the life context of 'others'. In all cases there appears to be a recognition of the root causes of environmental issues and risks lying in the social foundations, systems and structures out of which they emerge and so open up these to question and possible reconstruction. In this sense participants begin to open up options for change through challenging dominant knowledge frameworks and the power relations embedded in them as they begin to explore other ways of knowing and doing in environmental education (see 4.6).

6.3.2 Exploring socio-historical contexts

Popkewitz and Brennan (1998:5) describe their interest in a social epistemology as '... to consider knowledge as a social practice that generates action and participation'. As noted

before, the course introduces participants to the notion of history and context, highlighting the socio-historical construction of environmental issues, risks and responses and given that these are socially constructed, open these up to change (see 1.3.2). Participants in the course are not explicitly encouraged to interrogate socio-historical contexts, but are however implicitly encouraged to do so in assignment work through an exploration of what shapes understandings of environmental issues and risks and responses and *why* (see 5.4.1). Through a social epistemological approach this exploration of socio-historical factors shaping thought and action explicates social foundations, systems and processes that emerge out of dominant knowledge frameworks, illuminates the constraints in these to change and opens up possibilities for alternative ways of interacting within knowledge frameworks.

Data analysed reflect all participants engaging in processes of critically exploring the socio-historical contexts out of which environmental issues and risks emerge, as reflected in many of the examples discussed in the former sections of this chapter. For example, through the work of assignment one, all participants begin to reflect on the social structures, systems and processes out of which local and contextual issues emerge (see 6.3.1). Anton for example, begins to look critically at how curricula is conventionally structured in the school context through prescribed content and processes that allows little room for teachers to explore alternative approaches to environmental education in the school context (DF10, C1; see also 6.2.2 & 6.3.1). He believes that these expert driven approaches to curriculum has left teachers feeling a sense of ‘... insecurity, disempowered and with a lack of ownership’ over what is being taught and how (DF1, ass 1.2). These examples might begin to indicate Anton’s realisation of disparate social positions in education and the consequences of these. He similarly reflects critically on the narrow orientations to environmental education in the school context through linking environmental education processes within specific areas, for example, in the ‘... Biology class learners are taught about pine trees and fynbos’ (translated). These examples begin to show Anton reflecting critically on the role of environmental education processes in schools and beginning to highlight some of the factors that shape and equally constrain and inter possibilities for change, such as conventional approaches to curriculum change. In this sense, Popkewitz and Brennan (1998:25) argue that through ‘... constructing histories about how our subjectivities are formed’ opportunities are provided for exploring alternative acts and intentions that are not immediately available through commonsense. Vasintha in her assignment work begins to look critically at how parents were traditionally excluded from decision-making processes in the school context and how these have shaped her own approach to developing aims and objectives for the environmental club without parental involvement (DF10, C2). In this light she notes in assignment two ‘... the failure to consult parents when the group was initiated is probably the cause of the lack of participation’ (DF2, ass 2.2). This recognition appears to provide her with the space to explore parental involvement ‘... in the decision making process

from policy making to policy implementation' and so challenge disparate social interactions in addressing environmental issues in her school context. Cathy in addition to exploring the conventional role of environmental education in specific subject areas like '... Biology and Geography' also explores '... a strong sense of cultural imperialism at our school where it is thought that educators know what is best for learners and issues are non-negotiable' (DF10, C3). Daniel in his exploration of the impacts of open cast mining critically explores '... modernism' and the emphasis on cost reduction and profit maximisation as some of the root causes and foundations out of which the issues and risks associated with open cast mining emerge (DF10, C4). Anastelle looks at some of the modernisation processes that has reorganised and reshaped traditional lifestyles of the community of Paulshoek resulting in a '... heavy dependence on the natural resources' which in turn has led to '... unsustainable utilisation and degradation of these areas' (DF10, C6; DF6, ass 1.2). She similarly reflects on the apartheid government's land reservation policies that have shifted people to less fertile and unproductive land, thus challenging people's ability to sustain themselves and thus placing more pressure on the natural resources. Assignment one in particular allows this exploration of the social, political and economic foundations out of which environmental issues and risks emerge and also interactions with theoretical perspectives and deliberations amongst participants in tutorial activities and assessment processes (see 6.2.3). For many participants this becomes an opportunity to start an exploration of alternative approaches that challenge dominant social foundations, structures, systems and processes, as is evident in Vasintha's case for example (see above).

Through the course participants similarly engage in an exploration of socio-historical factors that shape practice in environmental education and through this begin to explore alternative teaching and learning processes and social interactions within these processes. Anton for example, undertakes an analysis of the mission statement of the CCE to better understand the intentions and purpose shaping processes here (DF10, C1 & DF1, ass 2.1). From this analysis, and in light of exploring in more depth environmental education processes, he begins to recognise developments that have shaped approaches to environmental education in his context. Various participants, through the work of assignment three start to recognise the behaviourist orientations reflected in the work that they do and begin to see the limitations of assuming a linear relationship between knowledge, awareness and attitude and behaviour change (see 6.2.2 & 6.3.1). Many participants begin to recognise the limitations inherent in these practices and start to experiment with different approaches to environmental education (see 6.3.1). Daniel for example talks for example of using '... more participatory approaches' to environmental education in his work context (DF10, C4; see also 6.3.1). Some examples reflect teaching and learning processes that attempt to challenge roles and identities shaped through conventional teaching and learning processes. For example, Vasintha begins to consider some

teaching and learning processes that encourages learners to ‘... feel free to talk and ask questions, share ideas and information’ as a challenge to teaching methods to which she had been exposed in her own academic career, characterised by ‘... teaching [that] did not encourage learners to question [but to] accept what was learnt as the only fact or truth’ (DF10, C2). Songezo’s case reflects a strong emphasis on ‘... community participation’ and notes that ‘... communities must regain control of their own destinies’ (DF10, C5). Anastelle similarly begins to challenge the dominance of science experts in the Paulshoek community in looking at ways of drawing together scientific information with community knowledge in exploring responses to socio – economic issues in this community (DF10, C6).

The data presented above reflects processes through which all participants have begun to challenge conventional conceptions of environmental issues and risks and associated knowledge practices and roles and identities shaped through these. Questions raised, critical comments made, limitations identified, alternative thinking and action proposed by participants could be seen as processes through which dominant knowledge frameworks and the power relations embedded in these become destabilised (see 1.5.1 & 4.6.3). These examples begin to raise questions about the status of knowledge and start to challenge the legitimacy of the culture and position of experts (Delanty, 1999: 154). This data represents examples of destabilising ‘... reigning forms of reason ... and principles of ordering’, they reflect ‘... ruptures and breaks’ in knowledge systems that ‘... generate the principles of action and participation’ and so, in Popkewitz and Brennan’s (1998:14) view begins to open up possibilities and options for change.

6.3.3 Critical reflection on unconscious preconditions of knowledge and action

In the context of structuration theory, Gidden’s (1976:107) describes the consciousness of individuals in terms of three strata, namely unconsciousness, practical and discursive consciousness. The unconsciousness, Loyal (2003:30) describes as comprising mainly of desires. Practical consciousness represents tacit knowledge, not immediately available to the individual but that knowledge that allows the individual ‘... to “go on”, in terms of rule following in social life’ (*ibid*:52). Discursive consciousness refers to knowledge that is immediately available to individuals and allows the articulation of ideas and perspectives. Reflexivity involves a process of uncovering the boundedness of unconsciousness and practical consciousness, drawing on discursive consciousness, and so elucidates intentions and purpose that underpin thought and consequent actions.

Through the course and particularly the work of assignment three participants are encouraged to critically reflect on the methods and processes that they use in their work context, to

recognise in these the assumptions or unconscious preconditions that shape engagement within knowledge frameworks. The subsequent aim being to identify limitations in approaches to environmental education and explore some possibilities for addressing these limitations (see 5.4.1). Through this process participants come to recognise various orientations inherent in their practice. They similarly come to identify some of the limitations and or contradictions inherent in their practice. Through this exploration participants also become more conscious of the assumptions inscribed in the language that they use to describe their practice and as a result a different language begins to emerge as participants discuss their practice. Further this exploration provides participants with a framework for exploring different methods and approaches in environmental education in their context.

Assignment three requires participants to describe the methods and processes used in their practice and to identify the various orientations that have come to shape their practice (see 5.4.1). Anton for example, describes some of the lessons used at the CCE as hav[ing] more content and we therefore sometimes have to get the content through to learners by explaining' (DF10, C1). In other lessons he notes that they '... also use co-operative learning, ... a process where peers work together and also learn from one another'. In the Walters / ABSA school project '... learners must identify an issue in the environment, plan together and then have to follow up by taking action'. Anton describes this programme as a '... learner driven environmental project' through which '... learners are actually doing something ... instead of just absorbing facts or experiencing the natural wonders of the environment'. Other methods dominantly used at the Centre include '... fieldwork' where '... learners go down to the Liesbeeck River and select and analyse data ... we also use roleplay, music, videos, story telling, audits and debates ... depending on the type of lesson to get the environmental message across'. Anton notes that '... at the CCE I have noticed that we are more engaged in fieldwork and the verbal transmission of facts ... centred on the idea of changing attitudes, values and behaviour'. Anton describes the aims of the lessons at the CCE as '... to give learners the opportunity to be aware of the environment ... also develop an awareness and knowledge of the environment, positive attitudes and responsible citizenship'. He further notes that '... our teaching methods are mostly influenced by the behaviourist educational theory ... I think this is purely a response [to] how we have experienced environmental education in the past and the historical background of the Centre, previously being only a museum'. In concluding this assignment Anton notes that '... although we have a huge variety of areas in our programme committed to environmental education, that still does not give us any reason to feel complacent with what we are currently doing'. This assignment appears to have given Anton the opportunity to reflect on the methods and processes used in the environmental education programme at the Centre and to recognise some of the more powerful ideas that have shaped these. In this sense he notes that '... what I have discovered with this assignment is that I have

reflected more about what we do and why we do it' which might begin to elucidate some limitations inherent in these in terms of responses to the environmental crisis and encourage an exploration of more effective approaches in future. In the environmental club at Vasintha's school '... learners have been involved in weeding, preparing areas and planting' (DF10, C2). Vasintha notes that through these activities '... as educators we assumed that the linear behaviour change systems of increasing knowledge would be linked to favourable attitude change' which she notes '... reflects a traditional behaviourist view'. She refers to existing methods used as being '... show and tell ... as we felt we were dealing with learners who had no prior knowledge'. For the future activities of the environmental club she envisages '... an action research approach, which would allow learners to develop different skills like identifying issues in the school and the community for example, how to address the problem of litter'. She feels that this will allow '... for the development of different skills, values and knowledge which will help learners in achieving specific outcomes'. Vasintha appears here to be reflecting on the limitations in current programmes and exploring some ways in which environmental education can be done differently in the school context. In reflecting on the environmental group, Vasintha notes that learners were not involved in determining the success or in establishing goals for the group. '... This year learners have been included in establishing objectives for the group ... be involved in establishing the success of the project'. Here Vasintha appears to be considering and challenging conventional roles in educational processes and practices, learning experiences defined by the educator, for example and begins to explore alternative relationships within educational processes and practices. Further reflections contained in assignment three questions ' ... whether we were not trying to educate them about the environment ... with issues facing the community being ones of social justice and equity for sustainable living rather than nature preservation alone ... our focus needs to broaden and include education for and in the environment'¹⁶. Vasintha feels that the assignment has provided her with '... the opportunity to reflect on the methods and processes which might improve her work. In her classroom context she begins to experiment with some of these methods and approaches, for example, '... constructivism' through which learners '... are constructing meaning whilst interacting' and '... social constructivism' which she feels is reflected in '... the sharing of ideas and information'. These examples reflect processes through which Vasintha is beginning to explore alternative processes of engaging within knowledge frameworks. She feels that '... perhaps my understanding of why is not analytical enough ... but it is a process' indicating a process orientation to exploring change and the recognition of an opening for change. Through the work of assignment three Cathy begins to explore some of

¹⁶ Theme three introduces participants to three approaches to environmental education. Education about the environment focuses on knowledge and awareness of environmental issues and risks, education in the environment reflects more experiential type processes promoting environmental awareness in natural settings. Education for the environment extends these two approaches to integrate active approaches to addressing environmental issues and risks.

the trends and powerful ideas shaping her Geography fieldtrips that she describes as a '... more integrated learning experience' (DF10, C3). Here Cathy appears to be responding to the conventional compartmentalisation of subject areas in the school context that she raises as one of her concerns around environmental education in her school context (see 6.3.1). She describes the first part of her fieldtrip as '... a lecture ... to tell the audience everything they may wish to know'. She notes that with this activity '... learners were passive receivers of information about the environment' and though the lecture was expert driven it meant that a lot of information could be passed on in a short period of time. The second part of her lesson she describes as an experiential activity '... education in the environment ... we were actually there where the penguins live'. She further notes that '... both of these parts of the fieldtrip involved only '... pseudo participation from the learners'. This example reflects that Cathy might be beginning to recognise some of the trends and patterns inherent in her methods and processes and to recognise some of the limitations in these methods and processes. The third part of the fieldtrip involved a visit to the landfill site and Cathy feels that this visit integrated '... all aspects of active learning, dialogue, encounter and reflection¹⁷, but these could have been explored further'. In reflecting on the fieldtrip Cathy notes that she felt that '... knowledge and awareness would lead to behaviour change, but ... realised that this is not ... the case ... I need to change my approach and include an action component to make learners perceive the environment in a holistic way'. This example indicates the recognition of limitations as well as the opening up of opportunities for change. Daniel describes a part of the environmental education programme in the Khutala Colliery context as a top down approach and '... the mining industry always operates in this top down way' (DF10, C4). He describes the environmental education programme used as part of the induction programme as '... we show a video, show what we have done or haven't done and chat about things and by this time the guys are sleeping ... they are not actually interested and we have not achieved what we desired to achieve in terms of the environment'. Here he notes that there are other ways of approaching a training programme. In reflecting critically on another aspect of the programme Daniel notes that the education programme '... is designed for employees and tends to ignore collective society ... no connection made between human beings, nature and the universe ... the forums that are held are information sessions and do not create an equal partnership for various stakeholders'. He feels the need to support the community '... to participate in complex problem solving surrounding the environment and the need for sustainability'. Daniel appears through this assignment to be exploring some of the patterns, trends and limitations in education methods and processes in his context and also to be challenging approaches of responding to environmental issues and risks that ignore collective society. Songezo draws on the theoretical

¹⁷ The 'Active Learning Framework' provides a pedagogical framework to assist educators in the planning of school-based environmental education processes. This framework was developed within the context of supporting the implementation of Curriculum 2005, an outcomes-based curriculum framework for general education and training in the South African NQF (O'Donoghue, 2000).

perspectives introduced in core text three to explore critically some of the methods and processes that he has envisaged for his programme (DF10, C5; see also 5.4.4 & 6.3.1). For one part of his programme, he had decided on the use of a workshop ‘... to share ideas, knowledge and experiences ... and to construct new knowledge’. He notes that the choice of a workshop has been shaped by constructivism ‘... because it allows participation, discussions and construction of new ideas from others based on shared ideas’. He similarly notes that ‘... this method involves and encourage[s] people’s participation’. A second aspect of his envisaged programme is a poster. He describes the poster as ‘... imparting ... information through transmission teaching’ and recognises this approach as behaviourism as it ‘... intends to change other people’s behaviour through raising awareness ... and impart[ing] knowledge’. Since Songezo was unemployed at the time of the course, he had no specific institutional context within which to frame critical reflections on methods and processes. He had however through the course developed some ideas for a programme and these ideas became the context within which to reflect on the envisaged methods and processes. In assignment three Anastelle describes the current approaches used in sharing information with the community of Paulshoek and notes that this has been ‘... on the basis of community and committee meetings ... never ... perceived as an environmental education process ... rather an easy and quick way of sharing information’ (DF10, C6). In critiquing the existing environmental education programme, Anastelle notes that the process ‘... followed a show and tell approach that is grounded in tunnel vision behaviourism’. She further notes that the method of research presentation ‘... via flip charts and talking certainly has a top-down upliftment approach that is expert driven’. Anastelle further notes that ‘... positivism, behaviouristic approaches which is equated [to] awareness / knowledge + attitude change = behaviour change, has obviously not ensured the necessary change with community members’. Anastelle begins here to recognise some of the dominant trends in current approaches to environmental education in the NBI context and also appears to begin to question the differential social positions in interactions within knowledge frameworks. The examples cited above begins to show an increased understanding amongst participants about the dominant trends shaping environmental education processes in their context and in all cases participants appear to recognise the differential power positions inherent in these approaches. In addition, through this critical exploration of trends shaping practice participants appear to identify some of the limitations in practice, which might pave the way for exploring ways of overcoming these limitations (see 6.4).

Through the work of assignment three participants begin to suggest some ways in which they could address these limitations and shape environmental education processes in future. Anton for example reflects the vision of encouraging active approaches to addressing school-based environmental issues and risks through the work that he does at the Centre (DF10, C1). In this sense he notes that he ‘... recognises action as an integral part in [environmental education]

realising its potential in schools to encourage ‘... learners and teachers to be more involved in practical environmental problems’. Vasintha begins to explore processes that will involve learners to a greater extent in defining the direction and the activities of the environmental club and similarly envisages extending the activities of the environmental club beyond issues of nature to integrate social aspects associated with these problems (see above). Cathy also begins to consider more active approaches to her fieldtrips and feels that in future she could use the landfill site as a way of ‘... include[ing] political, bio-physical, economic and social [considerations]’ which she feels will be ‘... using the socially critical approach’ (DF10, C3). In his work context, Daniel suggests that in future they should use a ‘... more participatory approach ... moving out of the classroom, taking them to some of the areas and have a look at what we have done, how we have affected the environment ... how we have affected people who live in that environment and that would be more effective than sitting in a classroom watching a video’ (DF10, C4). Anastelle proposes a ‘... process of environmental education [that] will allow for more integration of progressive and conservation methods and processes’ (DF10, C6). She further proposes an approach that involves ‘... community participation in the planning and execution of the environmental information ... to bridg[e] gaps between scientific environmental information and local knowledge and information’. These proposals begin to highlight some challenges to conventional forms of interactions within knowledge systems through exploring different ways of knowing and being within these knowledge frameworks. Anastelle’s case for example begins to challenge the legitimacy of scientific knowledge in the community context in which she works. Out of these examples some tensions however also begin to emerge with respect to visions and proposals made (see 6.4.7).

6.3.4 Engaging within theoretical perspectives

Section 1.3.2 and 4.5.4 introduces the idea of the inextricable link between theory and practice, with practice being shaped by both informal and formal theory. Informal theory relates to practical knowledge that is situated in practice and that similarly emerges from practice and can be linked to Gidden’s (1976:107) conception of practical consciousness (see 4.5.4 & 6.3.3). Formal theory provides the framework within which to critically reflect on practical consciousness and explore possibilities for alternative understandings and practices and so support reflexive processes of change. The course focuses participants on practical consciousness in supporting a critical exploration of socio-historical contexts that shape thinking and action in environmental education (see 5.3.3 & 6.3.2). It similarly introduces participants to a range of theoretical perspectives as a framework within which to undertake this critical exploration of thought and action (see 5.4.4). Section 6.2.3 introduces some ways in which participants have engaged with the theoretical perspectives introduced through the course. The following section explores in more detail the nature of interaction within theoretical perspectives

in support of the reflexive exploration of thinking about and responding to environmental issues and risks in context.

The data analysed reflects that engaging within theoretical perspectives in the course has offered participants the opportunity to reflect critically on conventional conceptions of environmental issues and risks and responses and reconstruct ways in which they think about and act on these issues and risks in context. All cases reflect broader conceptions of environmental issues and risks supported through theoretical perspectives introduced in theme one (see 6.3.1 & 5.4.4). For example, all participants start to pick up on some of the social, political and economic causes and consequences of environmental issues and risks through the use of the analytical framework provided by the O'Donoghue model (1995:8; see also 5.4.1, 5.4.4 & 6.3.1). For example, Anton, Anastelle and Vasintha all consider the previous political dispensation in South Africa as contributing factors to the environmental issues and risks that confront them in context (DF10, C1, C6 & C2; see also 6.3.1). Vasintha explores some of the economic causes of parents' lack of participation in the affairs of the school for example, the need for both parents to enter into the labour market with '... employment that dictates long hours and low income' (DF2, ass 1.2). Cathy considers technicism, consumerism and the role of the media as contributing economic factors to stimulating and shaping consumerist values within contemporary society (DF10, C3). Daniel in his assignment work explores some of the social consequences of open cast mining in considering the potential relocation of communities as a result of mining operations and some of the bio-physical impacts such as '... air quality ... noise vibration ... visual impacts' amongst others (DF4, ass 1.2). Songezo uses the four integrated dimensions of the environment presented in the O'Donoghue model (1995:8), namely economic, social, political and bio-physical as headings in his assignment to explore the causes of the issue of plastic waste in his community (DF5, ass 1.3). Anastelle, in her assignment also picks up on some of the socio-economic issues that contribute to the unsustainable use of natural resources in the Paulshoek community, such as '... poverty, unemployment' amongst others (DF10, C6). From an analysis of assignment one it becomes evident that theoretical perspectives on environmental issues and risks being more than simply issues of nature and pertaining to the bio-physical environment provided participants with an analytical framework within which to interrogate environmental issues and risks in more depth and develop broader constructions of these beyond conventional constructions of environmental issues and risks.

Theme two introduces participants to some of the historical developments shaping our thinking about environmental education. It introduces participants to various international conventions through which perspectives on environmental education have been shaped and introduces some principles that have been developed through these international conventions. The associated assignment two then requires participants to draw on these principles in critically

reflecting on the aims and objectives of their programmes. Through this assignment and through reflecting on some of the international principles, Anton recognises the need for the aims and objectives of the Centre to be revisited and further developed in light of these international principles emerging. This reflects an example of Anton highlighting limitations in the programme of the CCE and identifying some theoretical perspective that could be used as a framework within which to explore the reorientation of aims, objectives and principles that guide the programme. For Vasintha the principles and theoretical perspectives introduced through the theme provided some framework for developing a vision for the future of the environmental club at her school (DF10, C2). Vasintha for example, references one of the course readings (Yeld, 1997:28) in introducing one of the principles, amongst others that ‘... should guide the project’ (DF2, ass 2.1). This principle: “Enable communities to care for their environment” she sees as a ‘... way in which social responsibility can be encouraged and fostered enabling people to take responsibility for their own actions and environment’. Through assignment two, Daniel reflects on the environmental management policy of Khutala, using the analytical framework of two sets of international principles contained in the industry course materials (DF10, C4). He notes for example, ‘... there is an effort to educate Khutala employees towards the environment and matters pertaining to it ... this is one of UNESCOs categories for environmental education’ (DF4, ass 2.2). He further highlights one of the weaknesses of the policy in ‘... environmental education is primarily aimed at employees and does not provide for the community’s education. UNESCOs objectives towards ... environmentally responsible behaviour states that the community should be part of the education system’. Vasintha and Daniel’s cases reflect some possibilities being opened up for improving and strengthening the environmental education programme in their respective contexts, drawing on analytical frameworks developing out of interactions within theoretical perspectives. Songezo uses the opportunity of assignment two, and the supporting theoretical perspectives to develop a set of aims and objectives for the waste management project that he envisages for the Grahamstown community (DF10, C5). Some of the objectives developed include ‘... improve the level of public awareness with regard to pollution management ... community action in the development and maintenance of green spaces and other public facilities and amenities’ (DF5, ass 2.1). One of the ‘... principles guiding the project’ is cited as ‘... environmental education should empower all peoples and promote opportunities for grassroots democratic change and participation ... this means that communities must regain control of their own destiny’. This example similarly reflects ways in which Songezo draws on theoretical perspectives to inform his practice. These examples highlight the significance of theoretical perspectives in supporting participants to better understand their practice and to explore options for further development of these programmes.

Various examples cited before reflect participants drawing on theoretical perspectives to identify key trends and patterns in practice and the dominant educational orientations that have shaped

these practices (see 6.2.2 & 6.3.3). Anton for example, recognises the behaviourist orientations in the CCE programmes of environmental education in its emphasis on verbal transmission and awareness raising (DF10, C1; see also 6.2.2 & 6.3.3). Vasintha begins to question the assumptions shaping the activities of the environmental club ‘... in allowing learners to experience nature in order to change behaviour according to a pre-defined code’ and references this statement from the course materials (DF10, C2). Drawing on the course materials, Cathy explores an ‘... action research approach’ in the context of her fieldtrips (DF10, C3). Similar to Anton, Daniel begins to recognise the limitations in the predominantly ‘.. show and tell’ methods used in his context and begins to explore alternative approaches that involve the surrounding community to a greater extent in decision-making processes (DF10, C4). Songezo draws on the course materials to clarify the orientations reflected in the methods and processes that he proposes for this waste management programme (see 6.3.3). In these examples theoretical perspectives appear to have been used, to some extent as a ‘... sounding board’ or ‘... thinking tool’ through which to reflect critically on practice, highlight limitations and explore ways in which to address these limitations (Usher, 1997:138; Popkewitz & Brennan, 1998:11; see also 4.5.4 & 3.7.2).

Conventional education and training practices reflect the role of theory as ‘something’ to be absorbed, internalised and regurgitated through assessment processes. In this context theory (and particularly theory in printed form) represents ‘the truth’ and participants in teaching and learning processes are rarely encouraged to critique or challenge theoretical perspectives. This reflects some of the ways in which knowledge frameworks can come to dominate thinking and social action and interaction (see 1.5.1, 2.6, 4.6 & 5.2). Traditionally theory and practice are presented as two separate elements in teaching and learning processes with the link between these seldom being encouraged (see 2.4). From within this context of traditional educational processes and practices, tensions begin to emerge as participants engage with the notion of praxis through the course (see 6.4.7).

As noted before, various participants in the course struggle with the notion of praxis (see 5.3.3, 5.4.4 & 6.2.3). This struggle is evident in various examples emerging from the various cases. Firstly, various participants joined the course with an expectation of being exposed to ‘practical’ environmental education programmes and the way in which these are addressed. Anton for example, notes that he expected ‘... to come to the course and be told what environmental education was all about’ (DF10, C1). Vasintha and Songezo both joined the course looking for practical ways in which they could support their respective programmes (DF10, C2 & C5; see also 6.2.1). Cathy notes that she ‘... thought the course would be more practical and that we would go out and look at environmental issues’ and she notes ‘... so [the course] did not meet those expectations’. (DF10, C3). When Anastelle first read the brochure advertising the course

'... I thought there must be something more practical to it' and similar to Cathy notes that '... the course did not quite meet my expectations since I thought that the course was going to be more practical' (DF10, C6). She notes that the '... policies and those things were good to know' but when the course got into more '... theoretical type of stimulation' she began to question her participation in the course. Daniel notes that he joined the course thinking '... it would be a lot more of finding out what other people's problems were and how they are solving it' (DF10, C4). He notes that when the course started he '... was a little taken aback ... at this point I was not entirely sure whether it would benefit me in the long run'. He notes that he continued the course out of interest in the different orientation to teaching and learning in the course. These comments reflect that the introduction of theoretical perspectives as a way of interrogating practice was not an expectation that participants had of the course and in some cases appears to have created frustration amongst some participants (see 6.2.1). Participants appear to view the course as a 'theoretical' course with less emphasis on the practical implementation of environmental education in context as is evident in comments above.

Participants' struggle with praxis is similarly evident in discussions of practice relevant to theoretical perspectives. In Daniel's case for example, the initial drafts of assignment one reflects a fairly technical perspective in discussing the issue of open cast mining through which he primarily drew on technical mining reports (DF10, C4). In response to the tutor's comments through assessment, in the second draft of the assignment Daniel begins to reflect more on the causes and impacts of the issue as they are observed in the mining context. Daniel's assignment two similarly reflects a discussion on the environmental management policy of the mine and through assessment comments begins to explore in more detail the practical implications of this policy. Of this Daniel notes that he found the process of assignment writing to be difficult and feels that this difficulty is linked to the dominance of technical approaches prevalent in his mining context. He further notes that he could see a change in his assignment work that '... started out as a technical report rather than a discussion of own ideas'. A further example of this struggle is evident in Songezo's work in assignment three (DF10, C5). Songezo's first draft of assignment three discusses the various educational orientations contained in theme three. In this first draft no reference is made to the methods and processes that he envisages for his environmental education programme. In response to tutors' comments, from the second draft onwards Songezo begins to introduce the poster and workshop as two of the methods that he proposes for his environmental education programme and discusses these relative to the theoretical perspectives introduced through the course materials. Similar examples of struggle are evident in Cathy's assignment work (DF10, C3). Through assignment two Cathy reflects on various aspects of her fieldtrips through drawing on the various theoretical perspectives introduced in theme two. She notes for example, '... seeing the Red Hill squatter community cleaning the alien [vegetation] and now subcontracting to the

municipality shows how “communities can care for their own environments” (Yeld, 1997) and shows how quality of life is linked to good environmental management (Irwin, 1990)’. This example shows Cathy’s reflection on the various projects and programmes that are integrated into her fieldtrip rather than reflecting on her own fieldtrip programme in relation to these principles, which is an explicit requirement of the assignment (see appendix 12.2). In this assignment she does go further in citing ‘... the following Tblisi principles also underl[ie] my trips ... environmental totality ... learning is lifelong ... interdisciplinary approach ... complexity of issues, their symptoms and causes ... varied experiences and activities’, but provides no specific discussion of these relative to her programme. These examples reflect some of the difficulties that participants experience in linking theory to practice. The former two examples reflect that assessment processes appear to be significant in supporting participants to link theory to practice. From these examples the need to strengthen support to participants in integrating theory and practice begins to emerge and the need to encourage the critical engagement within theoretical perspectives as they reflexively explore approaches to environmental issues and risks in context.

All cases reflect participants drawing on theory in reflecting on their practice (see 6.3.4). The extent to which participants have drawn on theoretical perspectives as ‘... a thinking tool’ differs from one theme to another (Popkewitz and Brennan, 1998:11; see also 3.7.2 & 4.5.4). As noted before, participants draw primarily on the O’Donoghue model (1995:8) in exploring the nature, causes and impacts of contextual environmental issues and risks in assignment one. Few other theoretical perspectives from this first theme are integrated into discussions in these assignments. In assignment two, primary theoretical perspectives drawn on here are the principles for environmental education that is a requirement of the assignment. Theoretical perspectives contained in theme three are more generally used amongst participants as they explore the orientations inscribed in practice and alternative ways of approaching environmental education. Vasintha for example, draws on and references the core texts of theme three in describing her practice ‘... by encouraging learners in learning activities to “question the *status quo* and think of ways in which the social system can change” reflects the socially critical approach’ (DF2, ass 3.2). She also notes that ‘... I also use learning activities which get them to work with their partners and share ideas and information ... reflects constructivism ... they are constructing meaning whilst interacting ... the sharing of ideas and information could be said to reflect social constructivism’. She further goes on to note that ‘... in that participatory methods are adopted and learners are co-learners and co-teachers ... meaning is constructed socially ... “the environment as a social construct and meaning is derived through interaction”. In this assignment the core texts are referenced where she used quotes. In describing one aspect of her fieldtrip Cathy notes that ‘... I realise that we could have spent the whole day at the landfill site and broadened the issue to include the political, bio-physical, economic and

social, which would be using a “socially critical approach” ... this would have resulted in a more “holistic view of the environment as a totality of the interdependent relationship between natural and social systems’ referencing Huckle (1995) included as one of the readings in theme three (DF3, ass 3.2). These examples reflect ways in which participants are exploring new and different ways of approaching their practice in environmental education. Songezo describes the workshop that he envisages for his environmental education programme as reflecting ‘... constructivist ideas where people engage in discussions, exchanging their ideas with the aim of getting information and constructing knowledge with others’ (DF5, ass 3.2). Through drawing on these theoretical perspectives, many participants begin to explore other approaches to environmental education processes in their context. This is evident in Anton and Cathy’s exploration of active approaches to environmental education, for example and Daniel, Anastelle and Songezo’s exploration of more participatory approaches in their work contexts (see 6.3.3). Various examples however reflect the need for participants to explore these approaches in more depth (see 6.4.7). Daniel’s example of more participatory approaches is for example described in terms of taking participants out of the classroom into the physical environment to look at environmental impacts of mining operations. Cathy’s description of more active approaches in her work context involves ‘... the aim of the project was to introduce the action component, if they identified a project they needed to come up with a solution ... to interview people ... to do research ... projects have changed, it has become a lot more scientific with recording data, hypothesis testing’. Cathy does go on to reflect that ‘... I still need to come to grips with “what is action” ... need to use and refine’. For many participants in the course the ideas introduced are entirely new and in some cases almost alien to the conventional teaching and learning processes to which they have been exposed. These ideas often become a ‘new’ language with which participants are able to describe or ‘label’ their practice. This issue of ‘labelling’ practice has emerged through a range of research projects undertaken in the context of the course (Janse van Rensburg & Le Roux, 1998; Heylings, 1999, Molose 2000, Jenkin, 2000, see also 5.5). In this course for example, Anastelle notes that their current programme ‘... is grounded in tunnel vision behaviourism ... and ... has a top down upliftment approach that is expert driven’ (DF10, C6). Daniel similarly comments that the environmental education programme at Khutala is in ‘... default mode’. In both cases there was no explanation given for these descriptions and insight could not be gained from an analysis of assignments into the reasons for attaching these specific ‘labels’. Often tensions begin to emerge between the ‘labels’ drawn from the theoretical perspectives and used to describe practice and the further explanation of these ‘labels’ as becomes evident in some of the examples noted above and further discussed in tensions emerging from reflexive agency in context (see 6.4.7).

In a discussion of informal and formal theory, Usher (1997:135) notes that informal theory cannot in itself support reflexive processes since it is liked within the personal experience and

experiential world of practitioners and is thus limited in its potential to break beyond the binds of practical consciousness (see 1.5.1 & 4.5.4). Formal theory thus becomes critical in providing the space for exploring outside perspectives, perspectives that are concealed within dominant knowledge frameworks. As such, the exploration of formal theory as critical lenses through which to break beyond the binds of existing and dominant knowledge frameworks are critical in reflexive explorations of options for change. The data explored above, reflects participants engagement within theoretical perspectives introduced through the course. It however also begins to show up some of the challenges with which participants are confronted as they begin to explore different orientations to environmental education within contexts of traditional orientations and approaches to environmental education. This foregrounds the need to carefully consider how these course materials are presented and used in the course and what might be implied through its use (see 7.4).

6.3.5 Collective agency

Loyal (2003:40) and Delanty (1999:171) offer a critique of structuration theory in its emphasis on individual agency and note the need to consider reflexive agency in a broader context of social action and interaction. Section 6.2 provides insight into the social structure, actions and interactions out of which reflexive agency emerged. For example, Anton's changed work context stimulated his exploration of understandings around environmental issues and risks and processes through which to respond to these (see 6.2.1). This exploration was similarly stimulated by change in the broader context of change in education and training in South Africa, as in the case of Vasintha and Cathy (see 6.2.1). The same holds for Anastelle, Daniel and Songezo through their actions and interactions within changing social contexts (see 6.2.1). Sections 6.3.1 to 6.3.4 similarly introduces some of the processes within which participants interacted as they explored critically constructions of environmental issues and risks and processes through which to respond to these in context.

The former sections in this chapter similarly provide a range of examples through which participants have engaged in the reflexive exploration of issues, risks and responses in context (see 6.2.3). These include processes of interactions with fellow course participants, such as for example in Vasintha's case in developing more clarity on the impacts of environmental issues and risks in her context (DF10, C2; see also 6.2.3). For others collective agency emerged through interactions with colleagues in the work context, such as Cathy's example of working with a colleague who also did the course, to develop interdisciplinary programmes for environmental education. Collective agency through interactions with colleagues in the work context is also evident in Anton's example of discussing with the head of the CCE the need to review the aims and objectives of the Centre in light of his reflections through assignment two

(DF10, C1; see also 6.2.3). A further example is evident in Daniel's case in terms of his discussions with colleagues in the work context who then began exploring ways of supporting environmental education in schools through the social responsibility function (DF10, C4; see also 6.2.3). Various examples are similarly cited of collective agency emerging through interactions with various course processes and features, such as assignments, a range of workshop and tutorial activities, course materials and assessment processes (see 6.2.3 & 6.3.1 – 6.3.4). It therefore provides an account of reflexive agency emerging out of social context and developing through ongoing actions and interactions within multiple social contexts, for example, broader socio-historical contexts, professional and learning contexts and life contexts.

6.3.6 Summation

The above section provides some insight into reflexive processes with which participants engaged through the course and so too provides some insight into the reflexive capacities (reflexive competence) developing through this process of engagement. Through a range of social actions and interactions, participants have explored others ways of constructing environmental issues and risks beyond the traditional conceptions dominated by nature and science (see 6.3.1). These evolving conceptions of environmental issues and risks have similarly provided explorations of different approaches to environmental education beyond conventional approaches that assume a linear relationship between knowledge, awareness, attitude and behaviour change to address environmental issues and risks (see 6.3.1, 6.3.2 & 6.3.3). What does however, begin to emerge from this data is the need for a greater focus on the notion of risks, unintended consequences of thought and actions through course processes (see 7.3). Participants have also started to explore some of the socio-historical factors that shape thought and action, though this area similarly appears to require more explicit support in the context of the course (see 7.2 & 7.3). Various processes and features in the RU/GF course have also provided participants with opportunities to reflect critically on the unconscious preconditions of thought and action, recognising limitations inherent in thinking and practice and seeking ways to address these limitations in the development of future environmental education processes (see 6.3.3 & 6.3.4). Out of these discussions have emerged cases of reflexive explorations through ongoing actions and interactions within social structure, systems and processes (see 6.3.5). These examples reflect amongst participants the development of various integrative elements of reflexive competence that provides evidence of an engagement within reflexive processes (see 3.7.2 & 5.3.3). These reflexive explorations begin to open up options for reorganising and restructuring '... the foundations of social action and life' (Beck, 1999:116) and so addresses unawareness as a key theme in reflexive processes, which becomes evident in the examples discussed in this section.

The collective reflexive explorations with which participants engaged through the course are shaped by and influences multiple social contexts as introduced in section 6.2. Out of this dual relationship between social agents and social structure mediated through reflexive agency emerges various tensions as participants begin to explore new and different approaches to environmental education in contexts where dominant knowledge frameworks and power relations embedded in these 'work' to confine and inter possibilities for change. The following section discusses in more detail some of these arising tensions.

6.4 AXES OF TENSION: REFLEXIVE AGENCY IN CONTEXT

Popkewitz's (1999) social epistemology highlights the significance of history and context in shaping both thought and action (see 1.5.1, 1.5.5 & 4.6). The significance of context is similarly highlighted through structuration theory in recognising the dual relationship between social agent and structure, this relationship being mediated through social agency (see 1.5.1 & 1.5.5). Section 6.2 has provided a detailed account of the social context out of which reflexive agency has emerged. Section 6.3 further discusses participants' further engagement in reflexive processes through interaction within various course processes and features in the RU/GF course. Out of this relationship between social agent, agency and structure various tensions begin to emerge, some of which are introduced in section 6.3. The following section provides further discussion of these tensions emerging as participants engage in a reflexive exploration of environmental education processes in context where dominant orientations to education often shape thought and practice. These tensions emerging are particularly significant in the context of reflexive agency as they begin to represent conflicting rationalities that destabilise dominant forms of reasoning and the consequent principles of ordering and so open up options for new and different constructions of social life (Beck, 1999:120; Popkewitz & Brennan, 1998:124). With the emergence of conflicting rationalities in reflexive processes, dominant and existing constructions of environmental issues and risks are called into question, challenging the legitimacy of 'expert' and scientific knowledge, opening up environmental issues, risks and responses to new and different definitions out of which options for change begin to emerge (see 1.5.5 & 2.6).

In the various cases of reflexive agency discussed in section 6.3, tensions primarily begin to arise out of social roles and identities inscribed within dominant knowledge frameworks. Many participants attempt to transcend and challenge these social roles and identities forged within dominant knowledge frameworks, though tensions begin to emerge as they draw on the very structures that they are attempting to challenge, denoting the emergence of conflicting rationalities (Beck, 1999:120). In this light, Harley and Parker (1999:188) drawing on Durkheim's conceptual forms of social solidarity, referred to as mechanical and organic

solidarity, describe the South African context out of which these tensions emerge. In this context they describe the differential social roles and identities assumed by individuals in South African society resulting from '... the apartheid mills ... of the 'old' South Africa' (*ibid*:193). Mechanical solidarity reflects a simple division of labour, linked to social hierarchies and underpinning interactions amongst people that '... shape ... identities into roles based on position in ... family, clan, tribe, church, race, language, gender' (*ibid*:187). In contrast, organic solidarity is based on '...a more complex division of labour' with greater interdependence amongst individuals (*ibid*). Harley and Parker (*ibid*:189) argue that South Africa, in the apartheid era, reflected a form of mechanical solidarity, where the principles of differentiation were mechanically ascribed through race classification and '... enforced through a pervasive penal system'. The post apartheid era reflects a different legal and social framework through which human rights and an integrated civil society is being emphasised, reflecting shifts from principles of mechanical to organic solidarity (*ibid*). Commenting on these social roles and identities in the context of teacher education, Harley and Parker (*ibid*:193) note the tension in attempting to '... graft a legalistic social framework and curriculum of organic solidarity onto ... teachers whose identities and roles were forged in ... mechanical solidarity'. In the South African context, which '... embodies a mixture of organic and mechanical solidarities' (*ibid*:195) epistemologically-framed reflexive processes, involving knowledge and unawareness, become significant in challenging the '... rules of reason' and forms of ordering that construct specific '... classifications and distinctions amongst groups of people' and educational practices in response to environmental issues and risks (Popkewitz & Brennan, 1998:10). This South African context of transformation presents a scenario of tension between 'new and different' perspectives reflexively explored by participants with the 'old and dominant' social rules and 'norms' entrenched in a society traditionally divided.

Learning in the RU/GF course culminates in the development of a course, programme or resource for environmental education, developed through the work of assignment four. Assignment four thus becomes the space where perspectives developed through the course come together in proposals for future practices of environmental education in context. This section first introduces the proposals developed by participants for environmental education processes in context and then provides an overview of some of the tensions emerging out of reflexive agency in context.

6.4.1 A teacher education workshop for visiting teachers at the CCE (DF10, C1)

Various school groups visit the CCE daily to participate in three-hour lessons presented by staff at the CCE. Anton often expressed frustration about the same school groups returning to the centre over and over again, with nothing happening back at these schools beyond the visit. He

felt that these visits to the CCE often became a fun visit for schools, to be repeated each year, having little or no impact amongst teachers and learners. In response to these issues Anton developed a teacher education workshop that appears to be his way of following up on the school visits and ‘... extending the scope of the [three] hour visits’. Through this workshop Anton hopes to ‘... encourage teachers to be part of environmental education as a process’ and initiate programmes at their schools together with the learners.

Anton specifies the aim of the workshop as being ‘... to allow teachers to explore and understand the term environment and to link it to the curriculum ‘... by giving teachers the opportunity to question, share or discover new ideas about the term environment’. In motivating for the workshop, he notes that through the course he realised that there was more to the environment than the bio-physical world and felt that ‘... there must be many teachers out there who are under the same illusion’ (see 6.2.2 & 6.3.1). Through developing a better understanding of the environment and environmental issues, Anton hopes that teachers will be encouraged to integrate environmental education programmes into the curriculum and their classroom programmes.

The workshop was planned for three hours and was introduced with a short discussion of ‘... a healthy environment’ drawing on a reading by Janse van Rensburg and Lotz (1998) in the course materials. This discussion was to be primarily focused on the rights of all citizens to a clean and healthy environment. This was to be followed by an activity around the ‘Enviro Picture Building Game: The Urban Jungle’¹⁸ (Sharenet, 1995). Teachers were to be given various cards of the game and asked to discuss, in groups, the causes of the environmental issue reflected in the picture. Prior to the workshop Anton planned to circulate a questionnaire amongst teachers to get an idea of what they regarded as environmental issues in their school contexts. These issues were to be used in the next activity where, using the ‘Compass Rose’ (Development Education Centre, 1995; see 6.4.6) teachers would be requested to discuss the causes, effects and potential responses to these issues, with reference to the political, social, economic and bio-physical dimensions of the environment. Anton notes that at this point he ‘... will stress that [environmental] problems are linked to political, social, economic processes and concerns, as well as to the bio-physical processes ... and that this socio-ecological picture of the environment puts people at the centre’, citing one of the course readings. The next activity would introduce teachers to the ‘Active Learning Framework’ (O’Donoghue, 2000), where groups of teachers after identifying particular issues and risks would be asked to develop a learning programme suggesting a response to the issue they have identified. The workshop

¹⁸ The Enviro Picture Building Game is a series of card games that have been developed by Sharenet. The game consists of a range of cards depicting various environmental issues that build up to a picture of specific contexts, such as an urban setting or a rural setting amongst others. The intention of the game is to support the critical exploration of complex environmental issues and risks.

was to be conclude with an evaluation '... to establish the strengths and weaknesses of the workshop' to inform the planning of future workshops. Anton completed the proposal for the workshop at the time that Curriculum 2005 was undergoing review. He thus put the implementation of the workshop '... on hold' until he could reach more clarity on the revised curriculum framework.

6.4.2 A teacher enrichment workshop for colleagues at Rylands Primary School (DF10, C2)

Vasintha started the course with a concern for the poor physical appearance of her school and the intention of gaining parental and teacher support in developing the school garden (see 6.2.1 & 6.3.1). She also talks about the need for the integration of environmental education into all learning areas at the school, reflected in the expectations that she has of the course (see 6.2.1). Through an exploration of the issue that concerns her at the school she explored a lack of parental participation in the activities of the environmental club (see 6.4.1). Towards the end of the course as she developed perspectives towards assignment four Vasintha began to focus on how environment, environmental issues and risks and environmental education are perceived in her school context and amongst her colleagues.



Diagram 6.4 The school garden developed by the environmental club that Vasintha co-ordinates at her school, the activities of which she chose as a focus for reflexive explorations in the course.

In light of this changed focus Vasintha developed a teacher enrichment workshop aimed at '... sharing my experience on the RU/GF course' and '... to show the complex nature of

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Diagram 6.4 The school garden developed by the environmental club that Vasintha co-ordinates at her school, the activities of which she chose as a focus for reflexive explorations in the course.

In light of this changed focus Vasintha developed a teacher enrichment workshop aimed at '... sharing my experience on the RU/GF course' and '... to show the complex nature of

environmental issues and how they are interlinked'. In motivating for the workshop she notes that considering her own perceptions and understandings of the environment when she started the course, she was sure that her colleagues would benefit from exploring the environment in a similar way. A further motivation for the workshop that she cites is that if the environment group were to succeed '... it is necessary for all teachers to buy into the aims and objectives of the group' and she feels that a better understanding of environmental issues will encourage this 'buy in'. She further feels that if teachers were to integrate environmental education into the curriculum '... it is necessary to understand the concept of the environment before one is able to draw up learning programmes'.

The workshop was planned for one hour consisting of various activities to explore the concept of the environment and environmental issues and risks. The first activity involved '... unpacking the term environment' where Vasintha used the O'Donoghue model (1995:8) drawn from the course materials. This was followed by an activity in which teachers were given a card from the 'Enviro Picture Building Game' (Sharenet, 1995) and requested to discuss the causes and effects of the environmental issue reflected in the picture. Using the 'Compass Rose' (Development Education Centre, 1995) teachers were asked to report back on their discussions focussing on the various dimensions of the environmental issue. Vasintha notes the aim of this activity was '... to show the complex nature of the environmental issues and how they are interlinked'. This was followed by teachers listening to the song *Heal the World* to prompt discussion around '... the crisis experienced in all the dimensions of the environment and the need for the development of critical thinking skills and action competencies'. Similar to Anton's case, prior to the workshop a questionnaire was circulated amongst teachers to gauge their understandings of the environment (see 6.2.3). Following on from the previous activity, time was allowed '... to challenge some limited perspectives that came through in the questionnaire'. The workshop was concluded by teachers' completion of an evaluation form and certificates were issued to all who participated in the workshop.

Vasintha had the opportunity, prior to the end of the course to run the workshop at her school. She notes that during the workshop she tried to encourage teachers to integrate environmental education into their classroom practice.

6.4.3 An integration of environmental education into the school curriculum for grade twelve learners (DF10, C3)

Cathy had been arranging fieldtrips for her learners, for a number of years and joined the course with the need to find new and better ways of undertaking these fieldtrips and linking these to the curriculum (see 6.2.1). She notes that conservation is a key component of the syllabus and species extinction and pollution are noted in the textbook but '... only the problem

is there and not the solution'. In responding to her vision of supporting the development of environmentally literate and active citizens, she has redeveloped her fieldtrip for 2000, '... us[ing] methods and [environmental education] principles that I have learnt on the RU/GF course this year'. Cathy feels that the textbook reflects a negative view of environmental issues and hence the redevelopment of her '... fieldtrip is in response to this'.

Cathy specifies the aim of her fieldtrip as being '... to raise awareness of the local environment, reinforce the ecology syllabus covered in the classroom, ... to expose learners to careers in the environmental field and encourage sustainable lifestyles'. The objectives specified for the programme are to '... stimulate awareness, improve environmental literacy, [encourage] connections and relevance to learners and encourage group dynamics and social interaction'. A stated outcome of the fieldtrip is for learners '... to see the environment in a holistic way by examining the social, economic, political and bio-physical factors'. In reflecting on her prior fieldtrip Cathy notes that she realised that knowledge and awareness does not necessarily lead to behaviour change. She notes that '... I needed to change my approach and include an action component'.

The revised fieldtrip consists of a pre fieldtrip exercise, the actual fieldtrip followed by a process of the learners developing assignments. The pre fieldtrip exercise, called 'The Plastic Bag Issue', is introduced by a newspaper article in which Valli Moosa, the Minister of Environmental Affairs and Tourism, proposes a legal ban on the use of plastic bags. Learners are encouraged to discuss the issue using the 'Compass Rose' (Development Education Centre, 1995) and report on the links between the various aspects contributing to the issue. Learners are then encouraged to discuss solutions to the issue and are '... introduce[d] [to] the idea of public participation and the opportunity to take action'. Prior to the fieldtrip, an information booklet, which Cathy had compiled, was handed out to learners. The information booklet consists of wetland information and waste and landfill information since these were the foci of the fieldtrip. The fieldtrip included a visit to three sites, a coastal park landfill site that focused on integrated waste management, environmental health and entrepreneurial opportunities. The second site was a visit to the Silver Mine River Mouth in Fish Hoek focusing on landscape rehabilitation and public participation. The third site was a visit to the Rondevlei Bird Sanctuary focusing on '... a managed conservation project suffering from the impact of the surrounding urban area, subsidy cuts and the need to be economically viable'. At each of the three sites '... an expert spoke to the learners, ... no worksheets were handed out'. Prior to the fieldtrip two assignments were handed to learners for completion after the fieldtrip. Assignment one required learners to write a newspaper report of the days outing, entitled 'State of the Wetlands' to emphasise human impact on the wetlands, to highlight the social, economic, biophysical and political aspects threatening the wetland and describing the changing landscape of the wetlands. Cathy

specifies the aim of the newspaper report to give learners confidence in using environmental terminology. The assignment, on return from the fieldtrip, is so that '... their knowledge, awareness and skills can enable them to take action to ensure environmental sustainability in their day to day lives'. For assignment two learners could choose from four topics. These included an investigation of how three countries tackle their waste issue, the need to pedestrianise an area in close proximity to the school, identify an issue in their neighbourhood and exploring its causes and possible solutions and doing an audit of the school's recycling centre. For the second assignment learners were introduced to the 'Active Learning Framework' (O'Donoghue, 1995; see 6.4.6) and learners were to use this framework as an approach to exploring the assignment that they chose. As part of the assessment criteria for the second assignment learners were required to write a letter to the town planner or the local newspaper. They could also write a letter reporting illegal dumping or an informative article for the school newsletter. In discussing the assignments as part of her programme, Cathy notes that '... action is the new component and they need to see action as conclusive after the information has been gathered'.



Diagram 6.5 Some of the posters prepared by Cathy's learners as part of their assignment work linked to her fieldtrips.

Cathy was able to run the fieldtrip with her grade twelve learners prior to the end of the course and was able to reflect on various aspects of the fieldtrip that could be improved. She notes for example, '... one of the purposes of doing evaluation is to find appropriate ways in which to change and improve education' referencing one of the additional course readings. She also feels '... that I should have outlined the assessment criteria with them, because some of them

specifies the aim of the newspaper report to give learners confidence in using environmental terminology. The assignment, on return from the fieldtrip, is so that '... their knowledge, awareness and skills can enable them to take action to ensure environmental sustainability in their day to day lives'. For assignment two learners could choose from four topics. These included an investigation of how three countries tackle their waste issue, the need to pedestrianise an area in close proximity to the school, identify an issue in their neighbourhood and exploring its causes and possible solutions and doing an audit of the school's recycling centre. For the second assignment learners were introduced to the 'Active Learning Framework' (O'Donoghue, 1995; see 6.4.6) and learners were to use this framework as an approach to exploring the assignment that they chose. As part of the assessment criteria for the second assignment learners were required to write a letter to the town planner or the local newspaper. They could also write a letter reporting illegal dumping or an informative article for the school newsletter. In discussing the assignments as part of her programme, Cathy notes that '... action is the new component and they need to see action as conclusive after the information has been gathered'.



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missed the boat ... and focussed on the readings only rather than on the learning that took place on the excursion'. In her self-reflections attached to assignment four Cathy notes that she feels '... excited that my teaching is improving and moving in the right direction ... this was the reason for doing the course ... the idea of process and not product is an important thing to remember'.

6.4.4 A resource as part of environmental education in a mining environmental management process (DF10, C4)

Khutala Colliery's environmental management policy states that they are '... committed to involving its employees and all interested and affected parties in our environmental decision making'. In response to this aspect of the policy a meeting with interested and affected parties is held every six months with the surrounding farming community (see 6.2.2). When Daniel started the course this meeting took the form of '... a backlashing session with each one blaming the other and the mine representatives justifying their operations'. Farmers' general attitudes were '... that they are not responsible for the degradation of the environment'. Daniel notes that the mine representatives and members of the community often attended the meetings together with their legal representatives, suggesting a potential legal battle over environmental impacts of mining operations.



Diagram 6.6 The open cast mining site of Khutala with the Escom power plant in the background.

Daniel notes that though '... mining operations are not sustainable by nature' the operations of the mine needed to go on in the supply of low cost energy. He felt though that they needed to

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Daniel notes that though '... mining operations are not sustainable by nature' the operations of the mine needed to go on in the supply of low cost energy. He felt though that they needed to

move away from the situation of conflict ‘... to a more beneficial relationship with the farmers’. Around midway through the course Daniel realised the importance of environmental education processes in encouraging farmers to participate more proactively in decision-making processes with the mine (see 6.3.1). In response he developed an information pamphlet as a resource to be used at the meetings. Through the pamphlet Daniel intended to raise awareness amongst the farming community ‘... that solutions have to be constructed from their input and that their further involvement is necessary’. Through this process he hoped that ‘... sharing information from the mine’s side and then ... [with] increased input from the farmers a move could be made towards more participative approaches to decision making’.

The pamphlet that he has developed has the title ‘Understanding the Environment’. The pamphlet was introduced with a definition of the environment, drawn from the National Environmental Bill (Department of Environmental Affairs and Tourism, 1998). In the pamphlet Daniel further described environmental issues related to the coal mining industry and his specific context using the O’Donoghue model (O’Donoghue, 1995:8) and highlighted the interdependence of these various dimensions. Some of the issues raised in the pamphlet are pollution as a bio-physical environmental concern and the denial of human rights as a political aspect of the issue. Daniel notes that farmers generally regard the environment as only the bio-physical dimension and the resource was ‘... intended to provide information regarding the environment’. This discussion in the pamphlet is followed by ‘... issues for thought’ including, amongst others ‘... how will open cast mining impact on the local environment ... who benefits from the generation of cheaper energy’. Five of these ‘issues for thought’ are followed by a description of the auditing process used by Khutala and a motivation for the open cast mining processes, being primarily a financial one. After some further ‘issues for thought and debate’ he concludes the resource by noting some of ‘... Khutala’s impact on the environment’.

In October 2000, Daniel introduced the pamphlet to farmers and notes that the conflict in this meeting was significantly less than what he had encountered in prior meetings. Daniel intends for this pamphlet to be followed by others in which the mine shares pertinent information with the mining community. Daniel sees this as a start to the process with follow up pamphlets being constructed from farmers’ needs with regards to information.

6.4.5 A community based waste management proposal (DF10, C5)

Songezo started the course unemployed and not having a specific institutionally located work context within which to focus his learning. He however, used the opportunities provided for in the course to develop a waste management strategy intended to involve community members in responding to the issue of waste that was of concern to Songezo in his community of

Grahamstown East. The process of assignment writing was significant for Songezo, in particular assignments two and four in supporting him to shape his ideas around a waste management programme. Through assignment two he was able to work through and develop a detailed set of aims and objectives to inform the programme. Through this assignment the aim of the programme was specified as being '... to enhance the quality of life of all Grahamstown residents by building and sustaining a clean community through educating and involving the public ...'. Some of the objectives include '... improve the level of public awareness with regard to pollution management ... improve the capability for community action in the development and maintenance of green spaces and other public facilities and amenities'. Through the work of assignment four he was able to formulate the details of the programme. He, for example, developed a detailed action plan integrating '... objectives ... activities ... resources [needed] ... when ... by who ... outcomes'.

Songezo calls his programme a '... waste management awareness raising programme' for use amongst the Grahamstown East community. The aim specified for the programme is '... to make the communities clean and tidy ... encourage people to ... recycl[e], re-us[e] ... and reduce waste'. In the programme, Songezo has defined specific objectives, drawn from assignment two, and activities to support those objectives, a time frame for these activities and formulated specific outcomes linked to each. For example, one of the objectives in the programme is '... to raise awareness of [the] community on the need for waste management'. To support this objective, he defines specific activities including '... presenting the concept to schools, churches and the broader community, through visits, media and posters ... conduct workshops for schools, the youth, women and unemployed ... develop appropriate posters and pamphlets for the campaign'. The time frame specified for these activities is '... August [to] September, September [to] November, December [to] January' respectively. As an expected outcome, Songezo noted that '... people and communities [would] begin to be environmentally conscious'. In this programme Songezo has also included some activities to encourage the community to participate in a programme to clean the community. The stated objective here was '... to educate the community on how to keep their places clean and tidy'. Activities linked to this objective include '... identify[ing] volunteers who would support the campaign ... volunteers start cleaning their communities ... municipality [collects] ... waste'. The time frame for these activities are '... March [to] July' with the expected outcome being '... communities ... working independently on keeping their environment clean and tidy'. The programme was intended to run from August 2000, just following the conclusion of the course, however, Songezo experienced some problems in securing municipal support for the programme (see 6.2.2). Songezo was relying on financial support from the municipality to compensate workers for cleaning up and to physically collect the waste, however '... I talked with my mayor about it and he made promises about it but I never saw anything happening on the ground'.

economic conditions, greater awareness of the environment ... improved natural resource management strategies that would support sustainable natural resource utilisation'. This stated aim in the funding proposal is followed by a set of seven broad objectives, including amongst others, '... to ensure proper feedback of research information to the community' and '... to provide and encourage opportunities for capacity building and empowerment'. She goes on to note various principles guiding the project for example, '... to improve the ability of inhabitants to better manage their resources and take into account ecological [and] socio-economic factors'. The aims, objectives and principles used in the funding proposal were drawn from those that she developed through the work of assignment two. In the funding proposal Anastelle provides some background to the community, some insight into the '.. ecological and socio-economic research' undertaken in the community and provides a '... rationale for the project'. For the project she envisaged an initial workshop with various sectors in the community, such as '... farmers ... schools ... youth' to '... ascertain what their needs are in terms of information'. This will be followed by a selection of information responding to these needs of farmers and then developing from this information a resource to be distributed amongst the different groups. Anastelle sees the suggestion for environmental education processes, contained in the funding proposal, as a '... move away from the scientism frame of thinking as the only solution to environmental problems'.

6.4.7 The emergence of conflicting rationalities

Vasintha notes that in her teaching practice she often finds herself going back to what she knows best, what makes her feel comfortable and in control. She notes in her third assignment '... in order to understand why I revert more often to certain methods I have to consider the type of education and methods that I was exposed to as a learner' (DF2, ass 3.1). Anton similarly describes the primary orientations to environmental education in his context as '... a response of how we have experienced environmental education in the past' (DF1, ass 3.2). Section 6.3 provides an account of participants' exploration of alternative conceptions of environmental education processes in context but also begins to highlight some of the difficulties and challenges encountered as developing rationalities come into conflict with exiting and dominant rationalities in context. The tensions experienced and expressed in the above examples are however not exclusive to only Anton and Vasintha, but seem to emerge for all participants in the research project. The primary tensions emerging revolve around:

➤ Dominant orientations to teaching and learning

Through the course all participants recognise the limitations inherent in traditional behaviourist practices in context as reflected for example, in '... '... we know you do ... the sort of empty

vessel story', '... I am imposing – behaviourist ... I am equipping them, they are empty vessels', '... knowledge and awareness would lead to behaviour change, but ... realised this is not the case' and '... I do not think the trip ... the shock of seeing the waste [at the landfill site] ... changed behaviour' (DF10, C4, C2 & C3, see also 6.3.3). However, as participants engaged in the work of assignment four, some behaviourist orientations continue to mix within the reflexive exploration of other ways of approaching environmental education. In motivating for his teacher education workshop, Anton for example notes that if teachers have a better understanding of the environment, then they would obviously want to know how they can implement this in their classroom' (DF10, C1). Vasintha describes the aims of her workshop as being to '... show the complex nature of environmental issues and how they are linked' with the subsequent aim of encouraging her colleagues to '... integrate environmental education into their classroom practice' (DF10, C2). She notes that if her colleagues '... concept ... understanding of the environment changes, it will imply that their teaching methods ... will have to change'. In describing the activities of the environmental club, Vasintha notes that as teachers they had assumed that '... the linear behaviour change systems of increasing knowledge would be linked to favourable attitude change'. This she recognises as '... a traditional behaviourist view' and in future she envisions activities that '... allow learners the opportunity to develop some level of environmental sensitivity that will promote a desire to behave in appropriate ways'. Both quotes reflected above are drawn from, and referenced to the same reading contained in the course materials, a reading that intends to provide participants with insight into some behaviourist approaches within environmental education processes. Cathy's fieldtrip is entitled '... Fieldtrip leading to action' aimed at '... rais[ing] environmental awareness of the local environmental, reinforce the ecology syllabus covered in the classroom, to expose learners to careers in the environmental field and encourage sustainable lifestyles' (DF10, C3). Cathy notes that her intention through this fieldtrip was '... wanting through my teaching to and on fieldtrips to make learners environmentally literate and responsible citizens'. Songezo has developed as part of his waste management programme a poster through which he notes that '... I am trying to conscientise and to make people more responsive' and '... it is better to inform and to give people knowledge before they take action' (DF10, C5). These examples reflect some behaviourist trends evident in participants' work, despite the exploration of limitations in, and critique of some other behaviourist approaches used in context. They similarly reflect the deep entrenchment of dominant, behaviourist orientations that come to shape educational processes and the difficulties in challenging the dominance of these orientations. Daniel for example, describes the pamphlet that he developed as one reflecting '... a top down approach and can be identified as behaviourism' but feels '... that any other approach would be impractical, given the confrontation and aggression shown at the forum and the people involved' (DF10, C4). Cathy had the opportunity to use her fieldtrip in her work context and notes that she felt '... knowledge and awareness would lead to behaviour change ... this is not necessarily the case

... I need to change my approach ... include an action component' (DF10, C3). Anton describes his teacher development workshop initially as '... explain to them what the environment is all about' and later corrects himself in '... try to define the term environmental coming from them ... try not to tell them, but use feedback from previous discussions' (DF10, C1). Vasintha describes her workshop as a '... sharing session ... because I did not want to create the illusion that I am an expert in this area' which appears to be a challenge to the notion of the 'expert' in conventional educational practices (DF10, C2). These examples begin to show the emergence of conflicting rationalities as participants engage in reflexive processes of change that challenge 'the norm' in teaching and learning processes in their context. The comments raised here further indicate that reflexive processes cannot be seen as a conclusive process and requires an ongoing orientation to enable and support continuous deliberations and explorations of ways to challenge dominant knowledge frameworks and inbuilt power relations. In Cathy's view '... process and not product is the important thing to remember' (DF10, C3). It would appear that reflexive processes and the development of reflexive competence needs to be considered in terms of a longer-term and ongoing process of reflexive explorations of options for change.

➤ **The central role of knowledge**

The shaping influence of dominant behaviourist orientations is similarly evident in the emphasis on the central role of knowledge in some of the proposed programmes. Cathy for example envisions an action component as part of her fieldtrip programme that she describes as '... interview people ... do research ... it has become a lot more scientific with recording data, hypothesis testing ... and I know that this is an area in which I have to improve' (DF10, C3). Songezo similarly places much emphasis on the imparting of knowledge to generate action to address environmental issues and risks (see 6.2.2 & above).

This central role of knowledge might similarly be implied in Anton and Vasintha's proposals of sharing what they had learnt *about* environmental issues and risks through the course. Vasintha for example notes that considering what her own perceptions and understanding of the environment was when she started the course, she was sure that her colleagues would benefit from exploring the environment in a similar way and the workshop aimed at '... sharing my experience [of] the RU/GF [environmental education] course' (DF10, C2). She notes '... the idea of the workshop was to share with my colleagues what I have learnt ... to give them a bit of understanding of the environment ... to make a difference regarding people's view of the environment'. She does however reflect on the workshop and notes that one important thing that she feels she has omitted is '... an action component ... how will you use the ideas generated today' that reflects her ongoing reflection on the limitations of transferring

information. Anton similarly notes that through the course he realised that there was more to the environment than the bio-physical world and felt that ‘... there must be many teachers out there who are under the same illusion’. Both Anton and Vasintha focussed on exploring understandings of environmental issues and risks, in the hope that this would translate into some form of environmental action. Vasintha’s comment shows the beginning of her exploration beyond sharing perspectives on environmental issues and risks. Conventional educational practices often reflect knowledge in this central role, often presented as the one truth, and these examples similarly reflect the dominance of behaviourist orientations to education and how these come to shape our practices and at times ‘erect’ constraints to change.

➤ **Assumed roles and identities in educational processes**

The behaviourist orientations to education and the central role of knowledge appear to shape roles and identities assumed in educational processes. Conventional teacher training processes to which many of us have been exposed for example, focuses on teaching teachers the content with the intention of them imparting this knowledge to learners. Out of this conventional role of knowledge being ‘passed on’ from the more enlightened to the less enlightened, further tensions emerge in the roles and identities assumed in these proposed teaching and learning processes. Though many participants begin to challenge expert positions and power differentials in education and training processes, such as for example in the case of Cathy wanting ‘... greater learner participation’ in her fieldtrips, Daniel proposing more ‘... participatory approach[es]’ and Anastelle and Songezo’s emphasis on ‘... community participation’, many appear to propose approaches to ‘... imparting knowledge’ while at the same time recognising the limitations in these approaches (DF10, C3, C4, C6 & C5). This is for example evident in Vasintha and Anton’s approach to sharing what they have learnt on the course about environmental issues and risks with others in their work context (DF10, C1 & C2; see also 6.4.1, 6.4.2 & above). This is similarly evident in Songezo’s proposal for developing a poster to ‘... give knowledge and make people aware ... empowering people with information’ (DF10, C5; see also 6.4.5 & above). A further example is evident in Daniel’s exchange of information through a pamphlet, though he does begin to recognise the limitations in this approach (DF10, C4, see also 6.3.3, 6.4.4 & above).

Examples of how conventional approaches to teaching and learning shape roles and identities is similarly evident in the frustration expressed by some participants through the course with not ‘being told’ what constitutes good environmental education practice (see 6.3.4). Close to the end of the course, for example, Anastelle continued to express frustration with not knowing what environmental education is (DF10, C6). Approximately three months prior to the end of the

course, she requested the need for more use of the course materials so that she could ‘... know more, and understand environmental education processes clearly, when talking with colleagues as the NBI’. Anastelle appears to have had the expectation of being told what environmental education is and what constitutes sound environmental education practice that might have placed her in a better position to engage with her colleagues around environmental issues, risks and responses. In commenting on Anton’s construct, Wendy the tutor writes that ‘... Anton was looking for a recipe for good environmental education practice that he could follow’ (DF10, C1). Anton did however realise through the course that ‘... I had to explore it for myself’. At the last tutorial for the WCTG, Eureka, the third support tutor for this group, writes ‘... Cathy wanted to know whether she was “doing the right thing” and seems to find it frustrating that the course was not telling her yes or no’ (DF8, obs.notes, WCTG – 06/05/00). Wendy similarly notes that ‘... Cathy wanted to be fed the minimum [of] model ways to improve her teaching and then simply go out and apply what she had learnt’ (DF10, C3). The expected role of being ‘taught’ by the ‘experts’ about environmental education is similarly reflected in many participants focus on ‘... broaden my knowledge’, ‘... know more’ and ‘learn more about environmental issues’ expressed in the expectations that participants had at the start of the course (see 6.2.1). Conventional influences on assumed roles are similarly evident in Vasintha and Cathy’s expression of waiting for policy through which environmental education could become integrated into the curriculum in their school contexts (DF10, C2 & C3; see also 6.2.2). Cathy for example ‘... feel[s] that a policy is quite important ... I would like the principal to take [environmental education] more seriously ... if the Ministry of Education could make it compulsory it would be great’ (DF10, C3). Vasintha similarly feels that ‘... all teachers are not involved in environmental education ... because environmental education in the curriculum has not yet been highlighted at the school’ (DF10, C2).

As noted before many participants do begin to realise the power differentials in learning processes and these examples further reflect the innate struggle of challenging conventional and dominant orientations to education in context and the roles and identities inscribed in these.

➤ **Tensions in integrating theory and practice**

As reflected in section 6.3.4 connecting descriptions of practice to the motivations, intentions and purposes inscribed in these is often a struggle for participants. Tensions begin to emerge as participants engage with theoretical perspectives and draw on these in reflecting critically on the unconscious preconditions of thought and action (see 6.3.4).

Participants appear to be more comfortable with discussions of what they do in professional context and struggle to articulate why they do or think about things in a particular way and how

things come to be the way they are (see 6.3.4). At one tutorial with the WCTG for example, as participants presented the ideas for assignment two, the emphasis of 'what' emerged in these presentations and less explorations of 'why' (DF8, obs.notes, WCTG – 28/11/99; see also 6.3.4). Anton for example, provides in his presentation a brief overview of the CCE and the lessons that they offer to learners and teachers. He then describes the aims of the centre as being '... to encourage learners to participate in action projects' and the objectives to '... address conservation issues, span the natural and man made environment and social in a multidisciplinary approach'. Following Antons' presentation, a discussion ensues as to the difference between aims and objectives. For many participants this was an opportunity to clarify the aims and objectives of their own programmes and Vasintha notes that this was for her an opportunity '... to grapple with the concept of aims and objectives which previously seemed interchangeable concepts'. This discussion was followed by other participants' descriptions of their programmes, and discussions of the aims and objectives of these programmes. None of the participants engaged in discussions around 'why' and 'how' these aims were developed, as is a requirement of the assignment (see 6.3.4). In another example, Anton's assignment three explores in great depth and detail, the nature of the environmental education programme in the context of the CCE (DF10, C1). In this assignment he describes very briefly the reasons for these orientations being the behaviourist orientations to which they had been exposed through past environmental education processes. Amongst participants in the WCTG, the emphasis on 'me and my programme' was similarly observed by Eureka, the third support tutor in this group and she notes that '... [participants] appear to have fallen victim to ... individualism' (DF8, obs.notes, WCTG – 06/05/00). Other examples of emphasis on own programmes and what is done in practice is evident in Daniel's focus on technical reports in discussing environmental issues and risks in context and the focus on environmental management policies, with less emphasis on how this translates into practice (DF10, C4; see also 6.3.1). A practice - theory divide is similarly evident in the case of Songezo's initial drafts of assignment three where he initially summarises the main ideas presented in the core texts and through assessment processes begins to relate these ideas to his practice (DF10, C5; see also 6.3.3). These two examples highlight the significance of assessment processes and ongoing interactions within these to support participants in integrating theory and practice (see 6.3.4).

As noted before, in addition to theoretical perspectives providing participants with a framework out of which to undertake a critical review of practice, tensions sometimes emerge in the way in which concepts are used in discussions (see 6.3.4). For example, Songezo's discussions of practice place much emphasis on community participation (DF10, C5; see also 6.2.1, 6.3.1 & 6.4.5). At the same time however he links this orientation to an equally strong emphasis on awareness, attitude change and behaviour change, and in commenting on Songezo's construct, Lawrence notes that he is '... not sure how Songezo intends to bring the two together'. This

tension is further highlighted through Songezo's description of 'empowerment' as a process of '... equipping people with knowledge and skills relevant to their work'. Tensions similarly emerge in the way in which Cathy proposes an action research approach to her fieldtrips, in which she emphasises the accumulation of scientific information through an assignment that she proposes for learners to do (DF10, C3; see also above). She describes this action research approach as '... involves information gathering, exploring and questioning and reporting and taking action'. From descriptions of the fieldtrip, the '... taking action' part of the programme involves, for example, '... letters which kids wrote to the municipality gives them a better sense of achievement ... it makes them realise that they can in fact do something to make a difference'. Daniel's description of more participatory approaches, linked to taking learners out into the field to observe environmental issues and impacts is a further example of tensions emerging from the use of concepts (DF10, C4; see also 6.3.4). As noted before in section 6.3.4 theoretical perspectives also at times appear to be used as 'labels' in describing practice. Songezo, for example uses the term '... constructivism' in relation to '... people plan together, to get a common understanding as a community' (DF10, C5). Cathy in assignment three and in reflecting on her fieldtrip proposes to '... broaden the issue to include political, bio-physical, economic and social, which would be using a socially critical approach' (DF10, C3). In this assignment a clear articulation of the socially critical approach does not become evident so that it might seem that the socially critical approach involves exploring different dimensions of environmental issues and risks. In describing some of her classroom methods Vasintha notes that these '... reflect social constructivism' and '... participatory methods are adopted' through a group activity wherein learners, through interaction with partners '... share ideas and information' (DF10, C2). Anton describes a co-operative lesson of learners working in groups as constructivist approaches (DF10, C1). As noted before, the issue of 'labelling' has emerged out of various research projects undertaken in the context of the course and becomes particularly evident as participants begin to explore educational orientations inherent in methods and processes used through engagement with theme three in the course (see 5.4.4, 5.5 & 6.3.4). These examples might reflect in some cases a misinterpretation of concepts, they could reflect a more 'superficial' interpretation of these concepts or possibly a lack of or limited experience within these methods and processes. These ideas are mainly explored in the context of core text three and assignment three. This exploration usually takes place around midway through the course. During the second half of the course most participants become preoccupied with developing perspectives, ideas and details around assignment four and might be distracted from a deeper engagement with these theoretical perspectives. In this sense, it might be a case of a limited experience and interactions with these theoretical perspectives that result in possible misinterpretations or more superficial interpretations. The use of these 'labels' signal a 'start' to engaging within these theoretical perspectives in reflexive explorations (see 6.3.4), but also point to the need for ongoing support that enables longer-term engagement with

these ideas and critically considering options for change relative to these ideas. This points to the need for considered attention around the use and role of theory in reflexive and ongoing learning processes and the implications for the way in which theoretical perspectives are introduced to participants and used in contact sessions with participants (see 7.4).

➤ Responses in context

Popkewitz and Brennan (1999:22) argue for a need to challenge modernist conceptions of context as bound within geographical and conceptual settings and fixed within a changing sequence of time. Relative to this conception of context as ‘... regional spaces’, all participants begin a critical exploration of socio-historical factors shaping thought and practice beyond the specific institutions within which they find themselves during the course (see 6.2 & 6.3). Anton and Vasintha’s conception, for example, of their own teaching being shaped by that to which they have been traditionally exposed (DF10, C1 & C2; see also 6.3.3). Songezo and Anastelle’s (as in other cases as well) recognition of socio-political factors out of which environmental issues and risks emerge in context and the lack of community consultation and participation in conventional approaches to addressing environmental issues and risks (DF10, C5 & C6; see also 6.3.1). Tensions however, begin to emerge in the proposals that participants have developed to the extent that some of the methods and processes appear to ‘reproduce’ these issues rather than challenge them through practical implementation (see above). In this sense, a consideration of socio-historical contexts might become more of a rhetorical exploration and might be more congruent with Popkewitz and Brennan’s (1998:7) ‘... philosophy of consciousness’ premised on ‘... locating the repressive elements ... or ... identifying the groups that were to bring about’ redemption (see 4.6.2). For example, despite a focus on community participation and participatory approaches, in Songezo’s assignment work there is no evidence of community involvement in either identifying the issue of plastic waste in the community or in developing the proposal through which to respond to this issue in the community (DF10, C5; see also 6.2.1, 6.3.3, 6.3.4 & 6.4.5). Vasintha, Anton and Cathy all appear to recognise the social repressive elements, and their power to reproduce unequal social relations, present in existing and dominant educational approaches, however, proposals for environmental education processes in context continue to reflect approaches through which these social relations are likely to be perpetuated (DF10, C2, C1, & C3; see also 6.3.1, 6.3.3, 6.4.2, 6.4.1 & 6.4.6). All participants however come to recognise the need to address these issues and see the opportunities in environmental education processes to challenge these reproductive elements further in practice (see 6.3.3). Vasintha for example notes that ‘... my understanding of why is not analytical enough ... but it is a process’ (DF10, C2). Cathy similarly notes the development of her fieldtrip as being more focussed on the process rather than the product and sees the experience of the course as opening up an ongoing opportunity for

change (DF10, C3). This approach is similarly evident in Anastelle's comment '... no idea or process is cast in stone ... one should be flexible to include changes along the way' (DF10, C6).

A further tension that begins to emerge is that, at times 'context' appears to become a 'justification' for doing things in a particular way. For example, Vasintha notes that '... the methods depends on the size of the class ... how the class responds in the lesson ... the setting of the classroom' (DF10, C2). She further notes that '... large numbers, a lack of discipline, the noise level or on days that I am not well prepared, I find that I revert to what I know best ... transmission teaching ... reverting to the textbook'. Daniel's case similarly reflects somewhat of a focus on the spatial boundaries of Khutala Colliery and the surrounding community and notes that given the confrontational nature of the IAP meetings, approaches beyond the sharing of information via a pamphlet does not seem appropriate (see above). In concluding his third assignment of describing the lessons at the CCE as being predominantly shaped by behaviourist approaches and education about and in the environment, Anton writes that '... we can only do in an urban area what we are capable of' (DF10, C3). These statements appear to focus more on practical issues confined within geographic boundaries and time spaces and could come to limit the reflexive exploration of options that transcend these bound spatial contexts. In this sense options for change could become tied within spatial contexts and do little if nothing to challenge social actions and interactions derived from within existing social structures, systems and processes. Though there is a recognition of the need to do things differently, as evident in Anton's statement '... although we have a huge variety of areas in our programme committed to environmental education ... does not give us any reason to get complacent with what we are currently ... doing', the former statements appear to become a 'justification' of context shaping what is currently being done. This process of 'justifying' actions in terms of practical aspects related to, and confined within spatial context could become limiting in terms of an epistemologically framed conception of reflexive agency in that it fails to consider broader unintended consequences of thought and action.

From these examples it becomes evident that participants begin a critical exploration of the notion of socio-historical context in identifying the issues that confine and inter possibilities for change. This exploration however appears to come into tension with modernist and possibly existing conceptions of context tied within geographically bound spaces and time sequences. There appears to be a need in the course to support reflexive learning processes that encourage participants to move beyond the spatial bounds of their immediate and physical context to consider thought and action in the context of broader socio-historical factors that have come to shape thought and action within these contexts. Considering thought and action in a broader socio-historical context would allow the exploration of greater possibilities through which to challenge the social conventions and 'norms' that define specific social actions and

interactions within knowledge frameworks and social roles and identities derived from these social actions and interactions and that shape thought and action within specific professional context (see 7.2 & 7.3).

➤ **Orientations to change**

A key and central feature in reflexive processes is the intention to support social change (see 1.5.1, 1.5.4 & 4.6). Through an engagement within various course processes all participants begin to explore a range of options for change. Vasintha for example begins to see environmental education as '... a socio-ecological movement' involving 'active community participation' that seeks to challenge and '... change top down approaches' in education (DF10, C2). Anton similarly appears to recognise environmental education as a process intended towards social change in noting that '... environmental education should empower all peoples and promote opportunities for grassroots democratic change' (DF10, C1). Cathy, Daniel, Songezo and Anastelle similarly reflect intentions for change in their discussions of proposed participatory approaches in the work that they do and involving communities in environmental education processes that respond to contextual environmental issues and risks (DF10, C3, C4, C5 & C6; see above). Tensions however begin to emerge within these proposals for change in terms of the inscribed orientations to change. This becomes evident in many participants focus on what the issues are in context with less exploration of how and why practice is constructed in specific ways and how things come to be shaped (see above). Janse van Rensburg (1994:10) notes that these approaches to practical problems within specific professional contexts reflect orientations to change in which '... the nature and direction of change is set by a particular community or group of practitioners'. These orientations to change become evident in participant's proposals of sharing information about environmental issues and risks with others in context, believing that this sharing of information will effect change and others suggesting processes of empowering either themselves or others to bring about change (see above). Popkewitz (1994:174) recognises the limitations inherent in these approaches to change in that they do not transcend specific practical problems and specific institutional contexts and so come to reflect 'superficial reform'. Janse van Rensburg (1994:13) argues that such approaches fail to bring about meaningful change in that '... it fails to question and transform the action theories of practitioners'. Such orientations to change appear to link closely with a philosophy of consciousness wherein change processes are explored within the very social foundations, systems and structures out of which the need for change emerges and so limits the exploration of alternative ways of knowing and the construction of social life (Popkewitz and Brennan, 1998:23). In this sense, it becomes evident that the critical engagement within change processes that seeks to challenge the social foundations, systems and processes out of which environmental issues, risks and responses emerge requires some considered attention in the

context of the course. To support reflexive agency further, there appears to be a need to engage learners more critically in reviewing orientations to change and support the exploration of options for change that challenge dominant and existing knowledge frameworks within change processes are constructed and illuminate new and different options for the social construction of life (see 7.2).

6.5 CONCLUDING REMARKS

This chapter has attempted to provide a detailed account of participants' engagement in reflexive processes of change. It similarly highlights a range of integrative elements of reflexive competence that has developed amongst participants and supported an engagement in reflexive competence.

In keeping with the social epistemological approach to this case study research, section 6.2 provides a descriptive and detailed account of the multiple social contexts out of which reflexive agency has emerged and that are in turn shaped by reflexive agency. This detailed description provides the framework within which to review the dual relationship between social agency and structure. Section 6.2.1 introduces the academic and professional background of participants and their experience in environmental education. Out of this description emerges a more detailed account of the socio-historical contexts out of which reflexive agency has emerged and focuses on a context of transformation in South Africa and the implications this holds for participants in their practice of environmental education. This descriptive account of context also introduces the more specific professional context of participants and highlights some of the dominant orientations to environmental education processes in these contexts (see 6.2.2). This description intends to provide insight into the socio-historical factors that confine, inter and also shape possibilities for change. Further, the specific learning contexts of the regional tutorial groups to which participants are affiliated discussed in section 6.2.3 provide insight into how the reflexive orientation to the course is given effect and supports and engagement in reflexive processes. These various aspects introduced in section 6.2 are presented as a collective of multiple social contexts that 'work' together in shaping thought and action in environmental education.

In line with the main theme of the thesis, this chapter then also discusses participants' engagement in reflexive processes and the development of various integrative elements of reflexive competence supported through course processes. Section 6.3 explores evolving constructions of environmental issues and risks in context, exploring critically socio-historical contexts out of which dominant constructions of, and responses to environmental issues and risks emerge and a critical exploration of the unconscious preconditions of thought and action

as we develop responses to environmental issues and risks in context (see 6.3.1, 6.3.2 & 6.3.3, respectively). This section also explores participants' engagement within theoretical perspectives and actions and interactions within course processes and in the company of others, as processes supporting an engagement within reflexive processes and the development of reflexive competence (see 6.3.4 & 6.3.5, respectively).

In recognising the interactions between structure, agent and agency, section 6.4 locates reflexive agency in context. This section firstly introduces the culmination of learning in proposals for environmental education in context developed by participants through the work of assignment four. Out of a review of reflexive agency in context, various tensions and conflicting rationalities begin to emerge as participants begin to challenge dominant approaches to environmental education in their respective contexts. The emergence of conflicting rationalities become evident in tensions emerging around:

- ◆ Existing and dominant orientations to education, often reflecting behaviourist patterns and trends, and the exploration of methods and processes to challenge these dominant and existing orientations;
- ◆ The central role of knowledge in existing and dominant teaching and learning processes, and consequent roles and identities shaped within these processes and developing challenges to these dominant roles and identities;
- ◆ The process of integrating theory and practice as attempts are made to reflexively review practice and illuminate limitations in assumptions shaping practice through drawing on theoretical perspectives as analytical lenses through which to critically and reflexively review practice;
- ◆ The processes of exploring options for change within specific professional and institutional contexts.

The discussion above reflects that dominant and conventional approaches to environmental education and the social roles and identities forged through these are deeply entrenched in our thinking and actions. From these discussions it emerges that challenging these knowledge frameworks and power relations embedded in these requires considered attention and these discussions begin to illuminate various possibilities for reorienting the RU/GF course to better support participants in a reflexive exploration of environmental issues, risks and responses in context thus potentially enhancing reflexive agency. Chapter seven picks up on these emerging conflicting rationalities and tensions and begins to explore specific course processes and

features that could better support participants in challenging dominant knowledge frameworks and social roles and identities as a means to better supporting reflexive processes of change through the course. It thus considers an epistemologically framed notion of reflexivity for a course oriented explicitly towards supporting processes of social change.

7.1 INTRODUCTION

Drawing on theoretical perspectives introduced through the thesis, and the analytical framework introduced through section 3.7.2, chapter six provides insight into participants' engagement within reflexive environmental education processes in response to contextual environmental issues and risks. The chapter similarly provides insight into the contexts out of which reflexive agency has emerged and in reviewing reflexive agency within context, highlights various tensions that emerge as different rationalities come into conflict in context. In line with the aims of the study, this chapter draws on the theoretical perspectives and the insights emerging from the data to focus on the course processes in the RU/GF course that enabled and supported an engagement in reflexive processes and the development of reflexive competence.

When the RU/GF course originated it was designed to support the development of critically *reflective* practitioners in environmental education and so focussed on strengthening critically reflective competence. The notion of reflexivity was emphasised to a lesser extent (Personal Communications, Lotz-Sisitka, 2002; see also 1.3.1). The emphasis on reflexivity arose in response to the development and implementation of the South African NQF and through the exploration of ways to potentially align the course within the competence-based framework of the NQF (Janse van Rensburg & Lotz, 1997, Raven 2000; see also 1.2, 2.4 & 2.8). In attempting to integrate the intentions of the NQF into the existing course, various revisions were brought into the course over the years in an attempt to better enable the development of reflexive competence. At the time of bringing these revisions into the course, the notion of reflexivity and reflexive competence had not been explored in depth and might have resulted in a less effective revision of course processes in the context of reflexive responses to the increasing scale of environmental degradation. In focussing specifically on the notion of reflexivity as social process of change and reflexive competence as the evidence of engagement within reflexive processes, through this research further insight has been gained into course processes and features and ways in which they could better support participants in reflexive explorations in the case of the RU/GF course.

Chapter five introduces a range of course processes and features intended to support participants in reflexively exploring opportunities to respond more effectively to environmental

issues and risks emerging in context. Section 6.2.3 similarly provides more specific insight into the way in which these course processes 'play out' in the context of regional tutorial groups where the reflexive orientation and aims of the course are intended to be given effect and that enable and support reflexive agency. The following chapter takes a closer look at these range of course processes and features with the intention of exploring ways for reorienting course processes to better support participants in the critical and reflexive exploration of approaches to environmental education processes in context. To this end, discussions in this chapter draw further on the analytical framework developed through the research and introduced in section 3.7.2, to review some of the specific course processes that could be reoriented to better support the development of critically *reflexive* practitioners. This discussion also draws on emerging insights from the data presented in the former chapters and focuses specifically on the tensions that emerge for participants as they engage in reflexive processes of change (see 6.4.7).

Beck's (1992, 1999) thesis of reflexive modernisation introduces the notion of environmental *risks* unleashed through processes of modernisation (see 2.5 & 5.2). Risks are characterised by uncertainty, unpredictability and unintended consequences, not confined to any geographical boundaries or spaces in time (see 5.2). In this sense, risks focus our attention on what is not yet, but might well come to be in future (Beck, 2000:100). In the context of a 'risk society' it is then not only knowledge that becomes crucial in exploring responses to environmental issues, but also *unawareness*, what is not known about environmental issues and risks, and also 'why' we do not know. As such, responding to environmental issues and risks move beyond a focus on the actual issues at hand, but requires a critical consideration of the social, foundations, systems and processes out of which these issues and risks emerge and within which they are managed (see 2.6). In this light, environmental education becomes social processes of change to challenge the dominant scientific knowledge frameworks within which environmental issues and risks are generated, communicated and managed (*ibid*). This conception of environmental education as social processes of change resonates with Popkewitz's (1999) notion of a social epistemology that foregrounds an exploration of socio-historical contexts to understand how thought and action is shaped (see 1.5.1, 1.5.5 & 4.6.3). This critical exploration of how and why social life is constructed, Popkewitz and Brennan (1998:28) argue serves to destabilise reigning forms of reason and the power relations embedded in these and so opens up possibilities to think and act otherwise (see 4.6.3). Change is thus conceived of as ruptures and breaks in dominant forms of reasoning and consequent principles of ordering in the construction of the 'self' in social life (*ibid*). A review of course processes and features in the following chapter is undertaken through a consideration of a socio-epistemologically framed conception of reflexivity, considering ways in which participants could engage more effectively within processes of change that challenge dominant knowledge frameworks and the social roles and identities inscribed in them as they attempt to respond to contextual issues and risks.

7.2 COURSE ORIENTATION AND AIMS

Beck's (1999:109) thesis of reflexive modernisation offers a distinction between reflection and reflexivity. Reflection is described as being integrally tied up with the knowledge of foundations, systems and processes out of which environmental issues and risks emerge. Reflection appears to be linked to Popkewitz and Brennan's (1998:8) notion of a '... philosophy of consciousness' through which repressive elements that prevent progress are identified or by identifying the groups that are likely to bring about change (see 4.6.2). A philosophy of consciousness could however be limiting in that options for change are not explored outside of existing and dominant knowledge frameworks (and power relations embedded in these) and '... remain complicit with, and even extends the systems to which it is opposed (Young, cited in Popkewitz and Brennan, 1998:8).

Reflexivity, distinguished from reflection appears to offer options for moving beyond the boundedness of thought and action confined within dominant knowledge frameworks and embedded social relations (see 1.5.1). The central feature of reflexivity Beck (1999:109) recognises as focussing on unawareness, what is not yet known but could come to be known in future. Reflexivity Beck (1999:131) argues involves '... the acknowledgement of outside perspectives and rationalities ... and the explicit working out and processing of unawareness'. In the context of 'a risk society' engaging with these complex processes of reflexively exploring responses to environmental issues and risks, important aspects to consider are '... who knows what and why or why not' and '... how are knowledge and awareness constructed, acknowledged, questioned, denied, asserted or ruled out' (*ibid*:110). These questions then not only focus on the construction of environmental issues, risks and processes through which they are managed, but focuses more importantly on the social foundations, systems and structures out of which environmental issues and risks are generated, communicated and managed. This focus on unawareness of unintended consequences of environmental issues and risks do not necessarily challenge or contradict the critical role of reflection within existing knowledge frameworks and consequent social formations and structures, but '... opens up an expanded and more complex game' of exploring '... various forms and constructions of ... knowledge [and] unawareness' (Beck, 1999:110).

For many participants in the RU/GF course, tutors and students alike, reflection is used interchangeably with reflexivity. Though central to engaging in reflexive processes, reflection however needs to be distinguished from reflexivity and considered as *part* of a broader process of explorations beyond responses available within dominant knowledge frameworks and constructions of social life.

The introductory texts to the course materials introduce participants to the orientation and aims of the course and similarly provides an overview of the range of course processes and features that are shaped by the orientation and aims of the course (see 5.4.4). Workshop one similarly introduces participants to the course aims and orientation, drawing on these introductory texts (see 5.4.2). Though alluding to the reflexive orientation and aims underlying the course in the discussion of various features underpinning the course, these introductory texts and discussions however, appear to place more emphasis on reflection than reflexivity. For example, the introductory text to the course materials describes the background to and the choice of a semi-distance structure for the course as being ‘... to give practitioners enough time to thoroughly *reflect* on their work and on the educational ideas influencing their work’ (Rhodes University Environmental Education Unit, Introductory Text, 1999:3, my emphasis). The purpose of the course is further described as ‘... to develop ourselves and others who participate in the course as active practitioners with a *reflective* orientation’ (*ibid*, my emphasis). This introduction continues ‘... this means that we are working towards a better understanding of the *theory in our practice* and the *theory within new ideas*’ (*ibid*). The introduction to the course is concluded with ‘... hopefully this will allow us to better work for *change* towards sustainable living (*ibid*). From these introductory ideas to the course, the reflexive orientation is possibly implied through a focus on developing an understanding of theory in practice and theory within new ideas and change towards sustainable living, though it becomes evident that the notion of reflection is foreground relative to this reflexive intent (see above).

Reflexivity and change and possibly reflection as well, are potentially new ideas that might have been absent from many of our prior educational experiences (see 6.3). In the context of a ‘risk society’ and the context of the course in supporting participants to respond more effectively to contextual environmental issues and risks, it might be necessary to clarify and articulate more explicitly the reflexive intention and purpose of the course to support change. This might be achieved through the development of explicit aims for the course that might clarify reflexivity as processes towards challenging dominant constructions of environmental issues and risks and processes through which responses are developed. It might be useful in the development of these explicit aims to draw on Beck’s (1992, 1999) notion of unawareness as being central within reflexive processes, exploring critically who knows what and how and why unawareness is constructed and maintained. It might similarly be useful to clarify the epistemological framing of reflexivity as an exploration of the socio-historical factors that have shaped thinking about and action within environmental education processes, to understand how and why we think and act the way that we do, and to explore critically new and different constructions of environmental issues and risks and responses. As such it might be necessary to clarify reflexive processes of change as the challenge to dominant knowledge frameworks and power relations embedded in these to challenge the way in which we come to know about and act on environmental issues

and risks. This clarification might then move the course closer towards opening up the horizons for inquiry into responses to contextual environmental issues and risks through a focus on non-linear processes that do not confine and inter possibilities for responding effectively to these issues and risks (Beck, 1999:119; see also 1.5.1 & 5.2). As noted before, it similarly becomes necessary in the introductory texts to clarify the distinction between reflexivity as social processes of change and critical reflection as an integral part of this process of exploring options for change in the way in which we conceive of and respond to environmental issues and risks (see below). Here I would recommend retaining the focus on critical reflection within a discussion of the key features of the course but highlighting its nature and purpose in the context of exploring options for change (Lotz-Sisitka, 2002:118).

Exploring and opening up options for change is a key feature emerging from within an epistemological framing of reflexivity (see 1.5.1, 4.6.3, 5.2 & 7.1). Beck (1992, 1999), Popkewitz (1999) and Popkewitz and Brennan (1998) imply the intention of critically exploring and destabilising dominant and existing knowledge frameworks and consequent social relations to open up possibilities for change. One of the dominant orientations to change emerging within the context of developing responses to environmental issues and risks focuses on issues of localised practice and seeks an improvement of practical situations within specific institutional contexts (Janse van Rensburg, 1994:10; see also 6.4.7). Popkewitz (1984:174) notes the limitations inherent in such approaches in that change simply becomes ‘... motion within a system’ and comes to reflect a modernist perspective of change as ‘... open ended movements in time’ and processes of change come to be enacted within modernist assumptions (Janse van Rensburg, 1994:16). Popkewitz (1984:174) argues that such approaches to change do not transcend the practical issues and the contexts within which they emerge and so do not recognise constraints to thought and action that have ‘... wider and systemic roots’ (Janse van Rensburg, 1994:13). In the context of responding to environmental issues and risks, where knowledge is seen as socially constructed, contingent and temporal, these conceptions will do little to challenge the root causes of these issues and risks (see 2.6 & 5.2). Responses to environmental issues and risks therefore appear to require new and different orientations to change, processes through which the social foundations, systems and processes out of which these emerge are challenged, an approach that resonates more firmly with a social epistemological approach to change (Popkewitz and Brennan, 1998:9; see also 4.6.3).

The notion of change is cited very briefly in the introduction to the course materials in ‘... this will allow us to better work for *change* towards sustainable living’ (Rhodes University Environmental Education Unit, Introductory Text, 1999:3, my emphasis). The notion of change is further picked up in discussions of the key features of the course towards the end of the introductory texts, for example in relation to critical reflection ‘... if we reflect critically on our

teaching and development activities we might be able to improve them and stimulate and shape those changes' (*ibid*:11). In another example in an introduction to '... the social construction of meaning' a discussion of change is highlighted in '... if we look critically at these social systems and practices, in the light of the environment crisis, we might see that they need to change ... if people made problematic systems, possibly people can change them' (*ibid*). Though the notion of change is used in these discussions, less reference is made to challenging dominant conceptions of change as attending to practical issues within specific social contexts (see 6.4.7). Data presented in section 6.4.7 reflects some of the tensions that participants encounter as they attempt to challenge dominant orientations to knowledge, teaching and learning in context. In this sense it might be necessary to consider more clearly ways in which to support participants in challenging the reproductive potential of dominant orientations to teaching and learning in professional contexts, including conceptions of change. It might be necessary to integrate into the introductory texts some challenge to modernist conceptions of change in the context of discussions of the reflexive orientation and aims to the course (see 6.4.7). Here it might similarly be useful to draw on Popkewitz's (1984) challenge to modernist conceptions of change and Beck's (1992, 1999) conception of responses to environmental issues and risks as social processes of change (see 1.5.1, 5.2 and above).

Delanty (1999:152) notes that the risk society has marked the end of the traditional distinction between nature and society. Through recognising the social foundations, systems and processes out of which environmental issues and risks originate, are communicated and managed, responses to environmental issues and risks become processes focussed on not simply addressing environmental concerns, but also the construction of social life out of which they emerge (see 2.6). In the course, environmental education as social processes of change is integrated in discussions of trends and patterns in environmental education across the four themes. For example, core text three encourages participants to '... look back at the changes in the fields of education, development and evaluation [to] see socio-historical trends which [they] can use ... to grapple with the complex processes of addressing environmental issues and risks through education' (Rhodes University Environmental Education Unit, Core Text Three, 1999:3). Through locating educational theories in socio-historical context, the text provides an overview of trends in education theory, and notes, for example that '... behaviourism ... influenced and strengthened by the developments in modernist thinking as people believed more and more in positivist ideas and scientific authority' (*ibid*:5) which led to methods such as '... 'show and tell', solitaire, targeting communications [of] 'getting the message across' through posters and pamphlets, for example' (*ibid*:6). The text encourages participants to '... reflect on the methods use[d] in ... practice, from the vantage point provided by these theories' (*ibid*:4). The text further notes the significance of '... adopting a historical view [to] define different ways of seeing the world' (*ibid*:14) and developing '... a better understanding of the ideas which inform

and influence [the] use of [different] methods in different situations' (*ibid*:17). Through engagement with the course materials, many participants come to recognise environmental education as social processes of change (see 6.3.1). To strengthen the underlying orientation of the course to support the explorations of options for social change it might be useful to integrate some of the discussions dispersed across the course materials into the introductory texts, so that these key ideas supporting social change become an overarching orientation carried throughout learning in the course.

Various course processes and features are intended to support participants in reflexively exploring options for change in environmental education processes in professional contexts (see 5.4). These course processes and features are introduced to participants through the introductory texts, during the initial workshop and are revisited throughout the course (see 5.4.1). Many of these course processes are new and novel to many participants (see 5.3.3). Working and reworking assignments in drafts, assessment to encourage further learning, engaging in critical reflective processes and the role of theory in informing practice, are learning processes which participants appear to have had little or no exposure to in prior educational experiences (see 5.4 & 6.2.3). Section 6.2.3 and 6.4.7 introduces some tensions and conflicting rationalities emerging as participants engage with course processes and features, drawing on the particular social roles and identities inscribed in pedagogies associated with traditional models of teaching and learning (see also 4.3.2). For example, in participants' expectations of being 'told' or 'shown' what constitutes 'good' environmental education practice (see 6.3.4 & 6.4.7). A further example of tensions emerging is evident in proposals developed by participants' that sometimes reflect similar behaviourist trends and patterns to those critiqued in environmental education programmes in context (see 6.3.4 & 6.4.7). Some of the course processes are revisited throughout the course and in some cases participants come to see the intention and purpose in these to support reflexive explorations of options for environmental education. Though in some cases, participants struggle with the 'different' orientation to course processes and its intention and purpose in the context of the course (see 6.2.3). The tensions discussed in section 6.3 and 6.4.7 point to the need in the course to explore with more clarity the intentions and purpose of various course processes in the context of reflexive environmental education processes. It might for example, be useful to clarify assessment processes as encouraging the ongoing and reflexive exploration of options for change through developing initial ideas and opening these up to question and critical dialogue in the assignment writing and assessment processes (see 7.5). It might also for example be useful to clarify the role of theory in the course, not as providing all the 'right answers' to questions people might have, but an analytical lens through which to reflect on practice and explore options for change (see 7.4). These are some ideas that might be useful in clarifying course processes. It might however be useful to explore with participants these course processes in the context of the reflexive aims

and orientations of the course at the start of the course. As noted before, the reflexive intention is implied in various ways in the introduction to the course. It might however be necessary to encourage an explicit working with these ideas through tutorial processes and thus has implications for clarifying the course orientation, aims and processes with tutors (see 7.7).

The introduction to the course is concluded with a discussion of various key features that underpin the course and support the course orientation and aims. As noted before some of these key features are '... very big ideas' and are sometimes absent from most of our prior educational experiences and participants in the course (both tutors and students) appear to continuously struggle with some of these ideas (Rhodes University Environmental Education Unit, Introductory Text, 1999:10; see also 6.2.3). Data presented in section 6.2.3 and 6.4.7 points to the need to better support these ideas and the way in which they come to shape course processes as these different orientations challenge and sometimes come into conflict with traditional educational practices. It is perhaps similarly important to consider critically how these course processes support participants in engaging with conflicting rationalities as this is a significant dimension of reflexive processes (see 6.2.2 & 6.4.7).

Drawing on the literature review of this study, a range of integrative elements of reflexive competence supporting an engagement within reflexive processes have emerged as introduced in section 3.7.2 and used in analyzing data in chapter six. These integrative elements of reflexive competence can be linked to the key features of the RU/GF course within which the reflexive intentions of the course are partially inscribed (see 3.7.2 & 5.3.3). For example, Popkewitz's (2001:4) emphasis on developing a historical perspective on how thought and action is shaped within socio-historical context to explore and open up possibilities for change, links with the idea of history and context through which '... we can develop a clearer picture of the environmental crisis, environmental education and education in general if we look at the history and broader social situations or context within which these have developed' (Rhodes University Environmental Education Unit, Introductory Text, 1999:10). A further example can be seen in a discussion of critical reflection the aim of which is described as to '... develop a better understanding of approaches to environmental education' that could be linked to Beck's (1999:11) idea of reflecting critically on the unconscious preconditions of knowledge and action to open up possibilities for renegotiating and re-establishing foundations and norms for engaging within knowledge frameworks. Critical reflection similarly links to Giddens (1976:107) thesis of reflexive processes aimed at uncovering the boundedness of consciousness three levels (unconscious, practical and discursive) intended to highlight intentions and purpose in thought and action. It might be useful to draw on the theoretical framework emerging from within this study to further clarify these key ideas in the course that are intended to support a reflexive engagement in environmental education processes. It might similarly be useful to

point participants to some of the specific course processes within which these ideas are given effect, for example, course materials that provide a framework for engaging with theoretical perspectives as alternative understandings and practices in environmental education are explored. A discussion of this nature might support both tutors and course participants in understanding more clearly the reflexive intention of the course and the key ideas informing the course and the course processes through which the reflexive orientation and aims are supported.

Clarifying the reflexive intention of the course might further be achieved through the development of a set of outcomes for the course that point participants towards exploring reflexive responses and foregrounds the notion of change (see above). For example, the introductory texts to the industry course, specifies ‘... a set of broad outcomes we have in mind [for] ... the course’ (Rhodes University Environmental Education Unit, Introductory Texts, 1998:1). These include, amongst others ‘... develop an environmental education and training course ... in line with the competency framework of the NQF’ and ‘... critically analyse environmental issues and risks in industry, business and local government’ (*ibid*). These reflect fairly broad outcomes of the course aimed at retaining an open-ended framework to learning and not constraining learning to overly specified outcomes that might contradict Beck’s (1999:124) emphasis on non-linear processes to enable reflexivity (see 4.3.1, 4.3.2 & 4.5). A similar approach might be used in developing outcomes for the general course. Table 7.1 suggests some examples of possible course outcomes that may highlight the reflexive orientation of the course and foreground the notion of change. To locate each of the course themes in the context of exploring possibilities for change, it might similarly be useful to define theme specific outcomes that guide participants’ engagement within that particular theme (see 5.4.4). I draw on theme two in suggesting possible ways of framing these theme specific outcomes, to be possibly included in the introductory text and the introduction to the specific theme (see table 7.2).

In the industry course, the set of ‘... broad outcomes ... in mind’ (see above) were used by participants to develop assessment criteria and range statements to guide the development of assignments (see 5.4.5). Once assignments were developed in first draft, participants were provided with the opportunity of revisiting the outcomes and assessment criteria and to renegotiate these in light of their developing perspectives around environmental issues, risks and responses. In the industry context, the intention with this approach to defining ‘outcomes in mind’ and encouraging participants to draw on these in framing their learning in the course and to renegotiate these learning frameworks in an ongoing way through the course was an attempt to provide a measure of structure in the course, however also allowing for open-ended reflexive learning processes that allows room for the exploration of not only knowledge but also not yet

knowledge (unawareness). A similar approach to working with outcomes in mind might be useful in the context of the general course that allows for an exploration of new and different ways of thinking and doing in relation to environmental issues and risks and so allows space for the acknowledgement and processes of unawareness as a central feature within reflexive learning processes (see 5.2).

The course has a set of broad outcomes in mind. Through participation in the course you should be able to:

- Critically analyse environmental issues and their associated risks in your professional context.
- Recognise some of the socio-historical factors out of which these issues and risks emerge.
- Critically reflect on some of the challenges and constraints that limit effective responses to these issues and risks in context.
- Develop or redevelop a course, programme or resource material that responds to the unpredictable and uncertain character of environmental issues and risks in your context.
- In developing the course, programme or resource material, consider methods and approaches that address the challenges and constraints identified.

Table 7.1 Recommended examples of possible course outcomes.

At the end of this theme you should be able to:

- Critically reflect on the current aims, objectives or outcomes guiding your environmental education project / programme.
- Describe how and *why* these aims and objectives were developed.
- Discuss critically how these aims and objectives shape your current practice.
- Consider some of the strengths and weaknesses of these aims and objectives in enabling effective responses to environmental issues and risks in context.
- Drawing on the international principles contained in the core texts, consider some revised aims and objectives that might enable more effective ways of responding to environmental issues and risks in context.

Table 7.2 Possible examples of theme specific outcomes for theme two (2).

The above discussion makes various suggestions and recommendations that might come to better support the reflexive orientation and aims of the course. It suggests a clearer articulation of the reflexive intention of the course as supporting processes through which dominant constructions of environmental issues and risks and educational responses are challenged as possibilities are explored for other ways of knowing about and responding to environmental issues and risks. It further suggests providing in this introduction greater emphasis on processes of change and challenging dominant conceptions of change (that might reflect a focus on the resolving of practical issues in specific institutional contexts) and further suggests drawing on Popkewitz and Brennan's (1998:14) conception of change as '... ruptures and

breaks' in dominant forms of reason and principles of ordering in providing opportunities for participants to reflect critically on the orientations to change reflected in thinking and action. It is further recommended through this section that course processes be introduced and revisited throughout the course in relation to the reflexive intention of the course. A recommendation is made for drawing on the theoretical perspectives emerging from this research in clarifying the key ideas informing the course and supporting a reflexive exploration of environmental education processes beyond conceptions confined within dominant knowledge frameworks. Lastly, recommendations made include the development of course specific and theme specific outcomes to provide a clearer learning framework within which to explore reflexively options for change, though encouraging the use of these outcomes in an open-ended framework that allows for the ongoing renegotiation of this learning framework.

7.3 ASSIGNMENTS SUPPORTED BY COURSE MATERIALS

In foregrounding the notion of unawareness in reflexive processes, Beck (1999:109) draws our attention to the critical need to explore not only the knowledge frameworks within which environmental issues and risks are constructed, but to similarly explore the resultant social positions that emerge in the context of risk generation, communication and management. Critical questions to ask are not only what about environmental issues and risks, but similarly, who knows what and why / why not. Beck (2000:101) suggests that a consideration of risks without considering the socio-historical context within which these have originated and are dealt with reflect a naïve engagement with risks. Risks emerge out of particular social institutions, are dealt with within particular social conditions and give rise to particular social relationships (see 2.6). In this sense, Beck (2000:101) notes that '... it is not only the cows, but ruling parties, officials, meat markets, consumers and so on, who become mad' (referring to the risks associated with contemporary practices associated with meat production, which recently manifested in 'mad cow disease' in a number of countries around the world). Engaging with responses to environmental risks means developing a critical understanding of the social institutions within which these have emerged. Responses to risks, which do not attempt to challenge the social formations underpinning these risks are potentially less effective in dealing with root and underlying causes of these risks. In this sense, Delanty (1999:154) argues that the ecological movement moves beyond the environment to a social movement encompassing the '... social, economic and political organisation of society'. As such, environmental education emerges as social processes of change attending to the social institutions out of which risks originate and processes through which they are managed (Beck, 2000:101; Janse van Rensburg, 1994:14; see also 2.6 & 5.2). In this sense an epistemological framing of reflexivity becomes significant in challenging forms of reasoning that create and sustain socio-ecological inequity and links to a social epistemology that brings into focus the effects of knowledge on

what is ‘... seen, felt, thought and talked about as the possibilities of action, participation and reflection’ are explored (Popkewitz, 1999:35; see also 4.6.3).

Section 5.4.1 introduces assignments as the focal point in the course around which learning is structured. Through the work of the various assignments in the course, participants are encouraged to explore critically understandings of environmental issues in context and the processes through which responses to these issues are constructed (see 5.4.1; see also appendix 14 & 15). Relative to the emerging theoretical framework of this study and participants engagement within reflexive processes, various issues emerge within the process of developing assignments and exploring critically understandings and processes through which to respond to environmental issues and risks in context. These include:

➤ **The need to foreground the notion of risks**

Beck's (1992, 1999) thesis of reflexive modernisation foregrounds the notion of risks and unintended consequences of thought and action in responding to environmental degradation emerging out of modernist foundations, systems and processes (see 1.5.1 & 5.2). In this sense, Beck (2000:100) notes that ‘... risks in which people believe’ is the whip driving current thought and action. The greater the threat of risks the more prompted we are to disrupt the processes out of which they emerge. Assignment one in the course is the space that allows participants to critically explore constructions of environmental issues as they emerge in context. This assignment currently requires participants to ‘... choose one or two key environmental issues that concern [them] or to which [their] environmental education project or organisation is responding’ (see appendix 14.1; see also 5.4.1 & table 7.4). Participants are further required in this assignment to ‘... analyse the environmental issue/s in terms of: its nature (... describe the issue), its effects, and the underlying causes of the issue/s’ (*ibid*). The current assignment brief emphasises environmental issues and less attention is drawn to the notion of risks. Section 6.3.1 highlights some of the challenges that participants encountered through the work of assignment one, with less of an emphasis on the impacts of environmental issues emerging from these assignments. Less emphasis on the notion of risk in the assignment brief might account for some of these issues emerging and this might highlight the need to foreground the notion of risks in the assignment brief to a greater extent and so encourage a futures perspective on unintended consequences of environmental issues and risks.

Core text one, in support of developing this first assignment, introduces participants to the complex and interrelated nature of environmental issues and risks (see 5.4.4). It encourages participants to consider environmental issues in the context of the socio-

economic and political contexts within which they originate (Rhodes University Environmental Education Unit, Core Text One, 1999:4). For many participants this is significant in terms of developing broader perceptions of environmental issues (see 6.3.1). Similar to the assignment brief the core text of this theme appears to focus primarily on the complex and interrelated nature of environmental issues and the notion of *risks* are addressed to a lesser extent. Certain readings contained in the course materials expose participants to examples of some of the consequences and risks associated with environmental issues. For example, Ekins (1992:16-17) describes the cause and effect of modern materially-based lifestyles, as ‘... the appropriation by the rich of developing countries leaves less and less for the indigenous poor, who are forced into the forests or onto marginal or fragile soils that simply cannot support them’. Beck’s (1992) thesis of reflexive modernisation explores in some depth the nature of modern day risks, for example, the inability to contain these within specific national boundaries and time frames and the emergence of differential social risk positions as these risks emerge, are communicated and managed (see 2.6 & 5.2). It might be useful to draw on some of these perspectives in strengthening support for participants to explore the risks associated with environmental issues in more depth.

➤ **The need to support the exploration of environmental issues and risks in socio-historical contexts**

Popkewitz & Brennan (1998:8) recognise the ‘... the constitutive role of knowledge in the construction of social life’ and through a social epistemological approach argue that in focusing on the socio-historical context out of which thought and action emerge, allows one deeper insight into the way in which knowledge frameworks and the power relations embedded in these come to be constructed. They (1998:28) argue that through placing forms of reasoning and associated principles of ordering in a historical and potentially contingent position that opens them up to critique creates a broader range of possibilities for alternative thought and action. Various themes in the course support participants in reflecting critically on processes through which thought and action has been shaped and exploring alternative conceptions of environmental issues and responses. For example, core text one encourages participants to explore the social, political and economic institutions within which environmental issues and risks are produced and managed (see 2.6, 5.3.3 & 5.4.4). Some of the ideas included here are ‘... high economic growth has led to increased consumption which makes demands on our natural resources’ (Rhodes University Environmental Education Unit, Core Text One, 1999:4). Another explores the beliefs and values that underpin progress through economic growth, such as ‘... modernism ... scientism ... technicism ... materialism ... [and] individualism’ (*ibid*:6). Here participants

are encouraged to consider critically the '... unquestioning belief ... in the idea of progress' and how this belief in progress and modernisation '... shapes practices of development ... , the rapid expansion of science and technology ..., economic growth and pursuit of material wealth ... for individuals', with little consideration for the socio-ecological consequences of these practices (*ibid*). These examples illustrate some of the opportunities provided for participants to explore reflexive responses that address the root and underlying causes of environmental issues and risks (see above), an attempt to destabilise forms of reasoning that come to dictate particular principles of ordering and opens up potential for alternatives (Popkewitz & Brennan, 1998:28, see 4.6.3). Data presented in chapter six reflect that all participants begin to identify the social foundations, systems and processes out of which environmental issues and risks emerge (see 6.3.1). In other examples, assignments two and three provide opportunities for participants to attempt to understand 'forms of reasoning' and 'principles of ordering' inherent in current practices (Popkewitz & Brennan, 1998:28). Assignment two, for example, encourages participants to reflect on the aims and objectives of an environmental education project / programme in context and to consider '... how and why these ... were developed' (see appendix 14.2). Participants are further encouraged to reflect and comment on '... how these changes in thinking may have (or may still) influence the aims, objectives and principles that guide [their] work in environmental education' (*ibid*). In this sense, the assignment appears to encourage '... historicizing the conceptions of actors and reason through which practice and purpose is constructed' (Popkewitz & Brennan, 1998:11). Assignment three further provides opportunities for an epistemological challenge to practice in encouraging participants to reflect on '... how and why [they] use ... particular methods and processes' in their professional context, in relation to '... changes in educational ideas (or theories), trends in education, development and evaluation [and] trends in environmental education' (see appendix 14.3). Data presented in chapter six shows that all participants begin to engage in an exploration of the socio-historical contexts that shape environmental issues, risks and responses (see 6.3.2, 6.3.3 & 6.3.4). Various tensions however begin to emerge as participants engage with this exploration of thought and action in context, for example, the central role of knowledge in proposed environmental education processes, proposed teaching and learning processes that reflect some behaviourist trends and patterns and the assumed roles and identities in knowledge processes (see 6.4.7). These tensions point to the need to better support participants in a critical exploration of thought and action in a socio-historical context and exploring options for change beyond the limitations that they recognise in traditional approaches to teaching and learning. The emergence of conflicting rationalities and tensions are central within reflexive processes. It is out of these conflicting rationalities that dominant knowledge forms and social positions are challenged and opened up to change. Some suggestions are made for a reorientation of assignment work to better support participants in drawing on insights

emerging through processes of critically exploring socio-historical factors that shape thought and action (see below). These suggestions for the reorientation of assignments also attempt to engage the potential of emerging conflicting rationalities as participants explore options for reorienting approaches to environmental issues and risks in context.

➤ **The need to support more closely an exploration of ‘why’**

A social epistemology foregrounds an exploration of ‘why’ we think about and respond to environmental issues and risks in the way that we do (Popkewitz & Brennan, 1998:24). Various aspects in assignment work reflect opportunities through which participants are encouraged to explore why practice has been shaped in a particular way (see above). Data presented in chapter six however reflects that for many participants there is a greater emphasis on describing what they do in context than on why they do things the way they do (see 6.3.2, 6.3.3, 6.3.4 & 6.4.7). A possible reason for this emphasis on what might be the way in which assignments are presented, focusing initially on descriptions of practice, with opportunities for exploring ‘why’ possibly becoming subsumed in the detail contained in assignments (see appendix 12 & 13). Another potential reason could be the discomfort that might arise amongst participants as conflicting rationalities begin to emerge out of questioning what constitutes practice and how these practices come to be. In this regard it might be useful to attempt to limit descriptions of practice and try to foreground an exploration of why practice is constructed in particular ways, which might be possible through a reorientation of assignments as recommended below.

➤ **The need to foreground change**

As discussed in section 7.2, a social epistemological approach foregrounds the notion of change as processes of challenging and changing differential social relations that emerge out of an engagement within knowledge frameworks. Similar to the need to emphasise the reflexive learning intent of the course in the context of exploring options for change, the need similarly arises in the assignments to support a more conscious exploration of options for change. Assignments are introduced in the introductory texts to the course materials as ‘... structured to help you ... develop a better understanding of educational theory in relation to your practice ... develop a critical understanding of your practice in environmental education’ (Rhodes University Environmental Education Unit, Introductory Texts, 1999:4). This introduction further emphasises the intention ‘... to improve your practice’. As noted before an improvement in practice might be conceived of as addressing practical issues confined within specific professional contexts and so challenge the intention of environmental education as processes of social change (see 2.6, 6.4.7 & 7.2). It might be

necessary in these introductory texts to link assignments within the reflexive intention of the course, supporting a challenge to dominant knowledge frameworks within which environmental issues, risks and responses are constructed and the way in which social positions are constructed within these dominant knowledge frameworks. This might be done for example, through emphasising the process of developing assignments as an exploration of factors within dominant knowledge frameworks and embedded social relations that constrain and inter change, so as to illuminate these constraints and open up possibilities for new and different ways of engaging with environmental issues and risks. This might move an engagement with assignments closer towards a social epistemological approach in exploring opportunities for change that challenge dominant forms of reason and principles of ordering (Popkewitz & Brennan, 1998:24).

Delanty (1999:154) notes that ‘... risk induces reflexivity’ since in considering the nature and scope of modern day risks and processes through which they are managed ‘... there are no absolute or self evident answers, only discursive outcomes’. At the start of the course participants are introduced to assignment work as a set of building blocks, through which to explore improved approaches to environmental education, supported by various course processes and in the company of critical others. Chapter six introduces the idea of reflexivity as the *ongoing action and interaction* within a range of course processes (including processes of interacting with texts, practice and other course participants) that supports the discursive exploration of educational processes that respond to environmental issues *and associated risks*. To strengthen the reflexive orientation to assignment work it might be useful to explicitly present assignments as an ongoing process of exploring critically the socio-historical contexts within which environmental issues and risks and responses to these have been constructed, culminating in the work of assignment four that challenges constraints and limitations to social change. Currently the steps used in the diagrammatic representation of assignments in the course might signify the end of the course and possibly the end of explorations of more effective responses to contextual environmental issues and risks (see 5.4.4). It might be useful to develop a diagrammatic representation that highlights reflexive agency emerging out of social context, supported through learning in the course and continuing beyond the scope of the course (see 6.2). The introductory texts might similarly include a discussion of the longer-term and integrated nature of engagement within reflexive processes and developing reflexive competence.

In further responding to issues emerging out of assignment work, the following suggestions are made for a reorientation of all assignments in the course, to support the epistemological framing of reflexivity.

The pre-course assignment encourages participants to clarify current approaches in environmental education in relation to the environmental issues and risks to which they are attempting to respond and to articulate their visions for environmental education in their professional contexts (see 5.4.1). This pre-course assignment is however, rarely used in the course other than as a way of introducing participants and their work contexts to course coordinators, tutors and fellow participants. The pre-course assignment offers a significant opportunity for participants to begin reflecting on constructions of environmental issues and risks, processes through which these issues and risks are being responded to and some of the constraints and challenges confronting them in context as they attempt to respond educationally to these environmental issues and risks. This might begin to locate the pre-course assignment more firmly within the reflexive orientation of the course. Participants could for example, be encouraged to describe the issues and risks that confront them in context, with a clearer framing of the notion of risks. Participants might then be requested to provide a fairly detailed description of the methods and processes that they use in context to respond educationally to the issues and risks in context. Given the greater emphasis on describing what they do in practice, this detailed description might limit the need for further detail in subsequent assignments, so clearing some 'space' for engaging conflicting rationalities in these assignments (see below). Participants might then further be requested to begin to identify some of the constraints that confront them in responding effectively to contextual environmental issues and risks. Rather than being referred to as a pre-course assignment, this assignment could be seen as assignment one and in this way could come to be seen as part of the process of reflexive exploration of new and different ways of thinking about and responding to environmental issues and risks. In introducing assignments in the introductory texts, the pre-course assignment could be included in the diagrammatic representation thus bringing this assignment into the context of reflexive learning in the course (and thus more into focus). Participants could further be encouraged to use this assignment in relation to other assignments. For example, in relation to assignment three, participants could draw on these descriptions in reflecting on the trends and patterns inherent in practice and the assumptions on which practice is based (see below). Participants could similarly, for example, draw on the challenges and constraints that have been identified through this assignment in exploring new and different approaches to environmental education that challenge the constraints noted, for example through the work of assignment four. This reorientation of the pre-course assignment might thus change the role of the pre-course assignment, from being a medium of introducing participants and their work context to being more seriously considered in the context of learning in the course. At the first workshop, participants meet in regional tutorial groups and using the pre-course assignment introduce themselves and their work context to fellow participants (see 5.4.2). This session at the first workshop might be extended to encourage participants to share constraints and challenges as a way of beginning deliberations with others to explore

possibilities for change beyond the constraints and challenges noted. The first tutorial in many regional tutorial groups focuses on core text one and assignment one in the course. It might be useful for the pre-course assignment to be used in these first tutorials to explore conceptions of environmental issues and risks, relative to core texts and so this assignment is brought into increased focus in learning in the course and supports the praxiological intent of the course. Table 7.3 suggests some questions around which this first assignment (currently the pre-course assignment) might be framed.

<i>Assignment I</i> • What are some of the environmental issues and risks that you and / or your organization is attempting to respond to? Describe these issues and risks briefly. • Describe fully the environmental education methods and processes used in your context that attempt to respond to these issues and risks. • What are some of the challenges and constraints that you encounter within these methods and processes in response to these issues and risks? • Describe briefly why you consider these challenges and constraints to your programme. • What are some of the ways in which you could possibly overcome these challenges and constraints

Table 7.3 Recommendations of some questions around which to frame the pre-course assignment. Note the numbering of this to assignment one. All subsequent accounts assignments will be referred to in reference to this renumbering.

Drawing on Beck's (1999:109) conception of reflexivity being integrally tied up with the unintended consequences of thought and action, the following recommendations are made for a reorientation of assignment one. I firstly suggest the explicit use of the term risk that might bring into clearer view the longer-term, invisible consequences of current thought and action and so highlight the notion of unawareness. To further support participants in exploring the risks associated with environmental issues, in more depth, I recommend that assignment one encourages participants to undertake an audit in context through which they explore in more detail environmental issues and risks *in the company of others*. Delanty (1999:156) notes that it has been widely recognised that environmental issues and risks confronting society '... cannot be dealt with by recourse to individual responsibility' and requires the collective exploration of responses to the wide range of complex socio-ecological issues. This collective approach is likely to challenge individualistic conceptions of agency that emerges within Gidden's (1979) theory of reflexive agency and opens up possibilities for enlarged groups and communities competing for knowledge about environmental issues, risks and responses (Beck, 1999:120). In this sense the exploration of responses to environmental issues and risks '... would give greater place to the role of public communication' (Delanty, 1999:178).

Current assignment	Suggested reorientation of the assignment
Assignment I Choose one or two key environmental issue/s that concern you or to which your environmental education project or organisation is responding. Analyse the environmental issue/s in terms of: - its nature (i.e. describe the issue), - its effects, and - the underlying causes of the issue/s.	Assignment II <i>Part 1 (Environmental audit)</i> <i>Conduct an environmental audit in collaboration, and through deliberations, with other individuals in your professional context to identify a key environmental issue and associated risks. Use the guidelines on environmental auditing contained in the course materials to guide you in conducting the environmental audit. Note however that these audit sheets are guidelines and you might want to redevelop these as required in your context and in exploring the issue that you have identified.</i> <i>Part 2 (Written assignment)</i> <i>Drawing on the results of the audit, analyse the environmental issue or risks in terms of:</i> - Its nature (i.e. <i>briefly</i> describe the issue), - The underlying causes of the issue/s. - The risks associated with this issue/s (<i>consider here some of the visible and non-visible impacts of the issue, and some of the short-term and long-term impacts</i>) <i>Part 3 (Written assignment)</i> a) <i>Considering the nature, causes and risks associated with the issue discussed in part 2, and drawing on the challenges and constraints discussed in assignment 1, briefly describe an environmental education course, programme or resource material which you have in mind for assignment V.</i> b) <i>Briefly describe how you see this course, programme or resource material responding to the environmental issue and associated risks discussed in part 2 and the constraints and challenges raised in assignment I.</i>

Table 7.4 Recommendations for the reorientation of assignment one – note the renumbering to assignment two, in light of the pre-course assignment being renumbered one¹⁹.

Table 7.4 suggests the identification of a single environmental issue in context and a brief description of the nature of this issue. This focus on a single environmental issue and brief description is intended to minimise long-winded discussions about environmental issues that might detract from a thorough exploration of the risks associated with this issue, as emerged amongst some participants in the research (see 6.3.1). As in the current assignment, participants should be encouraged to consider and discuss the causes of the issue identified. This reorientation further suggests the inclusion of an environmental audit to support the exploration of the nature, causes and risks associated with an environmental issue in context.

¹⁹ Italics used in the table denotes suggested areas of change as opposed to what currently exists in the assignments, reflected in the use of normal font.

This inclusion of the audit in assignment one might have to be supported through the inclusion an 'audit pack' in the course materials that might guide participants in their explorations of understandings of environmental issues and risks in context. In the context of supporting open-ended learning processes, I would recommend that the audit pack provide a framework within which to support participants in undertaking the audit and be sufficiently flexible to allow for emerging frameworks and processes for exploring environmental issues and risks in context. In the context of developing responses to environmental issues and risks, Beck (2000:100) notes that it is no longer the past that determines current experience and action, but '... the future – something non-existent, constructed or fictitious' that takes it place. A further recommendation reflected in table 7.4 is to encourage participants to start engaging with proposals for current action, drawing on the futures perspective brought into the assignment through a stronger focus on risks associated with environmental issues.

As noted before, current assignments two and three support participants, to some extent, in exploring the socio-historical factors out of which responses to environmental issues and risks have emerged in context (see 5.4.1 & 6.3.2). As noted before, data reflects a strong emphasis on descriptions of environmental education programmes with discussions of the factors shaping approaches to environmental education being subsumed by the detail of descriptions (see 6.3.2, 6.3.4 & 6.4.7). Suggestions made for a reorientation of the pre-course assignment, attempts to address this overemphasis on descriptive detail of environmental education processes in these two assignments. It is further recommended that these two assignments focus participants on exploring how and why practice has been shaped and identifying factors that constrain and inter possibilities for change in these approaches to effectively responding to environmental issues and risks. This reorientation seeks to link these two assignments closer within an epistemological framing of reflexive processes. To further strengthen reflexive explorations to illuminate options for change, the reorientation suggested in table 7.5 (current assignment two) and table 7.6 (current assignment three) suggests a stronger focus on engaging conflicting rationalities within which options could be explored and developing environmental education processes in response to some of the emerging constraints and challenges.

Table 7.5 suggests a reorientation of the current assignment two, to focus participants more closely on the aims and objectives that guide their work in environmental education. To support the reflection on socio-historical factors that have shaped practice, this reorientation suggests that participants be encouraged to explore critically how and why the aims and objectives of their programmes were developed and to comment critically on how these aims and objectives support (or possibly inhibit) effective responses to environmental issues and risks identified. This is an attempt to support participants in understanding how and why their practice has come

to be shaped in particular ways. This recommendation for a reorientation of assignment two further suggests that participants reflect on the effectiveness of their programmes, consider a possible reorientation of the aims and objectives in their programme and motivate for possible changes to their programme in the context of responding to environmental issues and risks identified.

Current assignment	Suggested reorientation of the assignment
Assignment II Briefly describe any EE project or programme of your choice (preferably your current work). Briefly describe what issues/s you are responding to in this project / programme (you can link this to assignment I). Outline any aims and objectives of the EE project or programme. Describe how and why these aims and objectives were developed. Describe key principles which guide the project or programme. Try to make use of some of the international principles of EE and describe how they may be relevant to your project or programme. Use examples of your project or programme (where relevant). In Theme II we described how changes in thinking over time have influenced the development of aims, objectives and principles of EE. Comment on how these changes in thinking may have (or may still) influence aims, objectives or principles of your programme or project.	Assignment III Part 1 <i>Drawing on the descriptions of your programme outlined in assignment I, outline briefly the aims and objectives of your programme. Describe how and WHY these aims and objectives were developed. Comment critically on these aims and objectives in supporting (or possibly inhibiting) effective responses to the environmental issues and risks that you have identified through the work of assignment II.</i> Part 2 In Theme II we described how changes in thinking over time have influenced the development of aims, objectives and principles in EE. Comment on how these changes in thinking may have influenced aims, objectives or principles of your programme or project. Part 3 <i>Drawing on these changes in thinking over time and the proposals for environmental education programmes discussed in assignment II, what are some of the aims, objectives and principles in your programme that require a reorientation to support your programme in responding more effectively to the environmental issues and risks that you have identified in assignment II. Motivate your comments, drawing on some aims, objectives and principles explored in theme II.</i>

Table 7.5 The suggested reorientation of the current assignment two

In the context of structuration theory, Giddens (1990:36) argues that through reflexive agency ‘... social practices are constantly examined and reformed in the light of incoming information about those very practices, thus constitutively altering their character’. Theme three in the course supports participants in understanding the assumptions and unconscious preconditions that shape practice, the intention of which is to support participants to explore alternative approaches to environmental education. Delanty (1999:162) notes that reflexive agency amongst individuals is possible to the extent that ‘... they can transcend their concrete conditions’. This view appears to emphasise the notion of change inherent in reflexive

processes and the reorientation of the current assignment three, as reflected in table 7.6, attempts to focus participants more clearly on exploring options for change that are recognised through an exploration of the socio-historical factors that confine or inter possibilities for change. Assignment three is a fairly significant assignment in supporting participants to challenge the dominant knowledge frameworks within which environmental issues and risks are constructed, communicated and managed and provides a framework within which to challenge the construction of social life through interactions within knowledge frameworks. Similar to assignment two, the suggested reorientation of this assignment intends to focus participants on the socio-historical factors shaping current practice, with the intention of illuminating constraints to change and further encouraging participants to work with emerging conflicting rationalities into assignment four.

Current assignment	Suggested reorientation of the assignment
Assignment III Part 1 (written assignment) Briefly describe your own environmental education project or programme (see assignment 1 or 2). Give a detailed description of the different environmental education processes and methods which you use in the project or programme. Use real life examples to explain what you do. Explain <u>how</u> and <u>why</u> you use these particular methods and processes with reference to the following: • changes in educational ideas (or theories) • trends in education, development and evaluation • trends in environmental education	Assignment IV Part 1 (written assignment) Drawing on the description of your EE programme or project offered in assignment I, ... 1. Give a <i>brief</i> description of the different environmental education methods and processes that you use in the project or programme (use real life examples to explain what you do). 2. <i>Reflect <u>critically</u> on <u>how</u> and <u>why</u> you use these particular methods and processes, drawing on the educational theories introduced in core text III.</i> 3. <i>Can you recognise in these methods and processes any constraints to effectively responding to environmental issues and risks that you explored in assignment II and in light of your developing understanding of environmental education processes explored in theme II. What are some of these constraints. Motivate these, drawing on discussions in (2).</i> 4. <i>Can you recognise any constraints in your work context to engaging with different approaches to environmental education processes.</i> 5. <i>Consider and discuss some ways in which you can attempt to overcome these constraints in your work context.</i>

Table 7.6 Suggested reorientation for the current assignment three

To encourage a process orientation to engaging in an ongoing and reflexive way within conflicting rationalities and to further encourage drawing on former assignments to inform the proposals developed towards processes of change, recommendations are made for the reorientation of the final assignment in Table 7.7. Section 6.4.7 highlights some tensions that emerge between participants' critique of behaviourist orientations in practice and the proposals

developed, at times reflecting similar trends and patterns. This reorientation intends to encourage participants to draw on insights developed through engaging within processes of conflicting rationalities in developing proposals that transcend contextual factors that limit and inter possibilities for change. To support processes of ongoing reflexivity beyond the scope of the course, this recommended reorientation emphasises an ongoing exploration of *why* things are done in a particular way and how things come to be.

Current assignment	Suggested reorientation of the assignment
Assignment IV Part 1 Develop or re-develop an environmental education programme or material resource. Part 2 1. Describe the programme / resource (for example, what does it look like; what is the content). Include here the aim or purpose of the programme / resource. 2. Describe the development of the programme or resource (to help you with this you should keep a journal or diary of happenings during the development of the resource – you will not be able to write about and reflect on the development process (over time) without such a record). This journal or diary should be submitted to your tutor together with your file at the end of the course. 3. Justify, or explain why the programme/resource was developed in this way. (This should deal with the process of developing the resource/programme. This should include a description of how the resource/programme development process is reflective of educational ideas and trends in environmental education and trends or concepts in curriculum, materials and programme development. The description should also reflect how evaluation is dealt with in the developmental process). 4. Justify or explain why the programme/ resource has its particular form and content (this section should deal with the 'finished' resource or the 'product'). 5. How will the programme or resource be used? 6. Comment on the five points above. In other words, in light of your experience, and learning on the course, what are your views on the programme / resource (the 'finished product) and how it was developed (the 'process'. This comment may include your views on how you would do it differently next time.	Assignment V Part 1 Develop or re-develop an environmental education programme or material resource. Part 2 1. Describe <i>briefly</i> the programme / resource. <i>Clarify (briefly)</i> the aims or purpose and objectives of the programme / resource and describe how it will be used. Draw here on the work of assignment II. 2. <i>Consider the environmental issues and risks explored in assignment II and discuss how you see this programme / resource responding to these.</i> 3. <i>Consider some of the constraints inherent in your current practices discussed in assignment IV, and draw on the challenges you introduced in assignment 1, and briefly describe how the programme / resource supports you to overcome some of these constraints and challenges.</i> Part 3 1. Describe <i>briefly</i> the development of the programme / resource. 2. Explain why the programme / resource was developed in this way. (This should include a description of how the resource/programme development process is reflective of educational ideas and trends in environmental education and trends or concepts in curriculum, materials and programme development. The description should also reflect how evaluation is dealt with in the developmental process). 3. Comment critically on the development of the programme / resource, <i>drawing on discussions above and focusing on how you could do it differently the next time.</i>

Table 7.7 Recommendations for the reorientation of the current assignment four

In his thesis of a 'risk society', Beck (1992:23) foregrounds the significance of knowledge (scientific and non-scientific) in defining and managing risks (see 2.6 & 5.2). In this context of risks, Beck (1992:23) similarly notes the political significance of dominant knowledge

frameworks in defining and maintaining particular social conditions (see 2.5 & 2.6). In this sense, Beck (1992:30) argues that ‘... scientific and social rationality ... [are] interwoven and interdependent’. In the same sense, Popkewitz (1999:24) argues that scientific rationality ‘... has become the core cognitive structure for defining and solving problems’. Within processes of reflexive modernisation however, a different kind of politics is coming to prevail, one that opens up knowledge to new definitions (Delanty, 1999:154; see also 1.5.4). In this sense, Delanty (1999:154) notes that ‘... the self-legitimation of knowledge has collapsed’. Engaging reflexively with risks requires the continuous problematising of ‘... the stories we are told and those we tell’ (Popkewitz & Brennan, 1998:27). Thus in recognising the social construction of risks it would seem that there is a need to continuously question what is known about environmental issues and associated risks, what is not known about them and how and why knowledge of these risks has been constructed (see 2.6). In the context of this reflexive exploration of what about environmental issues, risks and responses and how and why thinking and action is constructed relative to them, the discussion above draws on the data emerging and discussed in chapter six to highlight some of the issues emerging within processes of developing assignments around which learning in the course is constructed. To better support participants in critically exploring the knowledge frameworks and social actions and interactions out of which constructions of environmental issues, risks and responses emerge, various recommendations have been made for a reorientation of assignment work. The reorientation suggested above attempts to focus participants more clearly on processes of exploring options for change in the way in which they think about and respond to environmental issues and risks in their context. This reorientation attempts to support participants in ‘... the deliberate acknowledgement of outside perspectives and rationalities ... and the explicit working out and processing of unawareness’ that Beck (1999:131) sees as critical in developing reflexive responses to the increasing scale of environmental degradation.

7.4 THE ROLE OF THEORY

A central thesis emerging from a social epistemology is the notion of change as breaks and ruptures that disrupts and attempts at changing ‘... epistemological constructions of knowledge and reason’ (Popkewitz, 1999:29; see also 4.6.3). Linked to this conception of change, Usher *et al* (1997:138) argue that formal theories are socially constructed and play the role of regulating practices. Section 6.3.4 & 6.4.7 highlights some of the tensions emerging as participants engage within theoretical perspectives in the course that might be linked to the history of domination and the strong influence of fundamental pedagogics in South African education that underpinned educational processes in the apartheid regime. Some of the tensions emerging within this context include for example, the central role of knowledge and theoretical perspectives in learning processes, assumed social roles and identities in teaching

and learning processes and the issue of adopting 'labels' with which to describe practice as discussed in sections 6.3.4 and 6.4.7. As noted by one of the course participants, traditionally knowledge is offered as the one universal truth, not to be questioned or challenged (DF10, C2; see also 6.3.4 & 6.4.7). In the context of exploring options for change Popkewitz and Brennan (1998:11) argue for seeing theory as an epistemological problem, which is one way to '... consider the politics of knowledge and the politics of change'. Given the socio-historical context out of which participants derive their interactions within knowledge frameworks and the changed orientation to engaging within theoretical perspectives offered through the course and central within reflexive processes, it might be necessary to reflect critically on the use of and by implication, the role of theoretical perspectives in the course and how this comes to shape reflexive learning processes.

Currently, the course materials are introduced in the introductory texts as being '... part of a conversation – a serious, lively, ongoing conversation about responding better to the environmental crisis' (Rhodes University Environmental Education Unit, Introductory Texts, 1999:10). The course materials are further described as a '... way of drawing you into this conversation' (*ibid*). This introduction appears to reflect the intention of encouraging participants to draw on these theoretical perspectives and add their own voices to these as they explore more effective processes in responding to environmental issues and risks. This introduction however appears to require greater emphasis on encouraging participants to see these materials as '... thinking tools' or '... a sounding board', an analytical framework within which to engage in a critique of the conventions and 'norms' through which social life is constructed (Popkewitz & Brennan, 1998:11; Usher et al, 1997:138; see also 6.3.4). In this introduction it might similarly be useful to encourage participants to 'narrate' their practice, drawing on and critically reviewing theoretical ideas / concepts in relation to observations / experience in practice. It might similarly be useful to introduce the notion '... theory as an epistemological problem' that promotes a challenge to dominant forms of reason within which environmental issue and risks are constructed, communicated and managed and so provides an opening for problematising the conditions within which social life is constructed (Popkewitz & Brennan, 1998:11). As noted before, ideas introduced in the course through the introductory texts of the course materials and introduced to participants at the first workshop are 'big' ideas and might require a revisiting of these issues throughout the course. Examples of the need to revisit these ideas become evident in the support derived from discussions around issues of praxis for example, in the ECTG and the ITG (see 6.2.3). This points to the critical role of tutorial processes in problematising and challenging the traditional role and uses of theory in regulating social life (see also 7.7).

An issue emerging out of an analysis of interactions within theoretical perspectives in the course is the challenge that participants experience in connecting theory to practice in the reflexive exploration of methods and processes to respond to contextual environmental issues and risks (see 6.3.4 & 6.4.7). Usher *et al* (1997:118) writes that a focus on experience in learning provides opportunities for developing ‘... new and useful insights’ to be used to ‘... access, supplement, complement, critique and challenge knowledge’. However, a too narrow focus on experience could result in learners becoming ‘... *unreflexive* prisoners of their own experience’ (*ibid*, my emphasis). The introductory texts of the course materials introduce participants to the notion of praxis as ‘... interwoven and inseparable aspects of our work’ (Rhodes University Environmental Education Unit, Introductory Texts, 1999:11). This perspective is presented as one of the key orienting ideas informing the development of the core text. Given the tensions emerging between theory and practice in the course, it might be useful to include an explicit exploration of the intended role of theoretical perspectives in the course to encourage participants to problematise and interrogate practice and to recognise the situatedness of their experience within socio-historical contexts, through drawing on the theoretical perspectives introduced through the course as they reflexively explore options for change in practice.

Both suggestions made above focuses on a reorientation of the introductory texts to the course materials. It does however become critical to support these developing understandings that challenge traditional and dominant roles of knowledge and theory in teaching and learning processes. This research explored the role of theory in reflexive learning processes together with other course processes as a collective. Some insights were gained into participants’ interactions within theoretical perspectives. Similarly, within the research various insights were gained into tutorial processes that support participants to access and engage within theoretical perspectives and to link emerging understandings to exploring options for change in approaches to environmental issues and risks (see 6.2.3). As such, this research did not focus in much depth on how theory is used relative to reflexive learning processes and the implications this has for constraining or stimulating reflexive explorations. One issue that does however emerge is that there appears to be a tendency for participants to ‘adopt’ certain theoretical perspectives presented in the core texts (see 6.3.4 & 6.4.7). For example, most participants draw on the O’Donoghue model (1995:8) in exploring new and different constructions of environmental issues and risks in assignment one (see 6.3.1). Few participants draw on other key theoretical perspectives and frameworks available in this particular core text within which to explore reconstructions of environmental issues and risks (see 5.4.4, 6.3.4 & 7.3). Possible reasons for this might be that the O’Donoghue model is presented in the text in diagrammatic form and might be easier to access as an analytical framework. Another possible reason might be that this is the model that was used primarily in the introduction to core text one at the first national workshop (see 5.4.2). Similar trends

become evident in the exploration of assignment three, where certain 'popular' theories appear to emerge in different cases for example, a critique of behaviourist, top down approaches and the citing of socially constructivist and participatory approaches in proposals for change (see 6.3.4 & 6.4.7). Both of the potential reasons noted above point to the need to consider more carefully the presentation of theoretical perspectives and supporting participants in engaging within these as they reflexively explore options for change, the potential for the latter existing in tutorial group meetings.

In the course materials participants are often challenged through questions raised in the gutter of the core texts (see 5.4.4). It might be useful to consider these questions more carefully in the context of engaging conflicting rationalities as a central feature within reflexive processes and through these questions encourage the emergence of and interaction within processes of conflicting rationalities. It might similarly be useful to explore ways in which participants could be encouraged to interact with these questions, as they reflect an opportunity to engage participants in ongoing and reflexive deliberations around processes of education in response to environmental issues and risks in context. The latter suggestion highlights again the critical role of tutors and tutorial processes in supporting an engagement within theoretical perspectives in ways that are supportive of critical reflexive processes (see 7.7).

7.5 ASSESSMENT PROCESSES

Assessment processes are introduced to participants in the introductory texts to the course materials as being linked to certification, participation and personal and professional development reflected in '... in order to make the most of the course and in order to receive the Rhodes University Certificate in Environmental Education, you have to *participate and show evidence of personal and professional growth*' (Rhodes University Environmental Education Unit, Introductory Texts, 1999:3, original emphasis). As reflected in this introduction to assessment, emphasis is placed on participation and personal and professional development, evidence of which is reflected in the completion of '... a range of tasks and assignments' (*ibid*). Participation and personal and professional development is further clarified in the context of assessment processes highlighting '... full attendance ... contributions ... [and] working through assignments' (*ibid*:4). Data presented in section 6.2.3 reflects that for some participants certain aspects of assessment processes, for example, completion of more than two drafts of assignments and the negotiation of assessment criteria created a sense of discomfort. What might strengthen this introduction to assessment and encourage further engagement with these processes amongst participants is highlighting the significance of assessment as a *process of learning* that supports the ongoing and reflexive exploration of socio-historical factors that shape thought and action and through which new and different possibilities for practice are opened up

(see 5.4.5; 6.2.3 & above). Assessment as learning might be introduced as an ongoing conversation about practice in the context of recognising constraints to change and exploring options for change beyond the boundedness of individual consciousness and subsequent actions. This might clarify for participants the purpose and intentions of more than one draft of an assignment and encourage the use of this opportunity to continue to explore, *in the critical company of others*, conceptions of environmental issues, risks and responses.

In the context of the issue arising with respect to the negotiation of assessment criteria, it might be useful to highlight the significance of these processes in supporting the open-ended curriculum framework of the course and responsiveness to context (see 4.5.1 & 4.5.2). Discussions of this nature might support a challenge to linear learning processes within which thought and action around environmental issues and risks are bound and open up greater potential for engagement within non-linear learning processes that Beck (1999:119) recognises as critical in exploring alternative conceptions of environmental issue and risks and processes of response to these issues and risks.

As noted before, Beck (1999:131) argues that central within reflexive processes is the acknowledgement of, and the opening up to outside perspectives. Assignment work and interactions with theoretical perspectives through the course reflects one level of opening up to outside perspectives. Assessment processes as a process of learning becomes a further crucial process through which outside perspectives are explored and 'let in' on critical explorations of thought and action in environmental education. In the course, assessment is currently the responsibility of the regional tutor or tutors and in some cases peer assessment is encouraged (see 6.2.3). Increased peer assessment, together with tutor assessment becomes a significant process through which to 'open up' thinking and action to outside perspectives. Encouraging increased peer assessment might encourage participants to challenge the boundedness of thinking and action within spatial boundaries that create and perpetuate an unawareness of what goes on in other social environments (see 1.5.1). In considering the nature and scope of modern day risks and environmental education as social processes of change, increased peer assessment in course processes might similarly support participants in collaboratively exploring responses to environmental issues and risks.

As noted before, assessment is largely the responsibility of tutors in the course (see 5.4.5). At times tutors appear reluctant to engage rigorously within assessment processes. Since learning in the course draws on participants' experience into which tutors often have limited insight, tutors are sometimes reluctant to ask or encourage critical questions, raising the problematic of experience becoming '... foundational and authoritative' and resulting in failure to problematise experience (Usher *et al*, 1997:100). For many participants (tutors and students, alike) in the

course, 'rigour' appears to be perceived as coming into tension with the open and flexible learning framework of the course and as such is seen as a threat to learning (see 4.5.3, 5.4.5 & 6.2.3). Rigour in assessment, however, need not necessarily constrain learning, but should be seen in terms of supporting participants to explore unknown and unfamiliar approaches to environmental education beyond those to which they have traditionally been exposed and with which they are comfortable (see 6.3.4 & 6.4.7). An example of the significance of rigour in assessment is evident in one participants work where a clear progression is shown in the exploration of trends inherent in practice, supported through ongoing assessment comments through the development of three drafts of the assignment (see 6.2.4). Reflexive explorations often take participants into uncertain and uncharted territory. Rigour in assessment could be seen as supporting participants through this discomforting, doubtful, uncertain and unpredictable journey that characterises reflexive processes (Beck, 1999:124).

In the context of the hybrid nature of the South African NQF an integrated approach to assessment becomes particularly significant as one of the main mechanisms for avoiding performance-based orientations to assessment (see 4.3.1). In this sense, the Department of Education (2000:10) notes the significance of an integrated approach to assessment in focusing on the assessment of competence rather than on focusing on the ability to perform a discrete set of work-related tasks. Deacon and Parker (1999:67) describes an integrated approach to assessment as '... focussing on all three elements of the performance or outcome', these being the learner, the activity or practice and the outcome of the learning experience. In this sense, assessment can be seen as enabling the development of competence over time rather than judging learner deficits or non-accomplishment, the latter reflecting more of a performance orientation to assessment (see 4.3.1). As the RU/GF course seeks to enable change in practice, by encouraging an ongoing exploration of options for environmental education processes in context, integrated assessment becomes significant in supporting ongoing learning for change.

7.6 SUPPORTING THE DEVELOPMENT OF COLLECTIVE AGENCY

Delanty (1999:156) argues that environmental issues and risks that confront global society today cannot be dealt with through individual responses. Given the social foundations, systems and processes out of which risks emerge, Janse van Rensburg (1994:14) similarly notes that effective responses are '... less likely to flow from individuals learning about environmental issues in isolation' and requires '... communities to work together on a common agenda, engaging with local issues'. Collaborative processes that enable active responses to environmental issues and risks are introduced to participants in core text two through the analogy of building a house (Rhodes University Environmental Education Unit, Core Text Two,

1999:8). Responding to the environmental crisis is described as ‘... building a house against a storm’ that requires many hands, input from all the people in the house and drawing on advice from different experts’ (*ibid*). It might be useful to integrate into the introductory texts a discussion of the need for collaborative responses that respond to the social foundations, systems and processes out of which environmental issues and risks emerge as one of the key ideas underpinning the course. It might similarly be useful to draw on some of the ideas dispersed across the course materials to highlight the significance of environmental issues as collaborative processes of change (see 7.2).

One of the tensions emerging from a review of participants’ engagement in reflexive processes is the emphasis on the personal and individual context (see 6.4.7). This might point to the need to support participants in exploring environmental issues, risks and responses beyond conceptions bound within personal and individual experiences (see 1.5.1). Some suggestions have been made in section 7.3 for a reorientation of assignment work that might seek to encourage the uncovering of consciousness beyond specific social environments and beyond the unacknowledged consequences of thought and action (see 1.5.1). For example, suggestions are made for a reorientation of assignment one to include an audit that might encourage participants to move beyond individual, and closer towards collaborative explorations of constructions of environmental issues and risks and responses through environmental education processes.

Interactions and deliberations with others in the course are intended to encourage shared perspectives on responding to the complexities of environmental issues and risks in context (see 4.3.3 & 5.4.5). One of the research participants found, for example, the case studies contained in the industry course materials particularly useful in gaining insight into how individuals in other contexts have responded to environmental issues and risks (see 6.2.3). In this research many participants have similarly reflected the need for more exposure to processes through which others have responded to environmental issues and risks (see 6.3.4 & 6.4.6). Past research, similar to this research has also shown that participants appear to require encouragement and support to confront and challenge dominant orientations in context and to engage with the complexities of responding to environmental issues and risks (Jenkin, 2000:114; see also 6.2.2 & 6.4.7). In this sense, it might be useful to expose participants to some ‘practical’ ways in which others have responded to complex environmental issues and risks in context. This might be achieved through the development and inclusion of specific case studies, as in the case of the industry course that deals with practical responses to environmental issues and risks in an industry and business contexts. Many participants in the course develop various courses, programmes and resource materials that they are able to work with in context. In developing case studies for the general course it might be useful to draw on

some of these participants' experiences, highlighting contextual challenges and constraints and ways in which participants have worked within these towards change. For example, Connie Bothma, a Namibian participant in the 1996 course, at the time worked for the Rossing Foundation supporting the school-based activities of environmental clubs in Namibia (Janse van Rensburg & Le Roux, 1998:68). For her final course assignment Connie developed an environmental picture building game to support teachers and learners in exploring environmental issues and risks in a Namibian context (*ibid*). She had been introduced to the 'Environmental Picture Building Game' (Sharenet, 1995) at the first workshop of the course and adapted this resource for her specific work context in the Namibian coastal region (*ibid*). In developing the resource, '... Connie used a participatory approach of workshopping, trialling and testing the game with teachers, putting into practice a methodology she had learned about in the course' (*ibid*). A case study could, for example, be developed around Connie's process of developing and using the resource in her professional context, including critical reflections on the process of developing and using the resource to support environmental education in context. It might be useful, in the course materials to include case studies for each of the various professional contexts within which various participants in the course work (see 1.4 & 3.5.3.3). This approach might support participants to consider conceptions of environmental issues and risks outside their specific social environments and so break beyond the spatial binds that shape thought and action. This might similarly expose participants to a broader spectrum of rationalities (at times in conflict with each other) through which responses to environmental issues and risks are explored. This might further encourage participants to see ways through which they can overcome constraining contextual influences and develop in participants the confidence to act despite various limitations.

7.7 TUTORIAL PROCESSES

In the context of adult learning introduced in section 4.4, Usher *et al* (1997:25) describe education as involving '...engagement between teachers, learners and knowledge'. This involves an epistemological challenge for tutors in the course at two levels. Tutors need to continuously challenge conventional roles of themselves as '... enlightened pedagogues' and similarly the potential '... dependency' roles that learners conventionally assume in learning processes (*ibid*). Further, the tutors' role in the course as guiding participants through the learning experience requires continuous problematising of their own and participants' engagement with / within knowledge systems, structures and processes. This highlights the significance of tutor orientation to teaching and learning in the course.

Tutors are generally participants who have completed the course or who have equivalent experience in environmental education processes (see 3.5.3.3 & 5.4.3). Participants returning

to the course in the role of tutors engage with professional development processes at another level of '... clarifying ... environmental education processes and ... supporting and mediating the learning of others' (O'Donoghue & Lotz-Sisitka, 2002:8). Tutors often draw on their experiences and understandings developed through the course. Data reflects difference in course processes at the level of regional tutorial groups that appears to be linked to tutors' orientations to teaching and learning and understandings of course aims, intentions and processes (see 3.5.3.3, 5.4.3 & 6.2.3). This highlights the significance of clarity amongst tutors with respect to the reflexive aims and intentions for change underlying the course and the implications that these aims and intentions hold for course processes.

At the start of the 2000 course attempts were made to work with tutors to encourage increased understandings of the course aims and orientation and to explore course processes that best support these (see 5.4.3 & 5.5.2). Similarly, a tutors' booklet was developed to encourage tutors to explore ways in which they can best support the learning of course participants. In terms of insights gained through this research process, it might be valuable to reorient the tutors' booklet and tutors workshop to clarify reflexive aims and orientations and consequent course processes that are shaped by these aims orientations (see 7.2). It might similarly be useful to draw on particular insights emerging from this research, for example, supporting change through assignment work, to inform the further development of the tutors' booklet.

Tutors in the course are volunteers and professional development for tutors is constrained by budgetary limitations. Repeat tutoring in the course provides an advantage, since tutors then continuously engage with / within professional development processes to support the reflexive learning of others. To accommodate however, for first time tutors it might be useful to explore more intense processes of professional development to ensure clarity on the reflexive potential of the course and the tutors' role in supporting participants to explore the potential for change in context. Another possible way of supporting first time tutors is through the process of mentoring. First time tutors could for example, work with a more experienced tutor in the first year before taking on the full time role of tutor in subsequent years. This mentoring approach could also possibly provide in the course, a larger core of tutors that support the professional development of students and enable and support an engagement within reflexive processes.

7.8 SUMMARY AND CONCLUDING REMARKS

Through this chapter and in drawing on emerging insights into reflexivity and reflexive competence and data analysed through the study, various recommendations have been made for a reorientation of the RU/GF course to better support the reflexive exploration of options for educational responses to contextual environmental issues and risks. These recommendations I

have offered as *leverage for change* and *issues for resolution*, terms borrowed from Usher *et al* (1997:49) to indicate the open-ended and reflexive nature of the curriculum framework in the course (see 4.4.3 & 4.5). Constant reflexive review of course processes in relation to the course aims and orientation allows for the identification of issues for resolution that can be addressed through the open-ended course processes as leverages for change (see 2.9 & 5.5). This research project represents, in part a further dimension of the reflexive nature of the curriculum framework, as course developers attempt to understand the implications of transformation frameworks provided for education and training through a NQF and to articulate the implications of this framework for further reorientation of the course. Through discussions of course processes in relation to reflexivity in this study, various issues for resolution have emerged. These issues for resolution have provided a way of identifying various areas in course processes to better support the development of reflexive practitioners, emerging as significant leverages for change within which I have made specific recommendations (see 4.4.3). These recommendations made include, in summary:

➤ **The course orientation and aims**

The reflexive aims and orientations are shared with participants through a discussion of the key features informing the course contained in the introductory texts to the course materials and at the first workshop of the course. An analysis of these introductory texts and introductions to the course, however show that reflection is strongly emphasised with less of a focus on reflexivity. Drawing on Beck's (1999:109) thesis of reflexivity that emphasises a focus on unawareness beyond the dominant and scientific knowledge frameworks within which environmental issues and risks and responses are constructed, the need arises to foreground the notion of reflexivity in the course aims and orientations, as distinguished from reflection (see 7.2). This emphasis on reflexivity does however not contradict the importance of reflection as a critical *part* of reflexive processes. Further, in supporting a social epistemological framing of reflexivity the recommendations made include the suggestion to clarify processes of change that challenge modernist conceptions of change as addressing practical issues within specific social environments (see 7.2). Drawing on Popkewitz (1999:18) and Popkewitz and Brennan (1998:8) a recommendation is made to foreground the notion of change as ruptures and breaks in dominant knowledge frameworks (and the power relations embedded in them) as a means to opening up alternative possibilities for the construction of social life. Specific recommendations made, include:

- ◆ A clear articulation of the reflexive aims and orientations of the course, drawing on Beck's (1999:109) thesis of unawareness as central within reflexive processes and the further

articulation of a social epistemological framing of reflexivity as challenges to dominant knowledge frameworks and the consequent construction of social life.

- ◆ A clear articulation of the intention to support social processes of change through supporting processes of disrupting dominant, scientific knowledge frameworks out of which risks emerge, are communicated and managed.
- ◆ To address some of the challenges with which participants are confronted as they engage with orientations to teaching and learning processes different from those to which they have been traditionally exposed, a clear articulation of the various course processes that support the reflexive exploration of responses to environmental issues and risks in context, drawing on the clearer articulation of the reflexive orientation and aims of the course. This recommendation also suggests a clearer articulation of some examples of how the reflexive orientation and aims come to shape different course processes, that might support the ongoing clarification of these course processes in the context of the reflexive orientations and aims of the course, as participants (students and tutors) engage within these processes.
- ◆ The development of course specific outcomes and theme specific outcomes that foreground the reflexive and change orientation and aims of the course and so provide participants with a clearer framework for learning and exploring reflexive environmental education processes in context (see table 7.1 & 7.2).
- ◆ A further recommendation made with respect to clarifying the orientation and aims of the course is to draw on the theoretical insights emerging from this study to inform discussions of the key integrative elements (or key features as they are currently referred to in the course) that support the reflexive exploration of options for approaching environmental education in context.
- ◆ A reorientation of the introductory texts to the course materials to highlight these recommendations made above and to support both tutors and participants in working within the course processes that support the reflexive orientation and aims of the course.

➤ **Assignments supported through course materials**

Drawing on the theoretical framework emerging from the literature review of this study and the data analysed various tensions emerge as participants engage with the work of assignments that form the central focus of learning in the course (see 7.3). These issues include the need to support more closely the exploration of risks associated with environmental issues, the need to

support the exploration of environmental issues and risks in socio-historical contexts, the need to support a more in depth exploration of the why inherent in practice, the need to engage conflicting rationalities and the need to foreground processes of social change (see 7.3). Specific recommendations made in this regard include:

- ◆ The reorientation of the pre-course assignment to locate this assignment more clearly in the reflexive exploration of processes through which to respond to environmental issues and risks in context (see table 7.3). A recommendation is further made to rename this pre-course assignment, assignment one and to introduce it relative to subsequent assignments in the course and so encourage an ongoing orientation to exploring environmental education processes in context.
- ◆ The reorientation of assignment one to foreground the notion of risks to a greater extent (see table 7.4). In line with this reorientation, a further suggestion made is for the explicit inclusion of discussions of the nature of modern day risks in the core text supporting this assignment. In drawing on Beck's (2000:100) idea of risks being the 'whip' driving current thought and action, a further recommendation made is to focus participants, in this first assignment, on developing responses that respond to the unpredictable and uncertain character of risks.
- ◆ A suggestions is made for a reorientation of assignment two to focus more clearly on the exploration of socio-historical contexts that shape thought and action, through focussing on the critical interrogation of aims and objectives of environmental education programmes in context and the constraints in these to responding effectively to environmental issues and risks (see table 7.5).
- ◆ Suggestions are made for the reorientation of assignment three to focus more clearly on a critical investigation of dominant knowledge frameworks and power relations emerging from within these as participants begin to explore the social construction of life and alternative ways of engaging within knowledge frameworks (see table 7.6). The reorientation of assignment three might similarly require a reorientation of core text three to include a focus on social epistemologically framed reflexive processes that seek to destabilise and challenge dominant knowledge frameworks as possibilities for social change are explored.
- ◆ In an attempt to foreground the notion of change in assignment work and to support processes of challenging and changing traditional educational responses to environmental education, suggestions are made for a reorientation of assignment four that encourage participants to draw on the insights developed in the former assignments (see table 7.7).

These include insights gained through the exploration of the socio-historical contexts within thought and action are shaped and the critical analysis of how dominant knowledge frameworks come to shape differential social positions in education processes as a way of responding to these constraints to social change.

- ◆ Further suggestions made is for a clear introduction of assignment work relative to the reflexive intention for change inscribed in the orientation and aims of the course, presenting engagement with assignments as an ongoing process of exploring options for change in the practice of environmental education.

➤ **Other course processes**

The recommendations made for clarifying the reflexive orientation and aims of the course and the reorientation of assignments to foreground a social epistemological framing of reflexive processes has implications for all other course processes supporting learning through the course. These include, assessment processes, supporting the use of theoretical perspectives in the course, supporting the development of reflexive agency and supporting tutorial processes.

- ◆ With respect to the role of theory, recommendations are made to challenge the central role that theory traditionally comes to play in teaching and learning processes (see 7.4). This includes for example encouraging participants to consider critically the role of theory in reflexive explorations of options for environmental education processes, through a reorientation of the introductory texts to the course materials. Recommendations are made for the critical consideration of the ways in which theory is used in the context of the course that might come to define a specific role of theory in the course. Recommendations are further made for processes of sharing amongst tutors to explore more effective ways of supporting participants' engagement within theoretical perspectives through the course. A further suggestion made is to encourage participants to 'narrate' practice, drawing on the theoretical perspectives to which they are introduced through learning in the course and to treat theory as an epistemological problem.
- ◆ Recommendations are made for the clarification of assessment as processes of learning in the course relative to the reflexive aims and orientations through the introductory texts to the course materials (see 7.5). Recommendations are further made to encourage the conception of assessment processes as engaging in ongoing and reflexive interactions and deliberations, in the company of critical others, to explore more effective processes of responding to environmental issues and risks outside of dominant approaches. A second

recommendation made is to encourage peer assessment as a further process of exposing participants to outside perspectives as they explore options for change. Recommendations are further made for integrating rigour into assessment processes that on the one hand challenges participants to explore options for change outside of those presented within dominant knowledge frameworks and social relations, but also to support participants in this uncertain and uncomfortable exploration. A recommendation is further made to adopt an integrated approach to assessment that supports the applied competence framework of the NQF.

- ◆ In challenging conceptions of individual agency and in recognising the futility of individual responses to the nature of scope of modern day environmental issues and risks, recommendations are made to support participants in exploring environmental issues and risks and responses to these in the critical company of others (see 7.6). Some suggestions made here include, for example the reorientation of assignment one to include an audit that encourages collaboration around contextual environmental issues and risks and encouraging the sharing of approaches to respond to environmental issues and risks in various contexts, through, for example, and needs to further addressed at the level of further support through tutorial processes (see 7.7). shared cases studies included in the course materials.
- ◆ Tutorial processes have always been recognised as crucial in supporting learning amongst participants in the course (see 5.4.3). In this regard recommendations are made to support the professional development of tutors to in turn better support participants, through the various course processes, in engaging with reflexive explorations of options for environmental education in their context (see 7.7). Further recommendations include suggestions to enable a sharing of perspectives on the reflexive orientation and aims of the course and course processes that support these orientations and aims.

Through discussions of course processes in this chapter, in relation to emerging insights into an engagement in reflexive processes and the development of reflexive competence as evidence of this engagement, various insights were gained into the potential reorientation of some of the course processes in the RU/GF to better support participants' in reflexively exploring responses to environmental issues and risks in context. This chapter focuses specifically on course processes in the context of the RU/GF course, as a case study of a course enabling an engagement within reflexive processes of change and consequent development of reflexive competence. The research study was however conducted within the broader context of educational change and social transformation in South Africa, as outlined in section 2.4, 4.3 and 4.6. As such, the insights gained through this analysis of the RU/GF case are drawn on in

concluding discussions of 'possible implications' for learning programme development, more broadly, and for environmental education, more specifically, in the context of the South African NQF competence-based framework, discussed in chapter eight.

8.1 INTRODUCTION

A significant aspect shaping the introduction of the South African competence-based framework is the context of global and local change (see 2.4). On a global level, economic imperatives associated with processes of globalisation have shaped change in education and training, these imperatives at times conflicting with equally important local priorities of economic and social change at levels of policy and implementation (see 4.2, 4.3.1 & 4.3.3). These, often contradictory imperatives underlying the NQF, have been the cause for skepticism amongst critics in the education community in South Africa, though some critics of the NQF, such as Muller (1996:19) and Harley and Parker (1999:186), amongst others, recognise the potential in the NQF competence-based framework to balance these imperatives (see 4.3.2). Crucial in realising the transformation agenda underpinning the introduction of the South African competence-based framework is the need to attend to the pedagogy underlying learning programmes developed within the NQF framework rather than focusing on minimising the playing up of these equal economic and social imperatives against one another (see 4.3.2). In this sense a social epistemological approach to engaging within reflexive processes of change through challenging dominant knowledge frameworks, and the social relations embedded in these, become particularly significant in the context of supporting the transformation agenda of the South African NQF (see 4.6.3).

Section 4.3.1 introduces the nature of pedagogical practices underlying performance (what Harley and Parker (1999:183) also call outcomes models) and competence models in teaching and learning. Performance pedagogies appear to reflect more of a technical rational approach to teaching and learning and in this sense the competence model appears to be more appropriate within the context of transformation in South Africa (see 4.3.1). However, current approaches to teaching and learning in the NQF appear to reflect a mix or hybrid of these two approaches (see 4.3.2). Muller (1996:18) cautions that current approaches reflect that competence practices are being engaged with in a performance orientation highlighting the need to problematise pedagogical practices that move teaching and learning beyond narrowing, technicist approaches evident in performance models. In encouraging teaching and learning practices that are more reflective of competence models, Popkewitz (1999) and Popkewitz and Brennan's (1998) theory of a social epistemology becomes significant in encouraging learning

practices that challenge the legitimacy and status of knowledge frameworks and the principles by which social roles and identities are formed (see 4.6.3). Competence models are similarly more consistent with Beck's (1992, 1999) thesis of a reflexive engagement with knowledge and unawareness in a world risk society (see 1.5.1, 2.6 & 5.2). Rather than becoming preoccupied with what learners learn or the outcome of the learning experience, learning programme design needs to be approached in a way that *problematise* what individuals learn, *how* they learn and *why* they learn it in a particular way. This research has also indicated that there is a need to problematise the individualizing nature of educational processes particularly in the context of environmental issues and risks where solutions require collaborative efforts in community and social contexts (see 6.4.7 & 7.6).

The specific aims underlying the research discussed in this thesis were to develop critical insight into the development of reflexive competence as defined in the South African competence-based NQF in relation to course processes (see 1.2 & 3.2). The purpose of this aim being to inform curriculum development processes for reflexive competence in the NQF, more broadly, and within the context of environmental education professional development processes, more specifically (*ibid*). Critical insights emerging out of a focus on these aims is the need to distinguish between reflexivity as social processes of change and reflexive competence as the evidence of this engagement, these two however being integrally connected to each other (see 1.5.4 & 7.2). In exploring the development of reflexive competence it became necessary to focus on an engagement within reflexive processes out of which a range of integrative elements of reflexive competence has emerged (see 3.7.2 & 6.3). Insights developed through this research draws on the case of the RU/GF course as an example of an environmental education professional development programme enabling an engagement in reflexive processes and so too the development of reflexive competence (see chapters 5, 6 & 7). Out of an analysis of an engagement within reflexive processes specific recommendations have been made for the reorientation of various course processes in the RU/GF course to more effectively support participants' engagement within reflexive processes and the development of reflexive competence in responding to socio-ecological issues and risks through education (see chapter 7). I draw on the insights gained through this exploration of the RU/GF course as a case to discuss some of the implications this may have for learning programme design that enables an engagement within reflexive processes and the development of reflexive competence in the context of social transformation in South Africa.

This chapter, in focussing more specifically on the South African NQF competence-based framework reviews the challenges of standards-based reform in a context of transformation and argues for a reinterpretation of reflexive competence if the goals of transformation underlying the development and the implementation of the NQF are to be realised (see 4.6.3). This

reinterpretation argues for a social epistemological approach to reflexivity that challenges dominant and existing knowledge frameworks, and the power relations embedded in these, as options for change are explored beyond conventions and norms of social life. The chapter further provides a summative perspective on the significance of the interrelationship between different course processes that enables the development of an epistemologically oriented conception of reflexive competence. Drawing on the case study approach used in the research, these perspectives are offered as 'possible implications' for learning programme design in the NQF and for environmental education professional development programmes. The chapter similarly reflects on some of the challenges associated with re-configuring adult learning and professional development processes offering these reflections as 'possible implications' for learning programme design in the NQF and environmental education professional development programmes. The chapter is concluded with a reflexive review of the research process and identifies areas for further research required to deepen the exploration of supporting an engagement in reflexive processes and the development of reflexive competence (and by implication applied competence) in environmental education and in the context of change in South Africa.

8.2 CHALLENGES OF STANDARDS-BASED REFORM IN THE CONTEXT OF TRANSFORMATION

Change in education policy and practice in South Africa and the introduction of the NQF competence-based framework has been shaped equally by global trends and local priorities (see 2.4). Following South Africa's re-entry into the global market, education and other policies are being shaped by global trends in production and consumption and the need for an increasingly competitive and flexible workforce (see 1.5.4, 2.4.3 & 4.2). In this sense, change in education is being shaped by global trends associated with economic rationalism (*ibid*). The NQF competence-based framework is similarly seen as a significant medium in supporting transformation processes as South Africa attempts to move towards increased processes of democracy in the post apartheid era (see 4.3.3). As global trends and local priorities converge within a context of transformation in South Africa this research indicates the significance of course developers engaging critically with / within processes of change so that global economic rationalist imperatives are not privileged above local priorities of equity, justice and social transformation (see 1.5.4, 2.4, 4.3.1 & 4.3.2).

Section 4.3.2 introduces some of the main critiques associated with competence-based systems of teaching and learning. Amongst these critiques is the potential inherent in competence-based systems to serve as strategies of governance and self-governance, regulating social roles and identities through 'norms' defined as competences. In this sense, foundations, structures, systems and processes of dominance are perpetuated and maintained through

excluding certain forms of knowledge (reason) which make alternative ways of knowing possible and education processes run the risk of being reduced to closed and linear learning events, privileging performance (often work-related) as the ultimate outcome of the learning experience (*ibid*). At the level of policy the South African NQF competence-based framework appears to address some of these critiques (see 4.3.3). However, challenges in designing learning programmes remain at the level of how competence is interpreted and the role that it comes to play in maintaining and reproducing existing constructions of social life. This has particular implications for defining and using national standards (*ibid*). This study argues that the challenge for course developers lies in this interpretation of competence and specifically the applied competence framework of the South African competence-based NQF. The study further argues that course developers should consider critically the role of national standards (competences) in the context of transformation in meeting both the economic needs of the country and the social priorities.

The study points to the need to develop and interpret national standards in ways that are less specific and sufficiently open-ended to accommodate for the exploration of different forms of reasoning that challenge traditional principles of ordering inherited from our oppressive past. Usher *et al* (1997:25) write that ‘... education must inevitably have purpose and direction’. However, within a context of exploring options for change this study indicates that there appears to be a need to explore national standards in ways that leave open opportunities for ‘... the unexpected, the tangential, the countervailing’ (*ibid*). This becomes specifically significant in challenging the potential social reproductive function of education and encouraging an exploration of differing epistemological frameworks and principles that may guide action and participation in processes of change. In developing and interpreting national standards that seek to contribute to learning for change, it seems important that educators remain vigilant of potential constraints in national standards (see 4.3.2 & above). In this sense, Bauman (2001:139) argues for open-ended learning processes that are more ‘... concerned with remaining open-ended than with any specific product’.

In attempting to move away from teacher directed learning inherent in performance pedagogical models, course aims and outcomes become significant in providing learners with a learning framework to guide learning (see 4.3.1 & 7.2). All learning programmes in the NQF require the defining of purposes and outcomes that reflect national standards (see 4.3.3). The purpose in learning programmes provides the space for expressing the purpose of learning in a generic context, for example, the context of transformation in South Africa. Outcomes in learning programmes provide opportunities for defining an exploration of options for change in specific contexts. In designing learning programmes, defining the purpose and outcomes for these learning programmes may be a useful way to articulate and clarify intentions for change. As

indicated in the recommendations in Chapter 7, the arena of purposes and outcomes appears to be an important 'space' in which course developers may begin to interpret the competence framework of the NQF in critical and open-ended ways, as argued above. This, however, requires insight into the 'hybrid' nature of the NQF, as discussed in section 4.3.1 and 4.3.3.

8.3 REINTERPRETING REFLEXIVE COMPETENCE IN THE CONTEXT OF TRANSFORMATION

Almost a decade after the first democratic elections, South African society is continuously confronted with wide ranging socio-ecological issues rooted in the socio-historical formations of colonialism, the apartheid era and modernist approaches to development (globalisation). Visions for change are articulated in a wide range of policies, though the implications for these visions appear to be less evident in the day-to-day lives of the majority of South Africans. In this context of transformation one of the important questions to consider appears to be linked to the conceptions of change that prompt action to support and contribute to transformation (Janse van Rensburg 1995; see also 6.4.7). An equally significant and related question to consider is how we engage within processes of change to realise the visions for transformation articulated at the level of policy.

In the context of research, Popkewitz and Brennan (1998:7) and Janse van Rensburg (1994:16) recognise the limitations in modernist conceptions of change that rely on existing frameworks of reason (and knowledge) as a means to directing social action and so '... guarantee future betterment in society'. Popkewitz (1999:27) similarly critiques the '... unquestioned hope of modern social thought' that attempts to identify specific actors and agencies wherein socio-ecological issues and risks originate and the identification of 'others' who '... manage, facilitate or empower (others to take part in) processes of social transformation' (Janse van Rensburg, 1994:17). These efforts at transformation do little if not exacerbate social differentiation emerging from placing '... prophets' endowed with expert knowledge in the service of 'the people' to effect change (Popkewitz, 1999:27). In this sense, it seems no longer functional to continue engaging theoretically / rhetorically with an ideological critique to identify actors for change which appears to be the approach on which most efforts at transformation in South Africa have been premised (see 4.6.2). Popkewitz (1999:18) and Popkewitz and Brennan's (1998:9) theory of a social epistemology offers an option for moving beyond the limitations of '... managing social change ... [and] ... identifying social contradictions' to focus on learning that disrupts '... forms of reason that prevent us from seeing alternative types of reasoning' and the construction of social life (Popkewitz, 1999:35; see also 4.6.3).

In a South African context, the NQF competence-based framework has been identified as a significant vehicle for change (see 4.3.3). As discussed in this study, the defining of

competence-based standards in itself is unlikely to support the transformation agenda underlying the introduction of the NQF (see 4.3.2 & 8.2). Of greater significance in supporting transformation is problematising the social context that shapes teaching and learning processes and '... the mode in which the message is conveyed' (Bauman, 2001:123). This is particularly significant in considering the hybrid nature of the NQF where performance and competence models with its differential pedagogies mix (see 4.3.1 & 4.3.2). This points to the need to continuously be vigilant of teacher and learner roles and identities and interactions with / within knowledge frameworks in processes of teaching and learning. This has particular implications for course design and course processes in the NQF that I have argued earlier in the thesis is a significant dimension of transformation in the South African context (see 4.3.3).

Section 4.6 introduces three potential framings of reflexive competence. This study argues that reflexive competence framed by an adaptation to change and reflexive competence in the context of social critique are both limited in terms of potential contributions to social transformation (see 4.6 & above). The third framing, placed more firmly in the context of transformation in South Africa, suggests a reinterpretation of reflexive competence as focussing on '...new kinds of interrelationships between agency and structure' (Delanty, 1999:148). This framing of reflexive competence, more appropriate within social epistemological approaches to change, implies the ability to '... undo ... mental patterns and tear down artful canvasses' that bring into question historically formed social roles and identities and '... reassert[s] an individuality that can challenge the rules of reason that subjugate' (Bauman, 2001:125; Popkewitz & Brennan, 1998:26; see also 4.6.3). Section 8.2 argues for the need to develop and interpret national standards in ways that accommodate for an open-ended and deliberative exploration of different forms of reasoning and principles of ordering. This research has indicated that it is equally important that course developers attend to the pedagogies inscribed in learning programmes that shape participation within knowledge frameworks and social roles and identities assumed within teaching and learning processes. In this sense it becomes necessary to design course processes and learning programmes that attempt to challenge narrow, technicist approaches to teaching and learning and, similarly, challenge existing and dominant forms of reason that shape specific social roles and identities (see 4.6.3, and Chapter 7).

8.4 LEARNING PROGRAMME DESIGN IN THE NQF

Processes of change are ongoing and are often complex processes to engage with (see 6.2, 6.3 & 7.2). In this sense, Edwards (1997:27) recognises the need for individuals to become lifelong learners, learning on an ongoing basis developing the capacity to understand, participate in and challenge processes of change (see 4.4.1). This notion of life long learning is

encompassed in the defining of reflexive competence in the South African competence-based NQF in '... developing the ability ... to learn from our actions' (National Training Board, 1997b:106; see also 4.3.3). This notion of ongoing learning to continuously engage critically with / within processes of change becomes significant in light of insights gained around the development of reflexive competence through this research.

This thesis argues that reflexive competence is closely connected with an engagement in reflexive processes of change and provides evidence of learners engaging in reflexive processes (see 1.5.4, 3.7.2 & 6.3). An engagement within reflexive processes of change signifies ongoing social actions and interactions within social systems, structures and processes and as such cannot be equated to the specific capacities that enable this engagement (see 1.5.4 & 3.7.2 & 6.2). Through this research reflexive competence has come to be seen as the evidence of engaging in reflexive processes and is seen as a collective of integrative elements of competence that support processes of challenging dominant knowledge frameworks and social relations embedded in these (see 1.5.4 & 4.6.3). Reflexive competence then cannot be seen as a set of discrete capabilities developed within the context of a single learning experience, course or programme (5.3). Rather, it appears to have a 'longer term' character, the development of which is enabled in an ongoing manner through actions and interactions shaped within social context (see 6.2 & 6.3). This longer-term and ongoing character of reflexive competence appears to be recognised in policy around the competence framework of the NQF in its emphasis on supporting life long learning to contribute to, and benefit from society (National Training Board, 1997b:96).

The defining of applied competence implies an integrated approach to competence development that is particularly significant in the context of the South African competence-based framework and its hybrid character (see 1.5.4, 2.4.3, 4.3.1 & 4.3.3). Approaching the development of competence through an integrated approach is one of the mechanisms to avoid the privileging of performance pedagogies and consequent narrowly defined economic priorities over equally significant social goals underpinning the introduction of the NQF (see 4.3). An important consideration in approaching competence development in an integrated way is viewing course processes as a collective that enables the development of a range of competences (including reflexive competence). In reviewing the development of reflexive competence in the case of the RU/GF it became evident that no single course process on its own enables this development but rather a collective of course processes informed by the orientation and aims of the course (see 1.3.2, 5.4 & 7.2). Through an integrated approach to competence development opportunities are opened up for the development of a range of integrative elements of competence supporting an engagement in reflexive processes. Practical competence allows opportunities through which learning can be applied in context.

Foundational competence encourages the development of a deeper and critical understanding of the theory that shapes thought and action and reflexive competence allows opportunities for critically challenging social foundations, systems and processes that define particular forms of reason and principles of ordering (see 4.6.3).

In exploring the development of reflexive competence, this research has focussed on participant's engagement in reflexive processes *within* the context of the RU/GF course, reflexive competence emerging as evidence of this engagement. A review of literature to inform this study reflects that the notion of reflexive competence has not been explored in much depth. This required me to draw on a range of literature, introduced through the study, to inform perspectives on reflexivity, reflexive competence and social change. From this literature review an analytical framework has emerged that has provided insight into the various integrative elements within an epistemological framing of reflexive competence (see 3.7.2 & 4.6.3). Though developed within a context of exploring responses to the increasing scale of socio-ecological issues, these integrative elements of reflexive competence do have the potential to inform processes of change within a broader context of social change. These integrative elements of reflexive competence include:

- ◆ the critical exploration of knowledge frameworks and consequent social relations within which socio – ecological, political and economic issues emerge to understand how these issues are constructed, communicated and managed;
- ◆ the critical exploration of socio-historical contexts within which issues emerge as a way of understanding how social thought and action has been constructed as alternatives are explored;
- ◆ the critical reflection on the unconscious preconditions of knowledge and action that begins to open up possibilities for renegotiating and re-establishing foundations and 'norms' for engaging within knowledge frameworks and embedded social relations;
- ◆ the engagement within theoretical perspectives to explore alternative understandings and ways of doing in social context;
- ◆ engaging in processes of interactions and deliberations that challenge conventions shaping thought and action as alternatives are explored.

(see 3.7.2)

The aim of the research as articulated in section 1.2 was to gain insight into course processes that better support an engagement in reflexive processes and the development of reflexive competence. The study draws on the case of the RU/GF with its associated course processes intended to support the reflexive exploration of options for educational responses to environmental issues and risks in context (see 5.4). This study has highlighted various areas of reorientation of course processes to better support the reflexive exploration of approaches to environmental education (see chapter 7). Despite its focus on a specific social context, various insights have emerged with respect to learning programmes design that enable an engagement within reflexive processes and the development of reflexive competence. In this section, I draw on these emerging insights in discussing some 'possible implications' for learning programme design in the South African NQF competence-based framework, integrating the notion of reflexive competence.

8.4.1 Change and the development of reflexive competence

Social change emerges as a central feature within reflexive processes (see 1.5.1, 1.5.4, 4.6.3 & 7.2). Popkewitz (1984:174) however, recognises the limitations inherent in modernist approaches to change that reflects what he calls '... motion within a system' through which change is enacted by drawing on the very social structure, systems and processes out of which the need for change emerges (see 4.6.3, 6.4.7 & 7.2). Such approaches to change serve only to bind possibilities for change within, and do not open up possibilities to transcend existing social formations. Through their thesis of a social epistemology Popkewitz and Brennan (1998: 8) offer a conception of change as ruptures and breaks in knowledge systems that serves to destabilise existing and dominant forms of reasoning and principles of ordering and so open up possibilities for change beyond existing social formations. In the context of transformation in South Africa this conception of change becomes particularly significant in challenging the disparate social formations that continue to exist beyond the 1994 democratic elections (see 8.3). Section 6.4.7 however highlights some of the tensions with which participants are confronted as they attempt to engage within processes of change in social contexts that have been (and continue to be) shaped by dominant and existing forms of reasoning and principles of ordering. Given the South African context of disparate and unequal social relations inherited from colonial and apartheid governments, there appears to be a need in the broader context of transformation to engage learners more explicitly with the notion of change in course processes that encourage them to challenge dominant and existing social formations as options for change are explored. Recommendations made in the context of the RU/GF course in this regard is to explicitly articulate the intention for social change in the course orientation and aims and to consider all course processes in the context of the reflexive orientation and aims (see 7.2). This might serve to foreground and support an engagement within social processes of change and

might similarly come to be a useful consideration in the broader context of learning programme design in the NQF that support social change in the South African context of transformation.

8.4.2 The significance of socio-historical context

Popkewitz (1999:22) writes that ‘... by asking how the eyes see, makes possible the question of how systems of ideas makes possible what is seen, thought about, felt and acted on’. In this sense, history and context is foreground in attempting to critically understand socio-historical influences that shape and similarly constrain changes in thinking and practice. Locating and examining practice within a socio-historical context allows learners to see the constraints inherent in thought and practice and explore ways of challenging these constraints to open up options for change.

In a South African context of transformation, locating practice within a socio-historical context becomes particularly significant in identifying and challenging forms of reason and principles of ordering that shape disparate and unequal identities, roles and actions inherited from the pre 1994 government. It similarly becomes significant in exploring ways to challenge these forms of reason and principles of ordering that confine and inter possibilities for change. As such, it appears necessary to foreground an exploration of socio-historical context in designing learning programmes that enable and support an engagement in reflexive processes and the development of reflexive competence. Some recommendations have been made in the context of the RU/GF course to better support participants in exploring socio-historical contexts shaping thought and action (see 7.2 & 7.3). These recommendations might provide a framework within which to encourage learners to critically explore questions such as what, who, how and why about the construction of social life and so encourage a deeper exploration of the socio-historical circumstances and conditions that have come to shape thought and action as possibilities for social change are explored.

8.4.3 Reflection and reflexivity

Critical reflection and reflexivity appears to be two terms that are often conflated and taken to mean the same thing, as reflected in some examples of reflexive competence highlighted in section 1.5.4, and in the way in which these terms are at times used interchangeably (see 7.2). In this thesis critical reflection is distinguished from reflexivity, but however remains a significant feature of engaging within reflexive processes (see 1.5.4, 5.3.3 & 7.2).

Critical reflection allows for the development of critical insight into current practices and actions and influences that shape and constrain these practices and actions (see 7.2). In this sense,

critical reflection not only answers the question of what our practices and actions are, but also why these practices and actions take on a particular form or orientation. Critical reflection is however tied within existing and dominant knowledge frameworks and social relations and therefore lack the potential to transcend systems, structure and processes that create and maintain oppressive social orders and so become limited in exploring ways of addressing disparate and unequal social relations emerging from within these oppressive systems, structures and processes (*ibid*). In this sense, Beck's (1999:109) thesis of reflexivity, emphasising not only knowledge but also unawareness becomes significant in encouraging a challenge to and exploration of different ways of knowing and different social structures, systems and processes. Giddens' (1984) theory of structuration similarly becomes significant in recognising the reflexive capacities of social agents to move beyond existing constructions of social life. Structuration theory suggests that as social agents become increasingly aware of systems, structures and processes that shape the construction of social life, they are 'prompted' to act differently and so challenge the deterministic and reproductive character of social structure (see 1.5.1). In this sense, critical reflection appears to be limited within a focus on 'what is' and constrains consciousness within existing systems, structures and processes, while reflexivity allows a future projection (and tentative applications) of what and how things could be which includes confronting and grappling with the unknown (see 7.2).

In the transformation context of South Africa, critical reflection thus remains an integral part of learning though this needs to be located within the context of exploring options for change and so tied within critically reflexive processes. In the context of learning programme design in the NQF it might be useful to clarify the distinction between reflexivity and reflection, keeping in mind however that reflection forms a *critical part* of reflexivity (see 7.2).

8.4.4 Connecting theory and practice

A central thesis emerging within the social epistemological framing of reflexive competence is the notion of change as disrupting and challenging the epistemological constructions of knowledge and reason (Popkewitz & Brennan, 1998:29). Through traditional educational practices, theory is often presented as the 'one universal truth' that often provides 'direction' for change with few opportunities for challenging the legitimacy of knowledge claims presented in theory. In this sense Usher *et al* (1997:138) comment on the dominant role of theory in regulating practices. This dominant role of theory in teaching and learning processes was (and sometimes still is) particularly prevalent in the South Africa context where the influences of fundamental pedagogics are still being felt long after its demise. In the context of engaging in reflexive processes, however, formal theory comes to play a significant role in providing the framework within which to reflect on the social construction of thought and action, exposing the

limitations in thinking and practice and in opening up options for alternative ways of seeing and acting in the world.

A further problematic that emerges in teaching and learning processes is the traditional theory practice divide where comments such as 'I am a practical person' and 'I don't see the point in theorising about things' is prevalent (see 2.4, 4.4.3 & 4.5.4). The futility of 'keeping' theory and practice disconnected is however increasingly being recognised, as is evident in the coining of applied competence in the South African NQF, through which practical and foundational competence is integrated through reflexive competence. Usher *et al* (1997:135) highlight the danger in privileging either practice or theory and argue for linking the two in reflexive processes (see 4.5.4). On the one hand the privileging of theory could result in a failure to problematise practice whereas privileging practice could result in learners becoming '... unreflexive prisoners' of their own experience and practice (see 7.4).

A central feature of reflexivity is the emergence of conflicting rationalities that arises out of critically and reflexively reviewing existing thought and action and how these come to be shaped within socio-historical context. As systems, structures and processes that shape thought and action are called into question and opened up to critique, the legitimacy of dominant knowledge frameworks and power relations embedded in them is challenged and a greater spectrum of possibilities for new and different ways of thinking and acting emerges, and hence the emergence of conflicting rationalities. In this sense the role of theory comes to play a significant role in supporting and engaging the emergence of conflicting rationalities within which options for change are opened up.

The significance of theory in understanding thought and action appears to be inscribed in the defining of reflexive competence in national policy statements in recognising the theory–practice link (see 1.5.4). This conception of reflexive competence, integrating practical and foundational competence, could however reflect a limited perspective of praxis in the context of change, where both practice and theory can be taken to be unproblematic and thus do little to challenge existing forms of reasoning and principles of ordering (*ibid*). Section 1.5.3 argues that in a context of change, praxis needs to be conceived of in terms of moving beyond merely recognising the link between theory and practice and needs to be seen in the context of problematising both theory and practice, to inform change. In this sense, the reframing of reflexive competence becomes significant in moving praxis beyond the theory–practice link, to critically interrogate practice and the theories that inform and arise out of practice, so as to destabilise dominant forms of reasoning and principles of ordering (see 4.6.3). This perspective on praxis, inscribed in the offered reframing of reflexive competence becomes more appropriate within the context of transformation in South Africa in serving to challenge dominant

constructions of social life and exploring differing ways of knowing and possible alternatives to existing conditions and practice.

In the context of the reframing of reflexive competence, the role of theory comes to play a significant role in enabling praxis and encouraging change. It is however, crucial that the role of theory be clarified in learning, so as not to place theory in the conventional and dominant role of providing direction for change, but in a role that supports the continuous challenge to the legitimacy of dominant forms of reasoning and principles of ordering. Theory needs to be considered in the context of providing critical perspectives with which to interrogate actions and practice to open up options for change.

8.4.5 Assessment as learning

This thesis introduces the notion of reflexive competence as not a single distinct aspect of professional development in the context of a single learning process, but rather a range of integrative elements of competence emerging out of longer-term and ongoing actions and interactions within social context. In this sense, assessment as learning becomes a significant process in enabling an engagement within reflexive processes and the development of reflexive competence in that it encourages ongoing deliberations around constraints and challenges to change and critically exploring new and different possibilities for change (see 7.5).

In the context of the hybrid nature of the South African competence-based NQF, assessment as learning appears to be significant in challenging the dominance of performance pedagogical models over competence pedagogical models and the consequent social ordering inscribed in these pedagogical practices (see 2.4.3, 4.3.1 & 4.3.3). In a South African context of transformation this approach to assessment becomes equally significant in challenging dominant forms of reasoning and principles of ordering that create and sustain unequal social relations. Assessment as learning appears to be more consistent with competence pedagogical models in focusing on developing the potential of the learner rather than focusing on accomplishment or deficits in accomplishment (Muller, 1996:15; see also 5.4.5 & 4.3.1). This approach appears to challenge the technical rational approach to assessment characteristic in performance pedagogic models and appears then to move away from assessment as an instrumental means to a predefined end (see 4.3.1). In focusing on the process of learning, this approach to assessment becomes more appropriate in enabling the development of reflexive competence over time through encouraging ongoing deliberations within and beyond existing knowledge frameworks and consequent social ordering. Assessment as learning in the context of transformation in South Africa, thus becomes an important consideration in learning

programme design if the intention to move teaching and learning beyond narrow, technicist approaches that perpetuate social differentiation is to be realised.

8.4.6 Summation

In the context of transformation in South Africa, change is a key feature underpinning learning in the NQF competence-based framework. In the context of the reframing of reflexive competence (as offered in this thesis) change is premised on challenging dominant and existing forms of reasoning and principles of ordering in a context where the nature of the issues and risks we are responding to is often unknown (see 4.6.3). In this sense, key features discussed above become significant considerations in the development of course processes and learning programmes enabling and supporting an engagement in reflexive processes and the development of reflexive competence.

Key aspects that may be considered in the development of course processes and learning programmes that enable and support an engagement in reflexive processes and the development of reflexive competence are, in summary:

- ◆ the need to foreground the notion of change in the context of potential contributions to transformation and to explicitly engage learners, through course processes, with / within processes of change (see 8.4.1);
- ◆ the significance of and need to foreground and encourage an exploration of the history and context that has come to shape action and participation in a South African context (see 8.4.2);
- ◆ the need to distinguish between reflection and reflexivity, recognising the integral role and purpose of critical reflection in developing the competence for reflexive review of action and participation (see 8.4.3);
- ◆ the need to foreground the link between theory and practice and enable a critical understanding of the role of theory in informing an understanding of thought and action in socio-historical context, in engaging conflicting rationalities and in exploring options for change (see 8.4.4); and
- ◆ the significance of assessment as a process of learning, encouraging ongoing professional development to actively participate in processes of change (see 8.4.5).

The South African competence-based NQF is underpinned by an intention for change. As such, this intention for change becomes crucial in informing course processes as learning programmes are designed that enable and support an engagement in reflexive processes and the development of reflexive competence to engage within complex socio-ecological and other issues in the context of transformation in South Africa. In this sense it becomes critical to frame processes of learning programme design and consequent course processes within clearly articulated orientations for change.

8.5 ENVIRONMENTAL EDUCATION PROFESSIONAL DEVELOPMENT IN THE COMPETENCE-BASED NQF

Beck's (1992, 1999, 2000) thesis of a 'risk society' focuses on the sociological origins of ecological issues and risks (see 2.6 & 5.2). In this sense, Delanty (1999:149) argues that '... the social theory of reflexivity is focused on the wider transformation of society'. This conception of environmental education is particularly significant in the development context of South Africa where economic growth and development priorities are coupled to issues of human rights and the increased democratising of civil society (see 1.5.1, 2.4, 2.7 & 4.3).

Various national policies in South Africa recognise the important role of environmental education in '... address[ing] key development concerns and ... fundamental human rights' (Environmental Standards Generating Initiative, 2000b:9; see also 2.7). This highlights the significance of environmental education professional development programmes in the NQF in supporting and contributing to change. The Environmental Standards Generating Initiative (a collective of environmentally oriented Standards Generating Bodies and other stakeholders) note that all role players involved in environmental education processes recognise '... the need for, nature and place' of environmental education in contributing to social transformation in South Africa (see 2.7).

Learning programme design in the NQF needs to explicitly engage learners in exploring environmental education as social processes of change. As indicated above and in 8.3 and 8.4.2, it would seem important that learners engaged in environmental education professional development programmes such as the RU/GF course (and others) are encouraged to explore the socio-historical context within which environmental issues and risks emerge so as to respond not only to the issues and risks, but also to the 'root' causes of these issues and risks (see 2.6). Janse van Rensburg (1994:14) describes the focus of environmental education as social processes of change as one that is aimed at '... developing solutions' to socio-ecological issues and risks rather than accumulating and disseminating information about these issues and risks. In this sense, environmental education professional development programmes (and associated learning programmes) would need to encourage a problems-based approach to

engaging within socio-ecological issues and risks, focusing on real issues that affect the day to day lives of individuals and communities (see 5.3.3 & 5.4.1). Through enabling processes of action and collaboration, environmental education as processes of social change involves ‘... developing the capacity for change’ (Janse van Rensburg, 1994:10). In this sense, environmental education professional development programmes (and associated learning programmes) would need to engage learners actively and collaboratively in developing competences that will enable learners to address future unpredictable and uncertain socio-ecological issues and risks, as argued earlier in this research report (see 7.2 & 7.3).

Engaging with risks requires adopting a futures perspective focusing on the unintended and unpredictable consequences of environmental issues and risks (see 7.3). Similarly, risks are socially constructed within dominant expert and scientific knowledge systems (see 2.6 & 5.2). This highlights the significance of Beck’s (1992:158) thesis of an epistemological challenge to the dominance of and dependence on scientific rationality in defining, understanding and exploring responses to socio-ecological issues and risks (see 5.2). In this sense, environmental education professional development programmes (and associated learning programmes) would need to critically engage learners in exploring not only existing knowledge about socio-ecological issues and risks, but also what is not known (unawareness) about socio-ecological issues and risks and *why* (see 1.5.1, 2.6 & 5.2). This highlights the significance of enabling participation in reflexive processes and the development of reflexive competence through environmental education professional development programmes to not only engage critically with the construction and understandings of issues and risks (see 5.2), but also to explore critically the educational processes through which responses to these issues and risks are formulated.

In summary, environmental education needs to be recognised as social processes of change in learning programme design. As such, an important consideration in designing environmental education learning programmes (and associated learning programmes) is to recognise the potential in environmental education processes to contribute to the transformation of South African society. A further significant consideration is to explicitly engage learners in critically exploring socio-ecological issues and associated *risks*, through an epistemological challenge to dominant forms of reasoning and principles of ordering within which risks are understood, constructed and managed.

8.6 CHALLENGES ASSOCIATED WITH A RE-CONFIGURING OF ADULT LEARNING PROCESSES

In the context of South Africa’s inherited past with specific social roles and identities forged through a history of domination created and sustained through apartheid education structures

(Harley & Parker, 1999:194; see 7.3.2 & 7.4), engaging learners in course processes that challenge dominant knowledge frameworks and conventional roles in teaching and learning processes appears to reflect a challenge for course developers. This becomes evident through this research in a review of participants' engagement within various course processes and the arising tensions (see 6.4.7). The following section draws on some of the trends shaping adult learning processes discussed in section 4.5, in discussing some potential challenges to engaging learners in course processes that support an engagement in reflexive processes and the development of reflexive competence, and as such highlights further 'possible implications' for learning programme design in the NQF.

The reframing of reflexive competence as offered in this thesis is grounded in change, enabled through challenging dominant and conventional interactions between teachers, learners and knowledge frameworks (see 4.6.3 and 8.4 above). In designing learning programmes and associated course processes that enable an engagement in reflexive processes and the development of reflexive competence, learning practices and processes similarly need to reflect this orientation to change, and are likely to come into tension with existing orientations to teaching and learning (see 6.4.7). Learning programmes reflecting features of this 'changed' orientation (as described in 8.4 above) is likely to be a novelty for many South African learners, as reflected amongst participants in the research (see 7.2). Drawing on insights gained in this research, it would seem important to enable learners as well as course developers and teachers to locate and understand course processes within a context of change aimed at challenging and destabilising the 'conventional' construction of social life and so contributing to transformation. This is so that the intention for change inscribed in course processes are not subverted by the novelty of new experiences of different orientations to teaching and learning. It would seem equally important that teachers and tutors recognise and remain cognisant of tensions between past educational experiences and changed orientations that might potentially confront learners in the NQF competence-based framework (as illustrated in the RU/GF course case study). As noted, this tension is key to enabling and generating participation in reflexive processes and the development of reflexive competence.

Reflexive competence is a new concept for many involved in learning processes, including policy makers, administrators, teachers and learners. Various interpretations of reflexive competence appear to be informing course design and in some cases reflect limitations in terms of potential contributions to processes of change in a South African context (see 1.5.4 & 4.6). As such, section 4.6.3 offers a potential reframing of reflexive competence within the transformation context of South Africa. This research has illustrated the significance of course developers being able to interrogate their (and I include myself here), and others' conceptions of competence in terms of its potential to shape learning programme design and more specifically,

in terms of its potential for enabling processes of transformation. National standards articulated as competence provide a framework and guidelines for educators and learners to develop learning programmes. The interpretation of these national standards (as argued here) becomes particularly significant in avoiding the dominance of performance pedagogical models being privileged in the NQF (see 8.2). In this sense, it is equally important that both learners and educators recognise reflexivity and reflexive competence in enabling processes of change.

Course processes appropriate within the reframing of reflexive competence as offered in section 4.6.3 are likely to lead to the challenging of existing and dominant knowledge frameworks and the 'expert' role of the pedagogue and the associated dependency role of the learner. In this sense, the 'authority' of existing theoretical perspectives is brought into question and a critique of theoretical perspectives is opened up to new definitions and roles in learning processes (see 4.5.4, 7.5 & below). Similarly, differential roles in learning processes are challenged and learning becomes more a process of interactive and deliberative meaning making in the company of critical 'others' (Gergen, 2001:125; see also 7.3.3).

Usher *et al* (1997:137) recognises theory as significant in providing a means through which practice can be problematised (see 4.5.4). This view of theory in learning processes challenges the conventional view of theory as presenting '... a ... set of universal truths' that guide action and participation (Popkewitz & Brennan, 1998:27). In the case of the RU/GF course, theoretical perspectives are offered to participants as 'lenses' through which to critically interrogate practice and explore options for change (see 5.3.3). Participants are also encouraged to clarify 'theories' that are situated in their practice. Data presented however, reflects some of the challenges with which participants are confronted as they engage with this 'different' orientation to theory in learning processes (see 6.4.7). In this sense, there appears to be a need to continually encourage learners to problematise theory and to challenge the conventional role of theory in learning. In the competence framework of the NQF in South Africa accommodations are made for the role of theory in learning processes through the defining of foundational competence. However, in the context of transformation in South Africa it becomes necessary not only to engage learners with theory, but to more importantly encourage a critical engagement within theoretical perspectives so that options for change may be sought outside of dominant knowledge frameworks. In this sense, theory constructed within particular socio-historical contexts is recognised as an epistemological problem through which dominant knowledge frameworks can be challenged and alternative options for change might be explored (Usher *et al*, 1997:138).

In reframing reflexive competence the main challenges appear to be at the level of defining new and different roles for theory, teachers and learners, and the interaction amongst these, in

learning processes that attempt to move beyond dominant forms of knowledge and the social roles and identities which are inscribed in them (see 4.6.3).

8.7 A REFLEXIVE REVIEW OF THE RESEARCH PROCESS

In line with the main theme of reflexivity explored in this research, a reflexive review of the research process emerges as a significant dimension of the process. In chapter three I raise some of the dilemmas, tensions and issues emerging from within the research process in particular those emerging out of my close association with / within the RU/GF course (see 3.3 & 3.4). In concluding this research report, further issues have emerged through the process of exploring more deeply the notion of reflexivity and the development of reflexive competence in the context of the course, which I share in the following section.

One of the most challenging issues emerging within this research process was the difficulty in gaining critical distance from the RU/GF course, given my close association within the course over a number of years (see 3.3). Through the multiple and varied roles that I have played in the course, in general and similarly at the time of undertaking the research in the context of the course various dilemmas, tensions and issues emerged in my straddling the role of participant observer that I share in section 3.4 together with some of the ways in which I attempted to resolve and / or deal with these issues as they arose through the research process. Further, in undertaking the research I was constantly tempted to explore participants' engagement in reflexive processes and the development of reflexive competence within the confines of the existing theorizing and perspectives around the course orientation, aims and processes. Exploring the research question within these theoretical and contextual bounds would have resulted in constraining the reflexive review of course processes since this process would not have allowed an exploration beyond current and existing understandings of and practices related to reflexivity and reflexive competence. In this sense, this might have reflected a process closer to Popkewitz and Brennan's (1998:23) philosophy of consciousness limiting the consideration of outsider perspectives and so a deeper engagement in the reflexive review of the course. What has supported me in moving beyond the bounded consciousness of reflexivity and reflexive competence in the particular social context of the RU/GF course was the theoretical exploration of various perspectives to inform the development of an analytical framework within which to review reflexivity and reflexive competence in relation to course processes (see 1.5.5 & 3.7.2). From this process emerged the significance of the role of formal theory as providing the critical analytical lenses within which to explore the research question. Within this process I was able to engage critically *within* theoretical perspectives in the process of reflexively reviewing practice within the RU/GF rather than imposing these theoretical perspectives on the data collected and analysed. This approach allowed for a process of open-

ended theory building, working within and out of theory into the data and practices within the RU/GF course to gain insight into how course processes support an engagement in reflexive processes and the development of reflexive competence and to highlight potential areas in course processes that could be strengthened to better support participants in reflexively exploring responses to contextual environmental issues and risks (see 3.4.2).

A further issue arising for me out of a reflexive review of the research process relates to the significance of social context in the study and in relation to reflexivity as a longer-term process of ongoing social action and interaction within context (see 5.3.3 & 6.2). The research question focused specifically on participants' engagement within reflexive processes *in* and specifically linked within the RU/GF course. The initial focus on reflexivity was thus confined within the context of the RU/GF course and related course processes (see 1.2). Through the literature review of the study and the process of data analysis it however became evident that an engagement in reflexive processes and the development of reflexive competence cannot be pinned down to a single professional development experience. As such, it became necessary to extend the focus on reflexivity to the multiple social contexts out of which an engagement in reflexive processes emerged and the opportunities provided for in the RU/GF course for the further engagement in reflexive processes and the development of reflexive competence (see 6.2 & 6.3). The process of data analysis therefore focused on reflexivity *out of* social context *and into* the course. This process of analysis drew mainly on structuration theory that highlights the role of social structure in shaping reflexive agency, but extends beyond Giddens' individualistic account of reflexive agency to consider critically how socio-historical factors come to shape social action and interaction (Popkewitz and Brennan, 1998; see also 1.5.1 & 1.5.5). Insights emerging from this focus on the longer-term character of reflexivity out of social context and into the course might suggest that participants' engagement in reflexive processes could potentially extend beyond the context of the course into social context. Reflexivity beyond the context of the RU/GF course was however not a focus of this research but might suggest an interesting focus for further research around reflexivity and reflexive competence *into* social context that might likely provide deeper insight into the duality of social structure and reflexive agency (see 1.5.1, 6.2 & 6.3; see also 8.8).

A third issue emerging from a reflexive review of the research process relates to the case study approach in informing learning programme design in the broad context of the South African competence-based NQF. Broadly the aim of the research study reported in this thesis was to gain insight into the development of reflexive competence in relation to course processes with a view to informing curriculum development processes in the South African competence-based NQF (see 1.2 & 3.2). The dual foci of the research (reflexive competence and course processes) were explored through focusing on multiple embedded case studies at three distinct

levels in the context of the RU/GF course (see 3.5.3). These three levels of case studies, each with its particular focus were useful in generating the rich descriptive data necessary to gain insight into course processes and participants' engagement within reflexive processes (see 1.4 & 3.5.3). One of the strengths emerging from the use of the multiple embedded case study approach was its value in providing focus on the 'specifics' of each case embedded within socio-historical context (see 3.5.2). The case study approach was similarly useful in providing the depth and detail necessary to make specific recommendations for the reorientation of course processes to further support an engagement in reflexive processes and the development of reflexive competence in the context of the RU/GF course. However, in the broader context of course processes that enable an engagement within reflexive processes and the development of reflexive competence in the NQF, generally, and environmental education professional development programmes specifically, the formulation of general recommendations become more of a challenge. In this sense, I have offered insights gained through the research process as 'possible implications' for learning programme design, drawing on the context of the RU/GF course, but recognising its limitations in terms of general recommendations for learning programme design in the broader context of the NQF.

Through undertaking the research in the context of the RU/GF course as a specific case the exploration of an engagement within reflexive processes and the development of reflexive competence was focused specifically on and closely linked to the course orientation, design and course processes within this particular case. This focus on the RU/GF case however reflects only one example of a sweep of course processes that support an engagement within reflexive processes and the development of reflexive competence. As such the RU/GF course is not reflected here as the only form of course design that supports an engagement within reflexive processes and there might very well be other course processes that are similarly seen to support an engagement in reflexive processes and the development of reflexive competence. However, insights gained through a focus on these specifics of the RU/GF course could come to provide useful '... analytical constructs' that might be used as critical lenses for interrogating and potentially informing the reorientation of learning processes in other course contexts that are intended to enable and support an engagement in reflexive processes and the development of reflexive competence (Stevenson, 2003:46).

In exploring participants' engagement in reflexive processes and the development of reflexive competence, the various course processes in the RU/GF course were reviewed as a collective (see 5.4). In the review of these course processes as a collective some of these emerged as particularly significant in supporting a social epistemological framing of reflexivity, for example, the need to critically interrogate the role of theory in learning processes that supports a challenge to dominant knowledge frameworks and consequent social roles and identities. A

review of these course processes as a collective meant a focus on the breadth of course processes that might have limited the depth of exploration relative to each of these. This might point towards further valuable areas for in depth research into specific course processes that support an engagement in reflexive processes and the development of reflexive competence (see 8.8).

Further, at a more technical level the issue of skewed representivity amongst participants in the three tutorial groups emerged as an issue. The initial research plan, taking into account the need for 'fair' representivity in the number of participants per tutorial group, involved eight participants of whom four were linked to the WCTG, two to the ECTG and two to the ITG (see 3.5.3.2). However, due to practical problems with sustaining communication I was unable to develop full case study records with one participant in each of the ECTG and the ITG, leaving only one research participant in each of these groups (*ibid*). Through the process of data analysis strong trends emerged from an analysis of the WCTG participants' case study records, possibly the result of broader representation of participants in this tutorial group (see 6.2.3). For example, less engagement in the deliberative processes offered through the process of assignment writing in drafts (6.2.3). In the case of the two participants in each of the ECTG and ITG I was unable to correlate any aspects of their engagement within reflexive processes with other participants in the same group. For example, other participants in these groups might have reflected different or similar trends in engaging with course processes, though limited representivity in these groups did not allow me to correlate and / or compare aspects of engaging in reflexive processes in these two cases. Recognising the potential constraints of the uneven representivity of participants in the three tutorial groups, I have attempted to provide as much detail on the nature and make-up of tutorials as possible to provide the reader with as much insight as possible with which to interpret the outcomes of the research (see 1.4 & 3.5.3.2).

From this process of reflexive review various areas have emerged for potential further exploration to inform course design that engages reflexivity and enables the development of reflexive competence in support of a transformational orientation to working within the competence-based framework of the NQF which is discussed in the following section.

8.8 RECOMMENDATIONS FOR FURTHER RESEARCH

Through a reflexive review of the research process and insights gained through the research, various areas of research emerge that might be particularly useful in informing curriculum design in environmental education and to enable and support an engagement in reflexive processes and the development of reflexive competence in the NQF. In this sense, I make

specific recommendations for further research in the context of the RU/GF course and, related to specific features discussed above, in the context of learning programme design in the South African NQF competence-based framework.

8.8.1 Research in the context of the RU/GF course

Various areas of research were identified at a meeting of environmental educators to further inform processes of professional development in the RU / GF course (see 5.5.3). I draw on these areas of research and insights gained through the research study to make further recommendations for research in the context of the course.

➤ Tutorial support processes

Prior research in the context of the course highlights the significant role of tutors in supporting learning through the course (see 5.4.3 & 5.5.2). Data reported in this research similarly indicates the critical role of the tutor in supporting participants' ongoing and reflexive deliberations around contextual issues through engagement with / within various course processes, for example, assignment writing, assessment and engaging within theoretical perspectives (see 6.2.3 & 7.7). Considering the challenges with which participants are confronted in critically exploring dominant knowledge frameworks in social contexts where the consequent roles and identities are deeply entrenched appear to require substantial support (see 6.4.7). In the context of the social epistemological framing of reflexive competence offered through this thesis and in light of the critical role that tutors in the course play in supporting learning through the course, it might be useful to explore in depth ways of better supporting tutor professional development around the reflexive orientations, aims, intentions and subsequent course processes in the course (see 7.7).

➤ Assessment

Assessment has been the focus of various research studies undertaken in the context of the course (see 5.5.1). In previous research assessment has been linked to accreditation and in the context of this research it was explored as one of six collective course processes, supporting an engagement in reflexive processes and the development of reflexive competence (see 3.5.2.1, 5.5.1 & 5.4.5; see also 8.7). Considering the significance of assessment as a process of learning in supporting the ongoing and reflexive exploration of new and different ways of thinking and doing beyond 'conventions and norms' dominant in social context, it might be useful to explore assessment as learning as a particular course process supporting and enabling an engagement in reflexive processes. Here I would recommend a specific focus on

assessment processes as supporting the uncovering of boundedness of consciousness and action through reflecting critically on the socio-historical context out of which thought and action emerges and exploring new and different ways of engaging within frameworks of knowledge (and consequent social relations) out of which environmental issues and risks emerge, are understood and managed.

An issue commonly challenged in the context of the RU/GF course is the issue of rigour in assessment that some participants fear might detract from the open-ended framework of learning traditionally associated with the course. Insights gained into assessment in the course through this research reflects that rigour might very well provide for the further 'opening up' of ways of thinking and doing in environmental education and might be an area worth exploring further in the context of the social epistemological framing of reflexivity offered through this thesis. It might be useful to explore ways of introducing further rigour in assessment without compromising the open-ended framework of the course and that better supports the reflexive exploration of ways of responding to contextual environmental issues and risks beyond traditional approaches entrenched within social context.

In all tutorial groups participants negotiate a set of assessment criteria for each assignment also evident in the three regional tutorial case studies in this research (see 5.4.5 & 6.2.3). The social epistemological framing of reflexive competence offered through this study suggests leaving reflexive explorations open to perspectives beyond dominant knowledge frameworks and principles of ordering. This orientation does not allow for the predefining of reflexive competence and requires that reflexive competence be left open-ended to allow for an exploration beyond what is known, by whom, how and why. In this sense the collaborative negotiation of assessment criteria amongst course participants might be a particularly useful way to support an engagement with both knowledge and unawareness and challenge the roles and identities forged within traditional and dominant knowledge frameworks. Further research might be useful in focusing on how participants engage in processes of negotiating assessment criteria and the implications this engagement has for engaging in reflexive learning processes in the course.

➤ **The role of theory**

Section 4.5.4 and 7.4 highlights the significance of theoretical perspectives in reflexive processes to challenge dominant ways of thinking and acting within contextual environmental issues and risks. Section 6.3.4 introduces some of the ways in which participants have engaged theoretical perspectives in the course, and similar to other research projects undertaken in the context of the course, this research has reflected some of the tensions

emerging as participants engage within theoretical perspectives in exploring ways of thinking about and acting within environmental issues and risks (see 6.3.4 & 7.4). In light of these emerging insights and given the critical role of theory in engaging in reflexive processes it might be useful to explore in depth ways in which participants could be better supported to engage theoretical perspectives introduced through learning as they explore reflexive educational responses to environmental issues and risks in context. It might similarly be useful to explore critically the role of theory in engaging conflicting rationalities in the reflexive exploration of new and different ways of approaching environmental education.

The focus of most past research processes in the context of the course has been on how participants engage with theoretical perspectives in the context of the course. In exploring better ways of supporting participants in engaging theory it might be useful to consider critically the role that theory plays in the course, how participants are introduced to and encouraged to use theoretical perspectives and the implications for engaging in, and supporting (or possibly constraining) reflexive processes of change.

➤ **Reflexivity into social context**

This research has focused specifically on reflexivity in the context of the course processes in the RU/GF course. However, out of this analysis socio-historical context emerged as particularly significant in shaping an engagement in reflexive processes offered through the course. Similarly, out of the analysis of an engagement in reflexive process, reflexivity emerges as a longer-term ongoing process of change and I would suspect that this ongoing process possibly extends beyond the context of the course, though this research did not explore reflexivity beyond the RU/GF course. In the context of the critical need for environmental education as social processes of change to address the increasing scale of socio-ecological issues and risks in global society, it might be useful to explore reflexivity and reflexive competence beyond the context of the course as these processes 'play out' *into and in* social context.

8.8.2 Research in the NQF competence-based framework

In addition to the recommendations made above in 8.8.1 (some of which might be useful in further exploring the development of reflexive competence in the competence-based NQF), further recommendations are made for the exploration of reflexive competence and learning programme development in the specific context of the South African competence-based framework.

➤ **Integrated assessment**

In the context of the hybrid character of the NQF, integrated assessment becomes a significant course process in avoiding the dominance of performance-based orientations to teaching and learning (see 7.5 & 8.4.5). Further, integrated assessment becomes an important feature in fostering and enabling an integrated approach to competence development in the NQF. As such, it might be useful to explore the notion of integrated assessment in more detail to explore more specifically its role and relevance in supporting the development of applied competence and change in the context of transformation in South Africa. This research would be of value to the further development of the RU/GF course processes as well.

➤ **The role of theory in enabling reflexive practice**

In the context of applied competence in the South African competence-based framework, the role of theory is highlighted as a significant aspect in enabling the development of reflexive competence, as reframed in section 4.6.3. The role of theory becomes particularly significant in a context where the 'authority' of theory appears to be continuously accepted and legitimised (see 7.4 & 8.6). In this sense, it might be useful to explore critically the role of theory in learning processes that enable processes of challenging dominant knowledge frameworks and social roles and identities inscribed in these (see 8.8.1).

➤ **Reflexivity and social change**

The intention of the South African competence-based NQF is to enable socio-economic change in the period following the demise of the national party government and the consequent disparate social relations that continue to plague South African society. Reflexivity as processes of social change and reflexive competence supporting these processes of change thus becomes a critical consideration in supporting the transformative agenda underpinning the development and implementation of the NQF. It might be useful in the South African context of transformation to explore in more depth reflexivity and reflexive competence out of social context into learning processes and further into social context and processes of change. This might provide for deeper insight into the interrelationship between reflexive agency and structure. It might similarly be useful to explore the notion of collective agency in more depth so as to challenge individualistic approaches to engaging in change.

8.8.3 A social epistemological challenge

At a more theoretical level, this research has pointed to the potential of researching in more depth the significance of Popkewitz's theory of a social epistemology, and Beck's theory of knowledge and unawareness in the context of the NQF and the implications of these perspectives for standards-based reform. Discussions in this research have pointed out that a concern for socio-historical context and open-ended approaches to learning programme development would appear valuable and critical in 'opening up' differing ways of knowing and challenging existing forms of reasoning and principles of ordering. Further research, undertaken in the RU/GF course, or in the context of the NQF policy framework more broadly, may assist in reducing the inherent potential of the NQF to become a form of self-regulating 'governance' of individuals, reflecting notions of 'governmentality' in adult education (see 4.3.2). This may also assist with further clarification of the hybrid nature of the South African NQF and enable course developers to 'cut new pathways' in designing transformative learning programmes in the spirit of the redress and transformation intentions of the NQF.

8.9 CONCLUDING REMARKS

In attempting to integrate the intentions of the NQF (and particularly the intentions of developing applied and reflexive competence) into the existing design of the RU/GF course various revisions were brought into the course over the years in an attempt to better support participants to respond to environmental issues and risks in context (see 5.5.2 & 7.1). What emerges from the data in this research is that though the course intends to support participants' engagement within reflexive processes and enable the development of reflexive competence, certain course processes and features show areas that could be strengthened (see chapter 7). This could potentially be the result of insufficient clarity and depth of perspectives on reflexive competence hence the possible constraints in what would appear (with hindsight) to be the 'superficial' reorientation of course processes that were originally aimed at enabling the development of critically reflective practitioners (see 7.2). The research reported in this thesis, in specifically focusing on an engagement within reflexive processes and reflexive competence attempted to gain deeper insight into the relationship between reflexivity, reflexive competence and course processes in the RU/GF course. As such deeper insight was gained into reflexivity as social processes of change and reflexive competence as evidence of engaging within these processes of change. Recommendations made attempts to support the strengthening of the reflexive orientation of the course and consequent course processes and to strengthen the support for change in context.

The issue of attempting to realign the RU/GF course within the NQF, and the potential for reorienting some of the course processes and features emerging as a possible result of the need for greater clarity and depth of understanding of reflexivity and reflexive competence might become an important issue for other course developers attempting to realign courses within the NQF competence-based framework. Reorienting courses without clear perspectives on reflexivity and reflexive competence could result in 'superficial' changes being brought to bear on course processes and in this way could limit an engagement in reflexive processes and the development of reflexive competence amongst learners undertaking professional development in the context of the South African competence-based NQF. This could possibly lead to a paradoxical reduction in the potential of the NQF to foster transformation in South African society. As such, this thesis offers a reinterpretation of reflexive competence to provide course developers with some perspectives on some of the key features and issues that may underpin the notion of reflexive competence. As such, it is not only course processes that need to be considered in the development of learning programmes but more importantly the orientation underpinning these course processes.

Change is a significant experience in the lives of all South Africans in the current context of transformation in the country. The development of the competence-based NQF was both in response to change in a global context and similarly in attempting to foster change in a society beleaguered by unequal social formations. In this sense, the defining of reflexive competence appears to be specifically linked to developing the capacity to engage *critically within* processes of change. In this thesis change is conceived of as disrupting existent and dominant knowledge frameworks (forms of reasoning) and consequent principles of ordering and as such responds to the need to challenge unequal social formations in South African society. Reflexive competence can then be seen as the capacity to critically explore and engage with / within differing or 'other' forms of knowing and principles of ordering to explore options for change. As such *change* becomes a key feature or orientation underpinning course processes that seek to engage within reflexive processes and develop reflexive competence.

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**ENABLING REFLEXIVITY AND THE
DEVELOPMENT OF REFLEXIVE COMPETENCE
WITHIN COURSE PROCESSES:**

**A CASE STUDY OF AN ENVIRONMENTAL
EDUCATION PROFESSIONAL DEVELOPMENT
COURSE**

VOLUME TWO

CASE STUDY RECORD

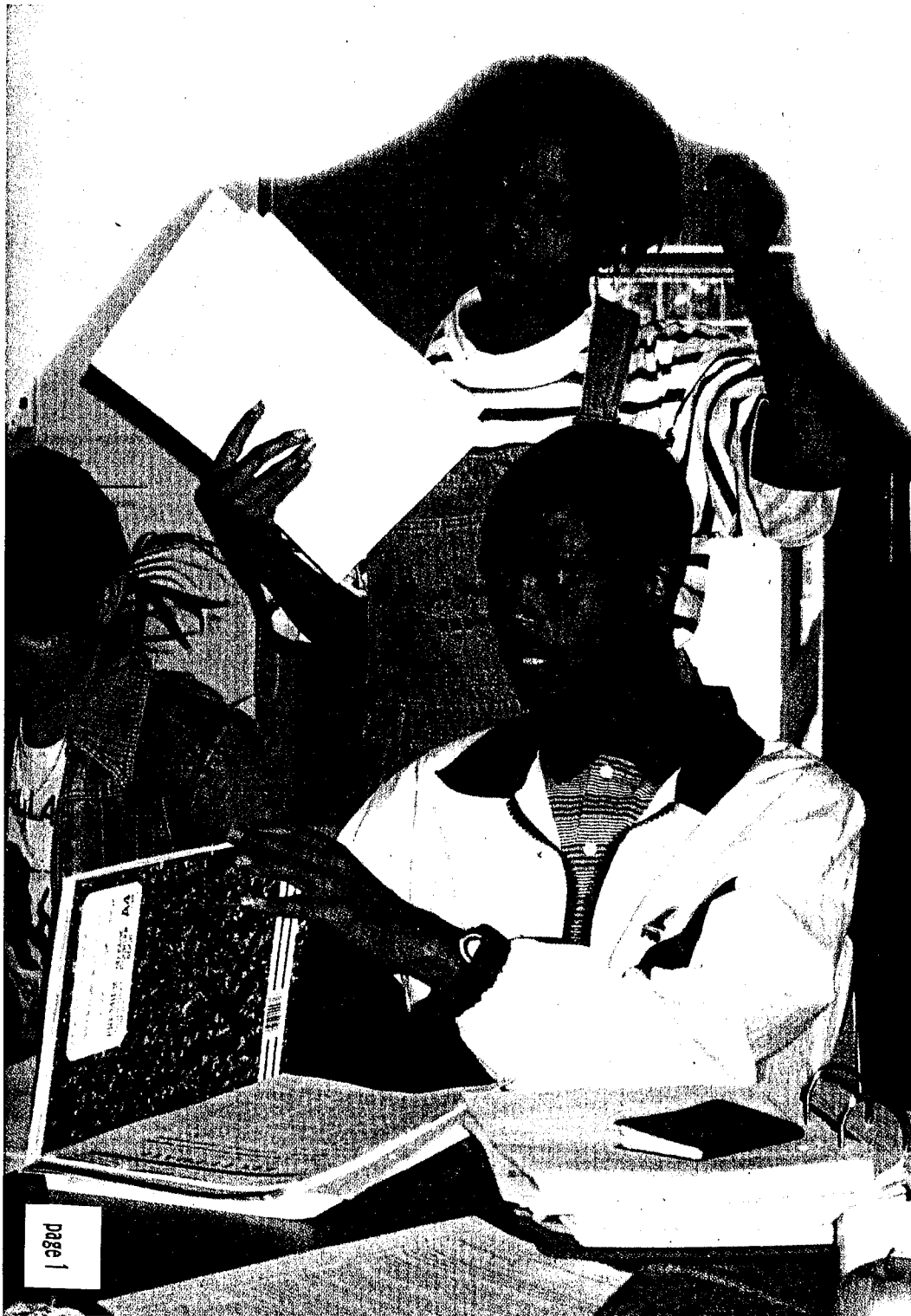
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APPENDIX ONE

SPECIAL TEN YEAR REPORT: GOLD FIELDS
PARTICIPATORY COURSES AND THE GOLD FIELDS
ENVIRONMENTAL EDUCATION SERVICE CENTRE



Special 10 Year Report

1992 - 2002



GOLD FIELDS

Gold Fields Participatory Courses
& Gold Fields Environmental Education
Service Centre



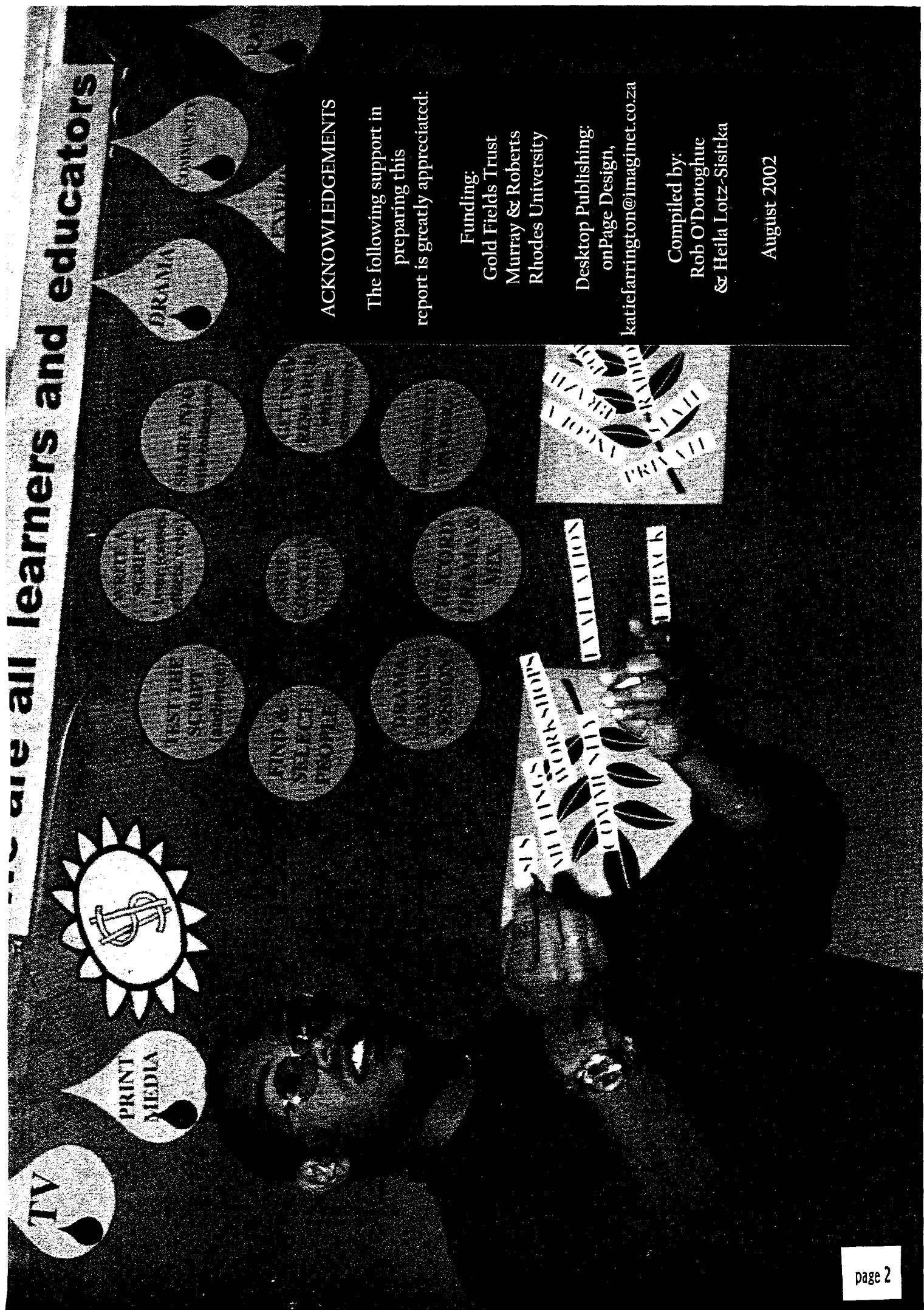
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...are all learners and educators



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Top Left: Course participants visit a Gold Fields mine during the 1999 Industry course.

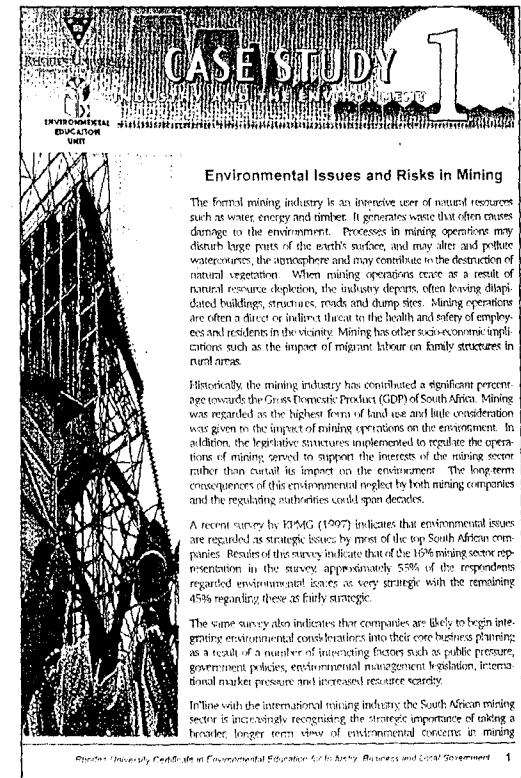


Top Right: Ginny Strang, Paul Deane-Williams and Keneiloe Mohafa from Gold Fields with Jim Taylor from WESSA in 1997.



Left: Eureka Janse van Rensburg with Mike Tagg, chairman of the Gold Fields Foundation and Willie Jacobz, also from Gold Fields, who was very instrumental in establishing the course.

Right: Industry case study materials developed in partnership with Gold Fields.



I. Introductory Overview

a developing story

The story of a decade of developing courses is told here as part of a process of review and reflection. It reviews the Gold Fields participatory courses, and some of the Services offered from the Gold Fields Environmental Education Service Centre, located within the Rhodes University Environmental Education Unit.

In 1992 Gold Fields supported the first Gold Fields participatory course in environmental education. After the successful development and expansion of this initiative, the Rhodes University Gold Fields Environmental Education Service Centre was established in 1997 to complement the Murray & Roberts Chair of Environmental Education at Rhodes University. The centre set out to support the expanding role of the Gold Fields participatory course. Furthering these workplace-based professional development courses in ways that resource the developing field of environmental education became a strong focus of the centre's work.

This review reveals some of the characterising features of the Gold Fields participatory courses. Probing the participatory start up of the course, the story reveals the significance of this orientation, and the workplace-based focus. With the widening of the courses to cover school, community, business and industry contexts has come increasing professional environmental education practice across fields such as conservation, rural development, industry and formal education.

In 2001 Gold Fields committed further funding for these programmes for a five year period. With this has come the need to review, consolidate and strengthen the features of the courses to enable further development of the work started in 1992. The

Gold Fields course has been described as 'a course in transformation'. This refers to the ongoing review of the course processes in relation to the changing landscape of needs and challenges in environmental work in South and southern Africa.

This review aims to consolidate and re-orient the courses in the current landscape, to:

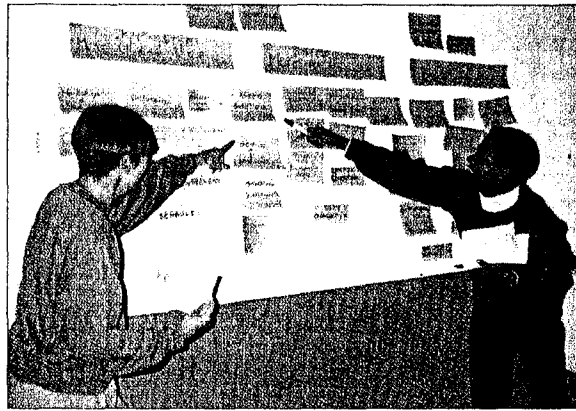
- ♦ enhance the professional services offered by environmental education centres around the country;
- ♦ align the courses within the hybrid nature of the National Qualifications Framework in South Africa; and
- ♦ support the expanding co-operative development of courses in ways that respond to the environmental challenges across the SADC region.

The review affirms the responsive, participatory and workplace-based nature of the professional support of course participants in the Gold Fields courses. Many course participants have become tutors, course co-ordinators and leaders in environmental education activities across the southern African region. They continue to work within the 'learning network' established by the Gold Fields courses in 1992.





Above Left: Tutors working together on course issues.



Second from Left: Learning through working together on assignments.

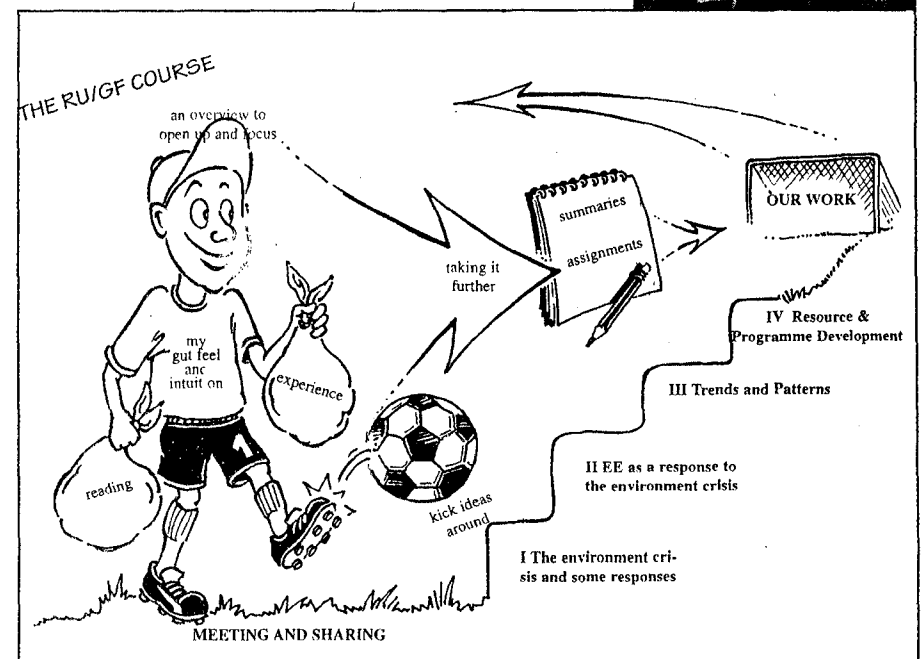


Second from Right: Developing and working with resource materials.



Above Right: John Roff receives his certificate from Doc Shongwe.

Below from Left to Right: Professional Development culminating in a qualification:
Dr Eureka Jans van Rensburg and Dr Heila Sisitka hand out certificates.



The football game metaphor

II. A Participatory Start-up

responding to professional needs in Gold Fields centres

During the 1980s Gold Fields responded to requests for support to build environmental education centres. In the early 1990s Gold Fields supported an annual meeting to encourage a professional sharing amongst the individuals and agencies managing environmental education centres. Participants began to look forward to these as useful opportunities to meet and to share ideas. These annual meetings, were, however, not sufficient to meet the professional development needs of environmental education centre staff. In 1992 Eureka Janse van Rensburg of the Murray & Roberts Chair of Environmental Education at Rhodes University, and Doctor Shongwe, then a centre manager in the Pilanesberg, suggested that the budget for the annual Gold Fields capacity building meeting for centres was re-oriented into a course.

The Environmental Education Association of Southern Africa (EEASA) was proposed as a useful structure within which to expand the annual meeting into a Gold Fields course in environmental education. At that time, environmental education was a developing field, characterised by diverse and competing ideas that were tenuously held together by a shared concern for environmental matters. These processes and tensions shaped a participatory ethos to the start up of the course. This ethos developed as a characterising feature of the open-access course. It became known as the Gold Fields participatory course in Environmental Education.

The development of the course was undertaken with the support of the Rhodes University Murray & Roberts Chair, The Wildlife Society of South Africa, Stellenbosch University, the WWF and the then Natal Parks Board and

Bophutatswana National Parks Board which were prominent amongst many conservation and environmental agencies that lent early support to the initiative.

The first course participants were simply those in the field with a felt need to work on better steering ideas to enhance workplace capacity. Their task was to initiate and manage environmental education activities, and they found support for this task in the context of the course. In the first year participants worked together as students and there was no formal accreditation other than a Rhodes University certificate of participation.

The course framework was built around two metaphors:

- ♦ Ascending steps reflecting the environment crisis and environmental education as a developing response; and
- ♦ A football game where participants pass the ball around developing skills to play the game into own work context.

In the second year the course framework was revised and four 'core texts' with associated readings were developed. The second course retained the participatory ethos involving all participants in searching for, and bringing in readings to clarify a conceptual framework. The need for a more formal acknowledgement of professional growth led to a formalising of the certification process, and in 1996 Rhodes University offered course participants a Rhodes University Certificate in Environmental Education for evidence of professional growth in the Gold Fields participatory course.

III. Students into Tutors

further professional development opportunities

In the early days of the course some course participants were both student and tutor ('stutors') constructing and learning on the developing programme with fellow participants. In successive years many participants have come back to do the course a second time. In doing so they have often taken on the role of tutors, thus becoming involved in another process of professional development. This has involved the clarification of environmental education processes and the supporting and mediating of the learning of others. To support this process a manual for tutors was developed and an orientating course for tutors was provided at the beginning of successive years.

Some vignettes of case experiences:

- ♦ Mike Ward started his career in environmental education by doing a Gold Fields course, after which he tutored for 3 years. He then became a SADC course tutor, and the training co-ordinator and project manager for the SADC Regional Environmental Education Centre. Mike has supported course developments in Angola, Swaziland, Zambia and Sweden.
- ♦ Glenda Raven did an M.Ed in Environmental Education, and then participated in the Gold Fields course. She became a tutor and course co-ordinator for the industry courses, and through drawing on her and others experience of tutoring, she developed a booklet for tutors. She also undertook research on assessment and accreditation to explore the changing landscape of adult education in relation to the Gold Fields course processes. This opened up a question for further Ph.D research on reflexive and applied competence in the context of the National Qualifications Framework, in which she developed case

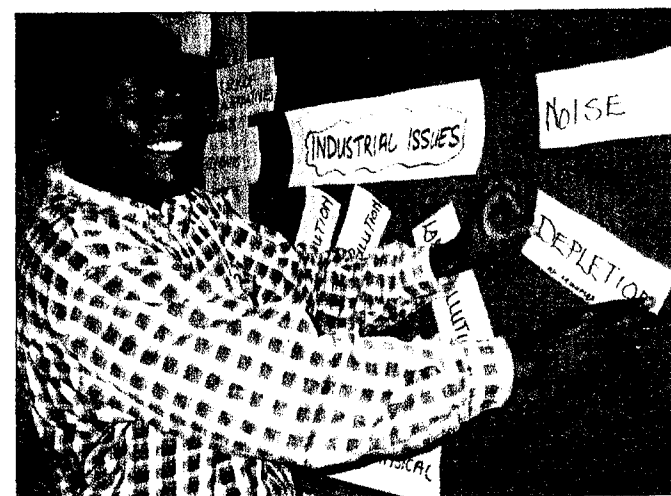
studies on 6 Gold Fields course participants.

- ♦ Rob O'Donoghue participated in the first Gold Fields course as a 'stutor'. He has contributed to the development of the course materials and key ideas that inform the course. He tutored on successive courses in KZN Wildlife, and contributed to the adaptation of the course for SA National Parks. He is now Director of the Gold Fields Environmental Education Service Centre and is currently working on supporting the SADC course development network and professional development activities in environmental education centres.
- ♦ Lynette Masuku completed the Rhodes University/WWF International certificate course. She tutored on the Gold Fields course, and adapted the course framework for SA National Parks. She tutored on that course and is now a Director in the Department of Arts, Culture, Science and Technology.
- ♦ Soul Shava did the Gold Fields course in Zimbabwe, after which he completed an M.Ed course at Rhodes. He tutored on the Zimbabwe course for a number of years, and is now co-ordinating the course with Leigh Price.

The pattern of students undertaking further professional development work as tutors has progressed another step. Many tutors have become involved as course co-ordinators and are developing courses that respond to a growing field of education towards more sustainable futures. The challenge of enabling work-based professional development requires the skills of responsive course development in differing contexts. The cooperative skills of enabling environmental learning processes in and into workplace contexts appears to be key to fostering social change towards better environmental management and more sustainable life style choices.



Top Left: Tutor's workshop 1999, with Alison Kelly, course co-ordinator.

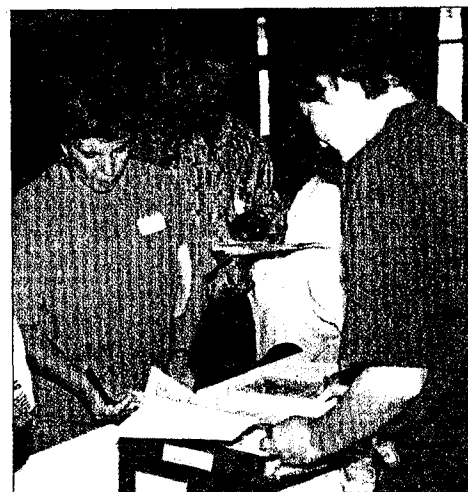


Top Right: Autman Tembo, course participant in 1997, becomes course co-ordinator in Malawi in 2000.

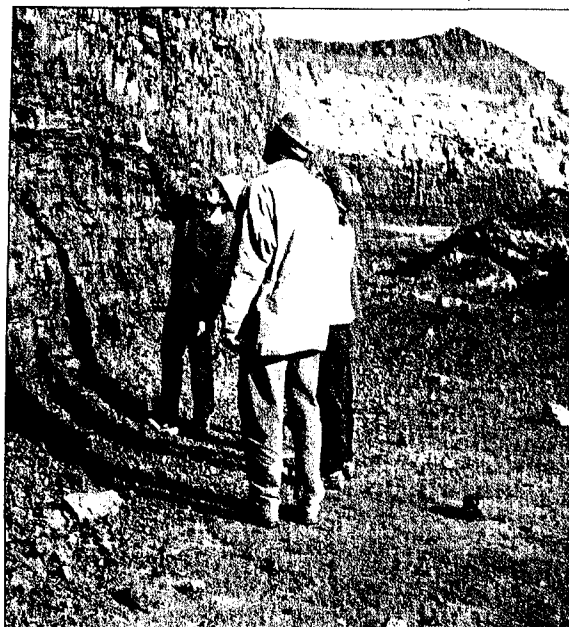
Bottom Left: Justin Mukosa, Mike Ward and Tsepo Mokuu, previous course participants, tutor and co-ordinate the SADC course.



Bottom Centre: Tutors review course files at the end of the course.



Bottom Right: Vivian Molose co-ordinates the Gauteng teachers course.



Top Far Left: Industry course participants investigate environmental issues in Assignment 2.

Left: Enviro Picture Building at a national workshop in 1998.

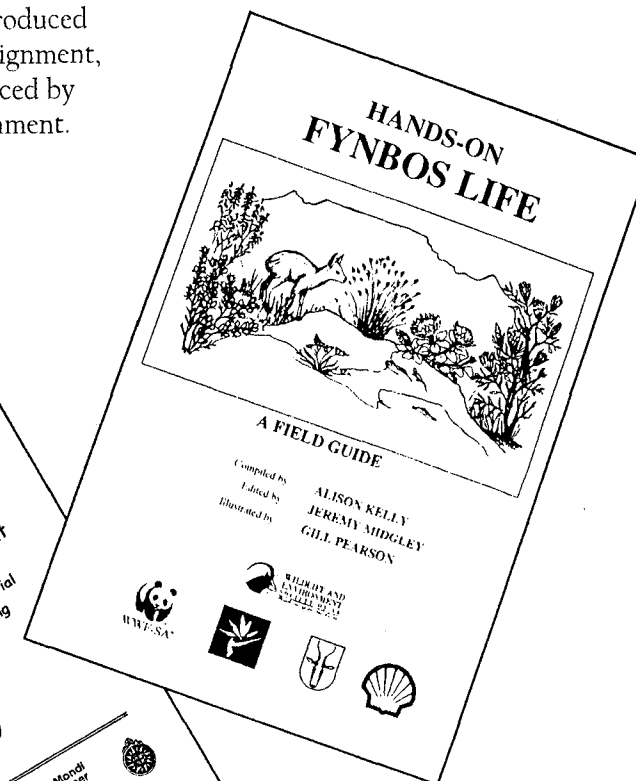
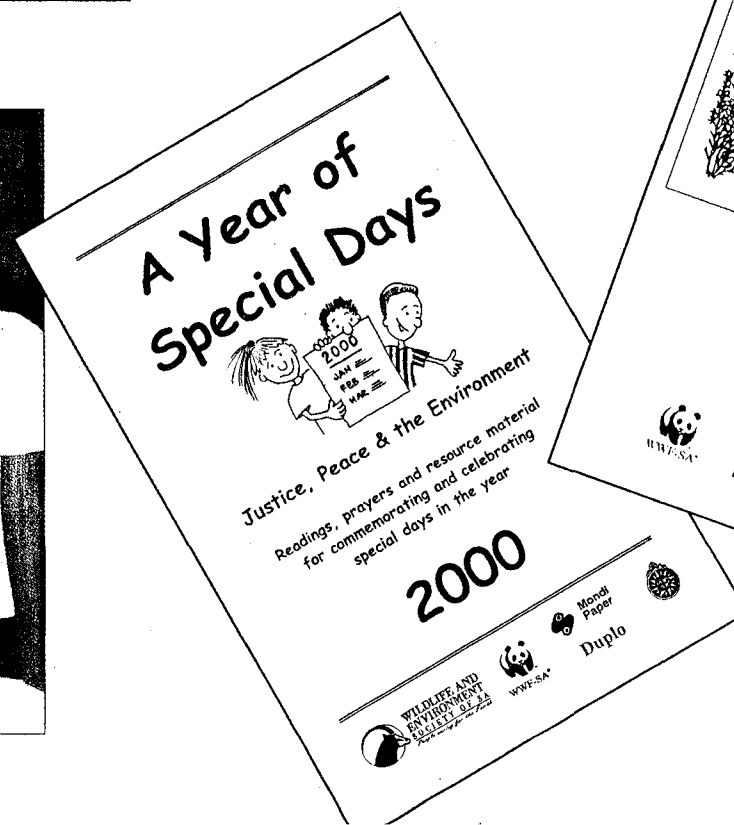


Bottom Left: Tutors and students review final assignments in 2000.

Top Right: Debbie develops a game for young learners as her final assignment.



Below: *A Year of Special Days*, produced by Kate Davies as her final assignment, and, *Hands on Fynbos Life* produced by Alison Kelly as her final assignment.



IV. A Workplace-based Focus

enhancing relevance and carry-over in job contexts

Gold Fields participatory courses have been characterised by workplace-based assignments. This approach brings theory into practice in the world of work for the narrating and clarifying of better practice. The practical and on-the-job focus has meant that through their assignments, participants have produced new resource materials and other tools for the job (eg. policy documents, curriculum plans, learning programmes). These hands-on, practical outputs have, in turn, contributed to the developing field of environmental education. Many have met the challenge of producing contextually relevant ideas and materials that have been used and adapted by others.

Some notable examples are:

- ♦ Kate Davies developed a booklet called 'A Year of Special Days' in 1997 as her final assignment. This booklet has been integrated within the School Environmental Policy Pack and has been updated for successive years since 1997. It has also been adapted for other countries, for example Angola and Kenya, and was used by the Ministry of Education in 2000 to encourage schools to focus on 'EnviroDays'.
- ♦ The Enviro Picture Building Game was initially redeveloped with HLH by Rob O'Donoghue on the 1995 course. This resource is used as an important teaching resource in the first course session. It was redeveloped by Connie Botma for Namibian landscapes in 1996.
- ♦ In 1996 Alison Kelly developed a booklet called 'Hands-on Fynbos'. This booklet was designed to expand the Share-Net Hands on Series. It is used in the context of Western Cape biodiversity projects.

- ♦ Stephen Mughivi was the first course participant to develop a policy. In 1997 he developed an action research policy for community involvement in conservation areas, in which the policy making process was also an educational process. This policy is still being used by his department.
- ♦ In 1999 June Lombard developed qualifications for the waste management sector as her assignment in the industry course. She has taken this work further and is using it as a basis for establishing waste management qualifications for the industry. She has also used it in the context of waste management qualifications in Botswana.

A semi-distance format with three national workshops and provincial tutorials in support of workplace-based activities has led to the establishment of a developing body of professionals working together. In her research on the course Glenda Raven has referred to this as 'a learning network'. The significance of a participatory course with a workplace-based focus and a growing network of more competent professionals with better tools for the job can be difficult to quantify. The importance of these features of the course came to mind when an applicant for an over subscribed course stated, "If I am not accepted for this course, I will wait for another year. People who do the Rhodes Gold Fields courses can do things. People doing other courses just learn. I want to learn to do practical environmental work in my community."

V. Formalising Professional Development Courses

towards accredited professional development

By 1996 Gold Fields course materials had been developed and refined for the participatory course in environmental education. The course design and materials became the foundation for an expanding network of courses. The first adaptation of the course took place in Zanzibar, and then in Zimbabwe. The course was also adapted for conservation contexts in 1995 within the Natal Parks Board. It was adapted for teachers in Gauteng and the Eastern Cape, supported by Gold Fields. Gold Fields were also interested in developing a similar course for industry. In 1997 the Gold Fields Environmental Education Service Centre at Rhodes University was established to support this expansion. Heila Sisitka, the first Director of the Gold Fields Environmental Education Service Centre, gave attention to refining the existing course materials and supporting other initiatives in differing contexts. A notable example of her work was the development of an industry course, in response to the environmental challenges in business and industry.

All of this work was undertaken with partners and with continuing research to clarify processes of professional development and environmental learning. Following the first RU/MWF International Certificate course, based on the Gold Fields course materials and orientation, a partnership was established with the SADC Regional Environmental Education Programme, a donor-funded project implemented by the Wildlife and Environment Society of South Africa. This led to the Rhodes University/SADC 'two month course' for participants in the SADC region. This course fuelled requests for regional support in the adaptive development of Gold Fields courses in other African countries such as Angola, Swaziland, Namibia, Zambia, Zimbabwe

and Malawi. The industry courses also attracted interest in the region, and have been adapted in Malawi and Zimbabwe.

A further focus of the Gold Fields Environmental Education Service Centre work between 1997 and 2002 was the alignment of the Gold Fields course within the changing landscape of professional development in South Africa. In 1995 the government introduced a National Qualifications Framework to transform qualifications and enable access and flexibility in the delivery of accredited education and training programmes. These developments were reflective of international trends towards life-long learning and workplace-based professional development. Glenda Raven and Heila Sisitka researched the implications of the competency-based National Qualifications Framework. This involved in-depth engagement with accreditation issues associated with the open-entry, open-exit Gold Fields courses. Key issues that were opened up in this research included insights into the hybrid nature of the NQF, the close alignment of assessment and learning processes, and limitations in the notion of reflexive competence as defined in the national frameworks, when applied to environmental learning. This research has allowed work within the developing national frameworks, without being blind to limitations that these might place on environmental learning. The Gold Fields course can still be offered as an open-entry, open exit professional development course, with accreditation options. This allows the course to continue to have an orientating and introductory role in diverse fields, while enabling access to career paths in differing forms of environmental education.

Main Photo: Industry course participants at a Gold Fields Centre.

Inserts, Top Left: Minister Asmal at the opening of the Gold Fields Environmental Education Service Centre.

Top Right: Minister Jordan, Dr Lotz, Dr Janse van Rensburg, Mr Tagg and Mr White from Gold Fields, at the opening of the Gold Fields Environmental Education Service Centre.

Middle: Glenda Raven undertakes accreditation research.

Bottom: Industry courses are supported by Gold Fields and Murray & Roberts.

GOLD FIELDS CENTRE





Top: Focus group discussions with participants during 1997 national course workshop in Pretoria.

Above: Analysing the data: Kim and Eureka at Linda Paxton's farmstead in the Karoo in 1997.

Right: Course participants in 1994, 1996 and 2000.

**GOLD FIELDS PARTICIPATORY COURSE
IN ENVIRONMENTAL EDUCATION:
AN EVALUATION IN PROCESS**



EUREKA JANSE VAN RENSBURG & KIM LE ROUX

Left: Cover of the 1998 Evaluation Report.

Below: Research interviews: Kim talks to Mlungisi Nzimande.



VI. A Critical Review

clarification of course features and challenges

An overview of participants and a developing diversity of courses (1992 - 2002)			
Name of course (abbreviated)	When offered	Certificates awarded	No of students currently enrolled
South African Gold Fields participatory course	1992 onwards	338	43
WWF / SADC / RU International certificate course	1995, 1997 onwards	87	14
RU/Gold Fields Zanzibar course	1995	19	No further funding
Rhodes - Speciss Zimbabwe courses (national course & industry course)	1996 onwards	145	12
RU / KZN Wildlife courses & SA National Parks course	1995, 2000, 2002	55	Course recently completed
RU / Gold Fields Eastern Cape & Gauteng Teachers courses	1997, 1998	89	Course taken further in context of Advanced Certificate in EE
RU/Gold Fields courses for industry (SA, Malawi)	1999, 2000	28	Course potentially partnered by NOSA - needs re-development
RU/Gold Fields courses in Swaziland	2000, 2001	27	45
RU/Gold Fields course in Namibia	2002		34 - Developed as part of the Namibian SEEN project
TOTAL		788	148

In 1997 / 1998 Eureka Janse van Rensburg and Kim le Roux undertook an evaluation of the Gold Fields course. Their research was centred on clarifying key aspects of the course orientation. They gave particular attention to professional development of course participants. The research process also examined the expansion and diversification of the course for differing needs and contexts (reflected in the table on the left). The study opened up the issue of formal accreditation as an issue, as reported above. This study contributed a depth of insight into the significance of the participatory orientation to the course. These resonated with the latest insights into professional development and adult learning. It revealed that participation is a more engaging and deliberate process than simply involving people in participatory activity.

With ongoing critical review and research in the context of the courses, comes the challenge of updating and re-orienting the courses on an ongoing basis. This challenge was increased by the popularising of the courses, and the need to deliberate the course processes into diverse contexts with participants, tutors and co-ordinators as the courses expanded to industry, teacher education, conservation and regional contexts. It was not simply a matter of adopting or adapting, but contextualising the courses appropriately without subverting the open-ended challenges of reflexive clarification in the workplace. This feature had been a cornerstone of the Gold Fields courses from the outset. The research and evaluation allowed an ongoing clarification of this feature to enhance environmental learning.

VII. Responding to Widening Needs

research-based course development

From the earliest participatory courses, the interplay between course development and research allowed for ongoing critical review and deepening of insights into professional development issues in environmental learning. This informed the responses to diverse requests for Gold Fields type courses in differing contexts and fields. The partnership established between the Murray & Roberts Chair of Environmental Education (research) and the Gold Fields Environmental Education Service Centre (course development) has enhanced and expanded the 'learning network' associated with the Gold Fields courses.

Some examples of the interplay between course development and research include:

- ♦ The development of the Zanzibar course in 1995 was researched by course co-ordinator Pippa Heylings. Her research documents early attempts at accrediting the course within a national framework, and the potential 'distances' between theory and practice, and the 'distance' created by language. She makes the point that exploring other languages in professional development can open up new understandings.
- ♦ The adaptation of the course for teachers in the Eastern Cape and Gauteng was researched by Vivian Molose in 1998. She noted that while course materials 'are not the course', they are not always used to full potential, both in contact sessions and by participants themselves. She recommended a more explicit use of course materials to support the course orientation. The teachers course materials, developed by Ursula van Harmelen, have been used to inform other teacher education programmes.
- ♦ Development of the first industry course in South Africa was researched by

Nicola Jenkin in 1999. Her research focussed on interactions and meaning making in the context of the different course processes. Leigh Price, co-ordinator of the Zimbabwe courses is researching environmental discourses used in industry environmental education and training contexts. This research will no doubt draw attention to how environmental issues, risks and solutions are 'presented' and 'described' in training courses.

- ♦ The development of the courses in conservation contexts has been researched by Lawrence Sisitka, Kevin Moore and Rob O'Donoghue, highlighting the importance of engaging not only with the professional needs of course participants, but also the institutional cultures, processes and constraints within which they work.
- ♦ The tension between the open-ended, responsive nature of the course, and the structural-functionalist frameworks required for formal assessment and accreditation are being researched by Glenda Raven, to explore ways in which assessment, accreditation and course processes can remain open-ended and reflexive enough to respond to the uncertainty of environmental risk.

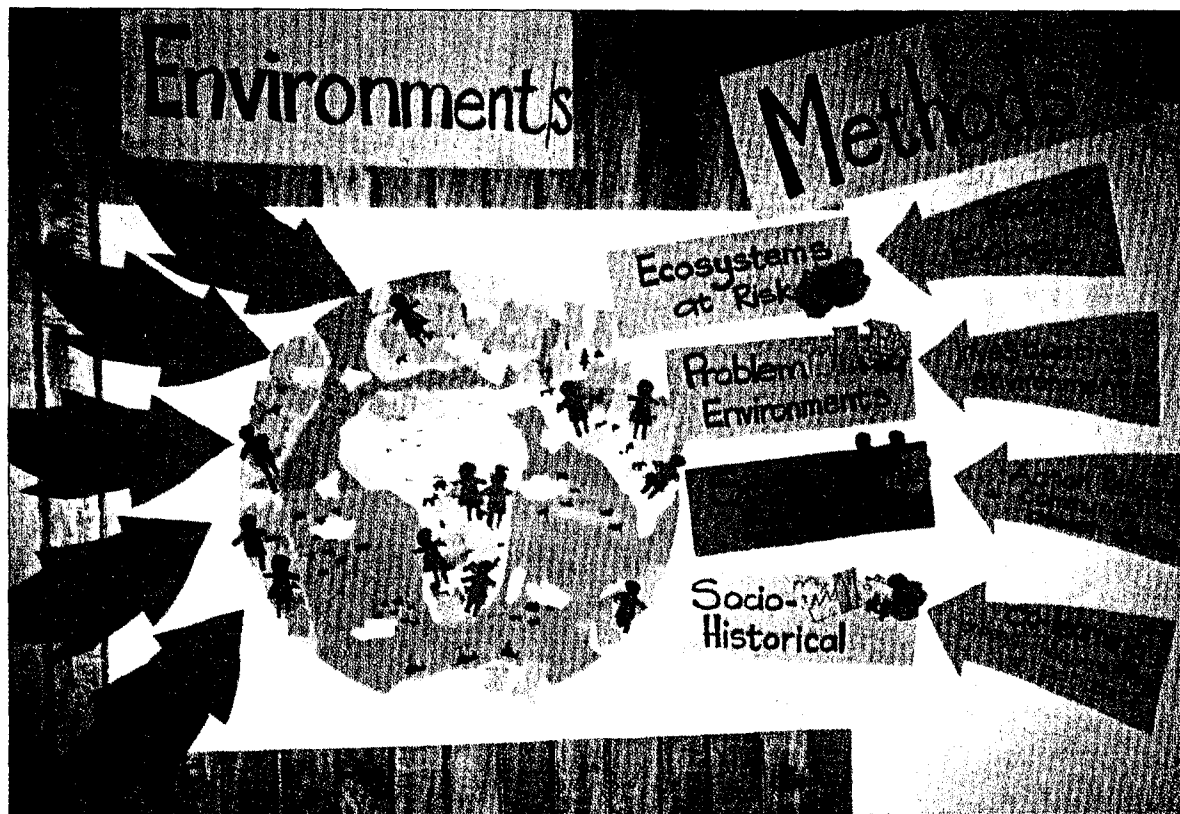
Findings from the research projects have enabled enhanced responses to widening needs that were given expression in different contexts. These included paying greater attention to language in learning, using materials more effectively, supporting meaning making through different course processes and becoming aware of how discourses construct courses in particular ways. The needs also included a greater sensitivity to the institutional challenges that adult learners face, in their day to day work, and as they develop professionally and seek accreditation along particular career paths.



Main photo: Rob O'Donoghue (Gold Fields Service Centre) & Heila Sisitka (Murray & Roberts Chair) discuss Gold Fields courses and research.

Inserts:
Above: Murray & Roberts celebrates ten years of partnership with Gold Fields and Rhodes University. Lesley Lambert and Mercia Mseremule are seen here with the Vice Chancellor, Dr David Woods.

Below: Nicola Jenkins (Research assistant to the Murray & Roberts Chair), researches the first industry course.



Above: Gold Fields courses explore environments and methods in diverse contexts.

Above Right: Justin Lupele interacts with a group of rural children in the 2000 Rhodes University SADC course.

Right: Ian McPherson & Emile van Druten from Telkom receive their industry course certificates.

Left: Mumsi Gumede develops materials for local government and presents them in the 1998 RU/SADC course.



VIII. Courses for Diverse Career Paths

a widening profession

The Gold Fields courses have proved to be an important capacity building initiative in support of environmental learning towards a more sustainable future. A developing suite of materials are providing a useful introduction to a career path in environmental education, particularly with the recent expansion of the professional field of environmental education. These include a range of institutional contexts in which many of the course participants work, for example:

♦ **Natural areas**

Paula Morrison did the Gold Fields course in 1996. She subsequently completed a M.Ed in Environmental Education and has been able to apply her professional competence in managing the community conservation activities in Hhluwe Umfolozi Park in Ezemvelo KZN Wildlife. She developed and conducted a Gold Fields/WWF professional development course for her staff in 2001.

♦ **Industry**

Autman Tembo completed the RU/WWF International Course in 1997. He subsequently completed a M.Sc in Environmental Management in Sweden, and co-ordinated the RU/SADC/Malawi industry course in 2001, in his role as Director of Occupational Health and Safety in Malawi. He has contributed to the SA industry course, and has supported industry course deliberations with course developers from Zimbabwe and Swaziland.

♦ **Formal education**

Vivian Molose did the 1996 Eastern Cape teachers course and co-ordinated the Gauteng teachers course in 1997 and 1998. In her M.Ed research she evaluated the use of materials in the teachers courses, and has continued to provide professional services to teachers and teacher educators. She is applying her professional competence in the context of the National Environmental Education Programme.

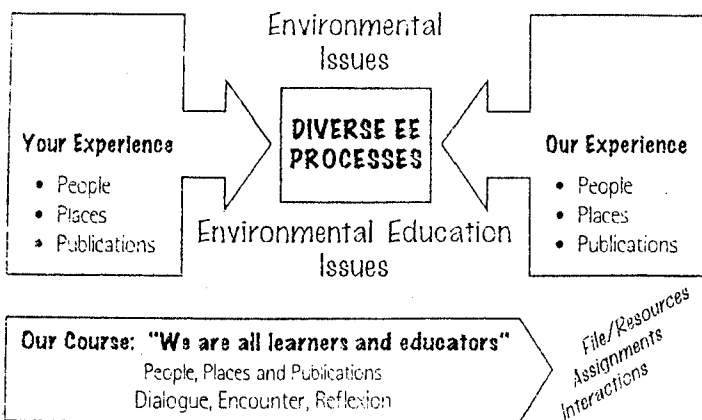
♦ **Environmental Justice**

Mba Manqele did the Gold Fields course in 1994, while working for the Natal Parks Board. During that time she started research on Indigenous Knowledge and environmental learning. She holds a leadership position in the Environmental Justice Networking Forum, where she is involved in environmental activism and policy development. She is currently enrolled for a M.Ed in Environmental Education.

♦ **Regional contributions**

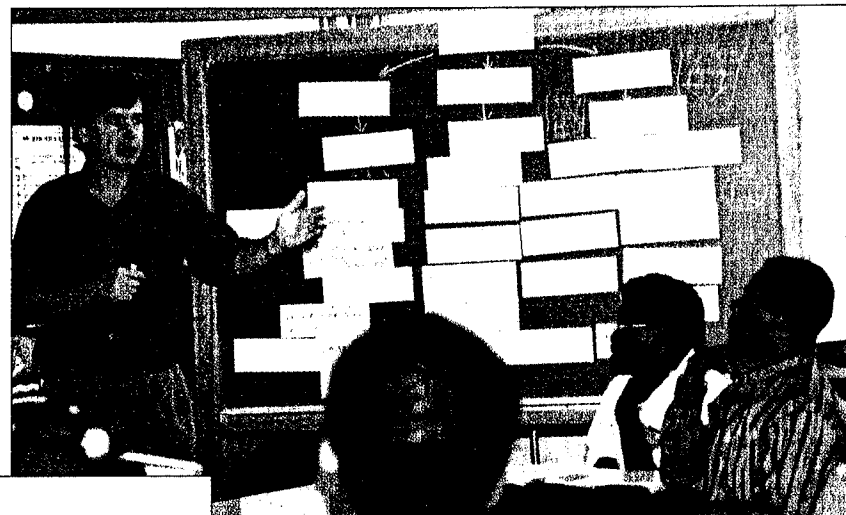
Justin Lupele completed the 1999 Rhodes University / SADC course, and tutored the same course in 2000. He subsequently developed a teacher education course for WWF Zambia in 2000 and 2001 and was appointed co-ordinator of SADC course developers network in 2002. Mumsie Gumede completed the course in 1998. She is now managing the SADC REEC, and will co-ordinate the 2002 RU/SADC International Certificate Course.

Rhodes/SADC International Certificate Course in EE
DEVELOPING THE COURSE CURRICULUM TOGETHER

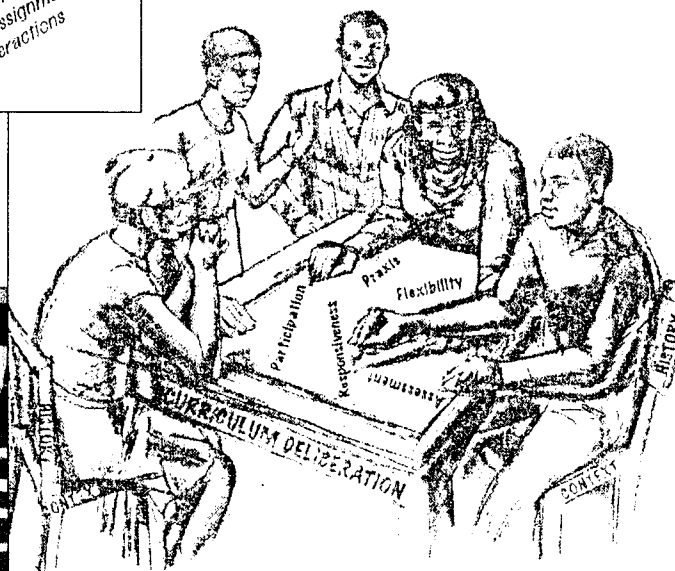


Left: Negotiating a curriculum framework in the SADC International Certificate Course in environmental education.

Right: Workshop with Rob O'Donoghue deliberating the course curriculum.

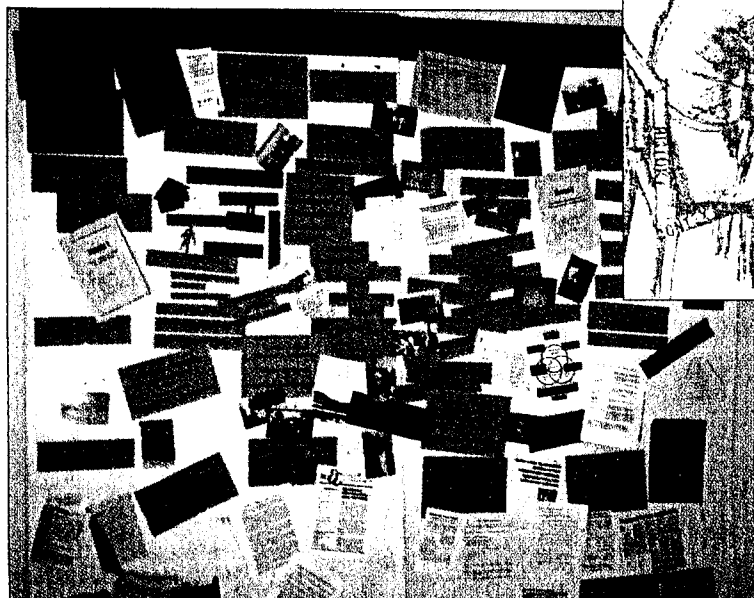


Right: Curriculum deliberation amongst environmental educators.



Left: Summary of the course curriculum.

Right: SADC course curriculum development workshop, 1998.



IX. Curriculum Deliberation

enhanced focus and scope of the courses

With the participatory start up, expansion of the courses, and the research-based focus which highlighted the need for attention to contextual location of courses (not simply adaptation or adoption), came the need to think through how course curricula are framed and developed. These were the very processes that were happening in the earlier participatory courses, in somewhat *ad hoc* ways. The critical review in 1998 highlighted the need to give attention to the course orientation in curriculum development processes, rather than course content. Given the participatory, contextual and reflexive nature of the course orientation, the notion of deliberation came to articulate with many of the characterising features that were been shown to be successful.

After years of practice and research, theories of education and course processes were brought together into a synthesis which allowed the development of courses in more coherent ways. Deliberation provided a good balance between the deliberate and essential from the outside and insights and practices in context. A middle ground was opened between prescriptive narrowing interventionist perspectives and liberal individualised perspectives that locate everything in the freedom of the individual to choose. This middle ground created the space for challenging learning in context. What seemed to have developed is an African ethos of open consensus seeking in community.

The successful features of the course, together with the rationale for processes of curriculum deliberation were documented in the 1999 SADC Curriculum Frameworks Document, produced after consultative workshops with course devel-

opers from the region. These perspectives were applied in the context of developing courses in the SADC region, and in particular in the context of the RU/SADC International certificate course, and in the Namibian, Zambian, and Swaziland courses, as the course orientation, materials, course processes were deliberated contextually in these countries. These are useful case studies of how the Gold Fields Service Centre was supporting the development of courses in the region, in partnership with the SADC Regional Environmental Education Programme. This programme was supported by Mike Ward, Mumsie Gumede, Alistair Chadwick and Vladmir Russo of the SADC Regional Environmental Education Centre.

The demands of providing support for deliberations on courses in other countries and in diverse contexts increased. This led to the development of a proposal to the Royal Danish Embassy for support to continue this work in the region through a course developers network. The successful features of the course will be carried into and further clarified within the course developers network. These features include:

- ♦ Participation: How can curriculum processes enable participation?
- ♦ Praxis: How can curriculum processes enable informed critical action?
- ♦ Responsiveness: How can curriculum processes be responsive amongst adult learners in socio-ecological context?
- ♦ Assessment as Learning: How can assessment processes enhance environmental learning?
- ♦ Flexibility and Structure: Can open structure and flexibility enable curriculum deliberation?

X. Towards a Course Development Network

widening co-operative challenges

By 2001 the request for collaborative support, particularly from groups in the SADC region, threatened to overwhelm the Gold Fields Environmental Education Service Centre. The focus on Rhodes University as a credible accrediting institution became a core issue in providing sustained support to courses and course development initiatives. Through consultative and review processes a course development network was included in a Regional Environmental Education Support Programme in 2002, to broaden and strengthen environmental education capacity and professional development in institutions in the region. An audit of environmental education course development initiatives in early 2002 revealed numerous institutions with start up and / or more established professional development programmes, that were interested in being part of a regional 'learning network'. The learning network will be supported by a consortium of at least three universities in the region, expanding the accreditation of environmental education programmes. It will also consolidate and make available various materials to support course development.

Partners in the course development network are:

- ♦ University of Swaziland (developing an industry training course)
- ♦ Namibian Polytechnic (developing a technology and environment course for teachers)
- ♦ Namibian Institute of Educational Development (developing environmental education modules in teacher education courses)
- ♦ University of Lesotho (developing environmental education modules in teacher education courses)
- ♦ Rhodes University (developing a research methods course for environmental educators)
- ♦ University of South Africa (developing environmental education courses)
- ♦ University of Botswana (developing teachers courses in environmental education)
- ♦ Chobe Wildlife Trust in Botswana (developing centre-based environmental education courses)
- ♦ National Trust Commission in Swaziland (co-ordinating and developing the RU/Swaziland certificate course)

Justin Lupele, the appointed course development network co-ordinator, has identified key issues associated with the development of environmental education courses. These will be deliberated with course developers in the course development network. They include:

- ♦ Curriculum deliberations
- ♦ Materials development for courses
- ♦ Learner and tutor support
- ♦ Assessment and accreditation of learning
- ♦ Evaluation and evaluation reporting



Top Left: Courses expand into the region. Zimbabwe course, 1999, with co-ordinators Kathy Stiles and Leigh Price.

Top Right: Heila Sisitka (Rhodes University) and Keneiloe Mohafa (Gold Fields) discuss the expanding range of Gold Fields courses.

Above Left: Alison Kelly (course co-ordinator) develops course materials for the Gold Fields course.

Above Right: Course developers work on course materials and discuss course processes.

XI. Continuing Professional Development Challenges

co-operating centres of support

Since the Gold Fields Service Centre took over responsibility for Gold Fields participatory courses from the Murray & Roberts Chair in 1996, Centre and Chair have operated as the Rhodes University Environmental Education Unit. The successful mix of academic research and course development services that Heila Sisitka and Eureka Janse van Rensburg provided, has set the stage for continuing work with wider partners in a SADC Course Development Network. Justin Lupele and Mary Klinkradt will support the SADC initiative within a consortium of accrediting universities over the next three years.

Within South Africa, development work will continue on the Gold Fields participatory courses. The current Director Rob O'Donoghue, working with Zanele Xhaba, has opened a field office at Share-Net in Howick. Ingrid Timmermans manages the Resource Centre with Varonique Sias and Gladys Tyatya who is currently assisting the Eastern Cape Gold Fields participatory course, supporting their Wednesday evening study group each week. The field office was opened to optimise liaison with the SADC Regional Environmental Education Programme and Share-Net. Closer cooperation with Share-Net will bring relevant learning support materials into Gold Fields courses and the Rhodes University Environmental Education Unit staff will develop Share-Net materials in cooperation with Gold Fields Environmental Education Centres across the country.

These brief sketches of widening cooperative work in SADC and within South Africa point to a strengthening learning network amongst cooperating centres of support for

diverse environmental education activities. Some of the initiatives that are currently underway are:

♦ New professional development materials and courses

Redevelopment of the UNESCO CD ROM on 'Education for Sustainable Futures' to southern African professional development needs and context, was coordinated by the Gold Fields Environmental Education Service Centre in 2001, with the assistance of a team of environmental educators from southern Africa, and Clayton White from Griffith University in Brisbane, Australia. The project was funded by UNESCO and undertaken for the Ministry of Education through Share-Net.

Ingrid Timmermans has recently taken up a new role as course developer, coordinator and tutor for an Advanced Certificate in Environmental Education, run in the Education Department at Rhodes University. This qualification provides further professional development opportunities for those participants who have completed the Rhodes University Certificate in Environmental Education. Participants are able to gain formal credit for these certificates, within the ACE qualification. She is supported by Alistair Chadwick from the SADC Regional Environmental Education Programme. The ACE programme has drawn its orientation from the Gold Fields participatory courses, and has enhanced the workplace-based focus through a strong focus on applied competence, resource-based learning, and evidence of learning within educational processes.

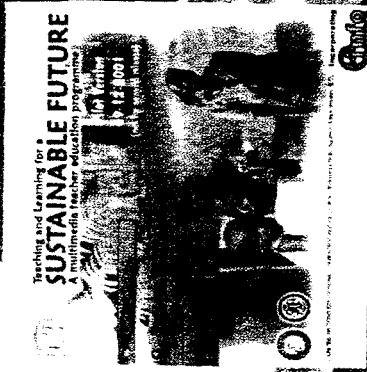
Rhodes University/ SADC International Certificate in Environmental Education (South Africa)



ENABLING ENVIRONMENTAL
EDUCATION
AS A CHOICE CURRICULAR
CONCEPT IN
OUTCOME-BASED LEARNING
PROGRAMMES

The Rhodes University Certificate in Environmental Education is a three-year programme of study leading to the award of the Rhodes University Certificate in Environmental Education.

The Rhodes University Certificate in Environmental Education is a three-year programme of study leading to the award of the Rhodes University Certificate in Environmental Education.



Main photo: A 'family' of course materials.

Inserts: Left: Mike Ward with a group of course participants.

Middle: Ingrid Timmermans looks at resources produced by course participants.

Right: Sidwell Dingela, course participant, leads an excursion to a waste site.



♦ **Ongoing development of the open access Rhodes University / Gold Fields participatory course.**

Ten years since the first course started, in the spirit of ongoing re-orientation and a 'course in transformation', Ally Ashwell has recently revised the Gold Fields Course for the 2002 intake. In doing this, she drew on her knowledge of the unit standards that have been developed as part of new qualifications for environmental educators, within the context of the National Qualifications Framework. She updated and recompiled the Gold Fields participatory course into a part-contact, 26 credit course, that will be offered in three modules at a level 5 equivalent. The UNESCO CD ROM was used as a supplementary resource in the redevelopment of these materials. The opening workshop for the 2002 participatory course was held from 18-20 July at the Gold Fields Centre, Umgeni Valley, Howick. A mix of 40 participants in four provinces, have challenged themselves to work together within the conceptual scaffolding of this new course format. Participants range from teachers, conservationists, government officials and community workers. Drawing on earlier work course co-ordinators are working on a training module for tutors who have done the Gold Fields course. This is to support current tutors and to train others at existing Gold Fields Centres so that the course can be offered at, and supported from, these centres. This will enable the centres to provide environmental education training opportunities to local teachers, conservation agencies and community groups - enhancing the role of centres.

♦ **The development of new learning support materials**

Coliform kits for use in cholera areas have been developed with the Department of Water Affairs and Forestry. A new learning resource is being developed on the Coelocanth and the Share-Net e-info resource library has been developed to consolidate much of the learning support materials into a format that can be used in support of Outcomes Based Education, and in the context of professional development courses.

♦ **Research initiatives**

Accreditation research and research into the implications of the NQF competency framework for course processes, is currently being written up by Glenda Raven. Leigh Price is well into her research on industry, opening new epistemological and methodological issues for research and professional development. The Gold Fields Environmental Education Service Centre has also consolidated much of the work on Indigenous Knowledge, working with Ph.D researchers active in this field.

This web of activities is being undertaken within the Rhodes University Environmental Education Unit in such a way that southern African partners have access to both participate in, and contribute to a wide range of developing expertise and materials for environmental learning and capacity building. The unit acknowledges the Gold Fields Trust, Murray & Roberts, the Mazda Wildlife Trust, Rhodes University and the Rhodes Faculty of Education for enabling this supportive work to continue. SADC partners, the Wildlife and Environment Society of South Africa, Sida, DANIDA, WWF, Ezemvelo KZN Wildlife, SA National Parks and the environmental education community of southern Africa are also acknowledged as cooperating partners in supporting efforts to ensure a more just, healthy and sustainable environment.

Rhodes University
Grahamstown
August, 2002

Below: Rhodes EE Unit staff
with Mazda Wildlife vehicles.



The Rhodes University/Gold Fields courses have been made possible through many co-operative partnerships



Royal Danish Ministry of Foreign Affairs

Danida



The Driving Force
That's Making a Difference

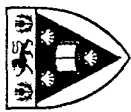


South African
NATIONAL PARKS

MacArthur
Foundation

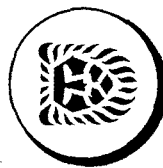


1995 RU/WWF International course participants visit Umgeni Valley.



RHODES UNIVERSITY

Grahamstown • 6140 • South Africa



GOLD FIELDS



APPENDIX TWO

EXTRACTS FROM OBSERVATION NOTES CONTAINED
IN DATE FILE EIGHT

Participants were all required to do a readings from theme 1 and to summarize and discuss these with colleagues at the tutorial.

This encouraged lots of discussion in the tutorial. Participants were reflecting new own views in relation to the readings. Eg. of summaries in class (see below) all themes in relation to the readings - the development of competences.

28/01/00
Eastern Cape discussion around readings was set different to WC and more directed. They were given a set of questions and needed to read a specific reading around these questions using the 'hot seat' activity (see data file) they discussed this question in groups of 3. Participants also then reflected on the process of analysing the readings (see observation notes of 23/01/00)

WESTERN CAPE

Sunday, 17 October 1999
Tutorial observation recorded in writing only.

Some analysis of readings. Discussion of contents of article and to gain some clarity. For some studies it might be useful to analyze the (summary) of each reading for the 18 studies to evidence of reflective competence. It was also possible to possibly use a possible reflective competence course process which developing facilitates critical thinking and for framework. Environmental causes - synthesis of theme 1.

3. Assessment of orientation

Self-assessment
demonstrates this specific case to engage in reflection

Appendix 2.1

① VACILLATION

After and reading back at comm. development. Not much - perhaps the connection is missing with community her visions for beyond community + environment. the pgn. need for community involvement to get community involved in school pgn. view letter + greenings change in values, challenge ideologies, making community integral part of school.

② MELANIE

Difficult to identify issue in her work context. EE very woolly and very seldom, a tangible outcome. Proposed consideration sometimes subjective. EE - when does it warrant finding. Pgn. guidelines for finding proposals of ee projects.

could be change in attitudes towards finding for ee. View of conservationist primary in considering proposals. Questions. Questioning methods of ee. 'Putting kids in a bus and taken to Td. Mt.' that is ee? Questioning. Would be something to plough back into org.

③ TACTIC

'lack of awareness' indifferent attitude to environment. Applying towards environment resulting in range of issues eg. graffiti etc. Look at part of curriculum and redevelop part in abc format, self-regulatory. Behavior change

I missed the 1st tutorial, so I don't know to what extent the instruction was discussed. I also don't know whether p/pnts were given any guidelines to this presentation. These presentations seemed shallow to me in relation to assigned requirements. In my experience as tutor on the industry course, I found a lack of discussion on assignment requirements. I still have a responsibility to provide a draft of a presentation. I felt a bit in depth presentation and led to rich discussions.

I noted the same trend in the EC discussions around draft assignments (see obs. notes 23/10/00)

Refunds Community Parent + area

Overview of books to be read

① VACANTIA

later, and regarding back at community development.
Not much - perhaps the connection is missing with community her vision for Refund community + environment. the parent need to get community involved in school pgn. you litter + greening -> change in values, challenge ideologies, making community integral part of school.

② Melanie

Difficult to identify issue in her work context. EE very woolly and very seldom, a tangible outcome. Proposed consideration sometimes subjective. i.e. EE - when does it warrant finding. pgn - guidelines for finding proposals of ee projects.

could be change in attitudes towards finding for ee. View of conservationist primary in considering proposals. Questions raised. Questioning methods of ee. 'Putting kids in a bus and taken to Td. Mt' that is ee? questioning pgn. Would be something to plough back into org.

③ Tactile

'lack of awareness' indifferent attitude to environment. Apology towards environment resulting in range of issues eg. graffiti etc. look at part of curriculum and redevelop part in ee. parent, self-regulatory. Behavior change

...the first tutorial, so I don't know to what extent the instruction was discussed. I also don't know whether parents were given any guidelines to this presentation. These presentations seemed rather to me in relation to assigned requirements. In my experience as tutor on the industry course, I found a lack of discussion on assigned requirements at all. I think these requirements were presented in depth in presentation slides, but to what discussions?

I noted the same trend in the EC discussions around draft assignments. Case obs. notes 23/10/00

Some tensions at the tutorial.

Jacky had developed AC, but none of the others had any AC to work from. I thought they needed a uniform set.

± 1 hour was spent on elaborating this. I found it a complete waste of time.

Hence very little was recorded here

20/10/2014

28.11.99

En Cape

Regional tutorial - U.C. (Rylands Primary)

~~Criteria~~ 2.

Developed at previous workshop - AC

- demonstrate the E issue
- relevance to work context
- describe pgn
- describe issue you are responding to
- outline aims + objectives
- key principles guiding pgn
- how are international principles relevant
- reference examples are relevant
- how change in thinking has influenced principles
- distinguish between aims, objectives + principles
- reference readings
- show integration

General AC for all assignments.

- using participants as resources

- accepting critical comments

- noting at least 1 comment from 1 other

- relevance to work context

In this tutorial I played a much more active role. I spoke maybe even too much. I feel as though I am directing the course processes here in terms of my research and what I am wanting to see come out in these tutorials. Perhaps with the next one, I need to step back a bit and not get too involved in discussions. Perhaps try a higher degree of objectivity. Difficult though, since I also want to see the course and being maximized and to the benefit of the participants.

Regional tutorial - WC - 20 January 2000

1. Feedback on AC and assignment 1

- Jackie - never quite sure that she is on the right road. Reflecting on something has always been doing. Very difficult.

Annette - ~~found it very difficult to relate~~

~~practice to theory. As to attribute ideas~~
~~signifying - reflective context and discussing~~
~~the context of~~

- Melanie - difficult but useful and realized that what Wurf does is not what is on paper.

- * - Veenstra - kids said 'you are the teacher', you should know everything.

2. Discussion of core text 3. A

Anton recognizes that ~~the~~

Olwen reflects on her teaching experiences

• draw + tell

• talk + chalk

• excursions in nature

• field work with kids doing something.

'why do I need to change' quite excited about recognizing change in myself. Very difficult to change.

The EC + WC tutorials seem so different. Why? I feel like I got so much more from the EC tuts than I had got out of the WC group.

Some reasons

- ① Jane's understanding of the course orientation and philosophy underlying EE.
- ② Heila was also there and being one of the course coordinators need I say more
- ③ I was far less involved in this and sat back and wrote my notes. Maybe I got too involved in the WC tuts and wanted to see the processes yield reflection.
- ④ Maybe with this one I was clearer on my research focus.

I still get the sense though that tutors play a big role in their own understanding of course processes and how they enact this understanding in the support given.

reflexive competence
knowing a doing.

STERN CAPE REGIONAL TUTORIAL
RU- GRAMSTOWN 22-23 JANUARY 2000

PROGRAMME

SAT :
Tutors
orientation
possibly
guides offer
to course
processes

am : ~~AC~~ AC
questions and answers to bring a quest along with them to Tutorials
pm : ASS 2
Theme 2
EE principles
Reading

SUN : am :

Reading - problems + look at ways of working thru these together
ASS 2 + AC - ass + criteria design
Planning for Heila
ASS 4 - asked to come with some ideas for this.

Jane and Lawrence are tutors. Lawrence is away. Jane + Heila facilitating

①

Assignment 1 -
Gladys ↓

proceeding to the following B comments.

- highlighting in which comments are done

Jane asks 'in which way? are you experiencing problem.

Seem to be misunderstanding of what is being asked.

types the comment Notes

then the comments with Gladys.

Appendix 2.4

Discussion
I ~~overestimated~~
placed in
FOTG.

Made an attempt to explain - what was suggested. Others: "We have to make all the suggested changes."

Open question

~~the questions are suggestions.~~
~~The ones is on participant as to~~
~~whether you want to answer/not.~~

The questions are suggestions.
The ones is on participant as to
whether you want to answer/not.

Boyce

Good, opens our minds. To think
of things you might not have
thought of.

9. ~~Boyce~~
~~concerns~~
~~participants~~
Vanavongke

- thinks you should respond to
comments
- sees it as guidelines not
prescribed to follow.

Wuyoua

- she felt the comment suggested
a change.
Jane explains it suggested
narrowing down the focus.

~~the questions are suggestions. It's up to~~
~~participants to decide with it.~~
~~decide.~~

seems acknowledgement of this thinking.

Boyce

Strengthens your knowledge. Lets one
think further.

Jane.

participants decide on when it is
final draft.

Myriam - want to stick to air pollution and not look at 'ozone depletion' as suggested.

Felt comment reflected her into a new issue. relevant to her work.

Varonique's comments → prompted by broader understanding of course processes? in her position at CE S.C.

2. Discussion of AC - Nov. 1 → to accept these as final draft.

a) Rebuttal at initial criteria set.

My comments on these AC? Accept as is for final assessment

+ national

b) ~~to be developed and sent to regions~~

~~to be developed and sent to regions~~ finalising ACs

~~People asked to get into groups → discuss~~

~~even performance is relevant to this →~~

~~self-assessment, suggested by coordinator~~

June 8. 1995

with coordinator

preparing to go

beginning of

work

WC - did not use National AC for self-evaluation. ? why?

for clarity.

now people feel

new people feel

Did people find the discussion useful? - Jane.

Workshop - useful in clarifying what we have

done in previous workshop.

Boyer

R.S. - 'correct grammar + spelling'

Feels if ideas are reflected, then the grammar + spelling should be ignored.

People agreed that this would not be too important.

Note - feels it should be NB → people are

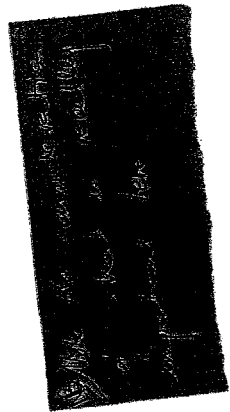
writing not for yourself but for other audience.

Songezo - while writing tends to focus on ideas, rather than grammar.

should relook at grammar at end of the assignment.

Swapping assignments - peer review, could help to correct grammar + spelling.

Peer assessment, easy of doing



participants
encouraged to
ask questions
from tutored
activity in the
ECG

3.

Each participant looks at
a journal I gives out a relation
to AC.

4

Each person formulated one question. This gets
discussed by a group of 2 discussors.
Each of the questions and then report
back to the rest of the group.

Arato - scary - even I haven't been able to
do this. Makes one aware
of the progress made. Makes
you aware of your changing
thinking. Good thing -
shows you where you are.

Varonique - has ideas changed since I came
into the course. Thinking changes,
you think a bit about why
you haven't A, why you have

Noble - draft 1 - not using AC. I need to
do something. Identify things to still
be addressed. Realized NB of AC -

to guide your assignment
Bayce - to guide you. 'did I meet these goals'
If you didn't, try to.

Sangeep - where are you. what are
your weaknesses, what are strengths.

S. or Note to say I can do this + this.
I can't I didn't do this and helps
you to understand why?

eg. I am not an academic. Could not do level of research as suggested. Can id. where to move from this point of knowing strengths + weaknesses.

Jane: ① NB to know strength + weaknesses
② look at yourself + your own development. Each person on own unique journey.
③ Not sounding mysterious. Research is interest in what we do.

Nohle - 'critical analysis' - difficult to do so if coming from some academic field. Idea of academic intimidating

Jane - discussion of idea of pairs. You are bringing together

Self-assessment - should be done for each session. Setting yourself objectives, id. opportunities for development

Naron. see how far you have progressed. becomes part of reference.

→ discussion and 'research'. Seen as an academic thing. Not done by us, in work context. Need to expand on something the concept of research.

Stacy has problem with recordings. Some discussion over techniques. Some words not understood. Encouraged to highlight/underline them and bring up for discussion in tutorial.

Detail on no. see 3 pages before.
Group discussions - no feedback.

PM. - Hella

① Assignments

Provided overview of all 4 assignments and how these relate to each other

→ Ass. 1 - analyzing issue

→ Ass. 2 - looking at aims, principles + objectives

→ Ass. 3 - educational ideas



all these make Ass. 4 a better

planned resource/programme.

Prior 3 helps you to clarify ideas in 4 better.

② Discussion of Ass. 2.

Explained. Focus on what you do. What issue are we responding to? Focus: aims, objectives. What are these? How and

why have they been developed. Which could be useful for your project. principles. How and why are they relevant? How do changes in thinking help to shape our plans.

Round table - all talk about their own programme. Others comment and advise on the one being presented.

Verato → 2nd day based on Ass. 1. Municipal project. Trees for people. CIRC

contracted to do work.

→ Plant 7000 trees

- Create awareness of E.

- " " of NB of trees.

- Empower people with skills.

Main issues - tried to link principles to what we have done.

Y we have done.

• communities need to gain control of project.

• look at historical background + see

new concept; unemployment. Trees not priority. Need food and income.

Community vocalized trees. Community

human officers - living in community +

sketches here - these people raised

awareness in community

workshops, meetings, street competition,

people started developing business + see

NB of trees.

- also responding to poor physical conditions.
She has taken problem + related this to principles.

Sengezo - beautification of Elham - greening.
has no aims + objectives.
has developed his own, to put
to the community.

is doing this
to do it
to do it
to do it
to do it

has + why? multi-faceted problem of living.

Principles: - see continuous life-long process 'Totipot'
... empower all people with skills 'use'
Communities must regain control. Empowerment
to expose knowledge + skills.
5 principles used: -

and are linked to principles

divided into 5

and
now

how do principles inform what you do.

assignment 2 helped him in thinking how project
Hella suggests this and he agrees. Reaffirms
two as a useful process in defining aims.

Noble - water pollution - encourage eco-clubs to
be part of the PGM. Take kids to
Swadlow Rye. One school next to
wetlands.

Aims - ?

Objectives -

Principles -



how + why → see assignments 2 - draft 1.

Leaves conducted questionnaire about the network adjacent to school.

• encourage school + community interaction.

principles → 'communities must regain control...'

Vijiswara → didn't understand the requirements.
also confusion over waste - air pollution vs. ozone depletion

Think of Pgm. for industries, is addressing air pollution.

Boyce → work with youth + schools. Hope 21 →

early
help our species
21st century

Help youth → create awareness;

→ develop problem-solving skills;

• start as learner now + later become an educator. principle: we are all learners and educators...

Need to work further on developing aims +

Gladys → ECD income generation etc, child development
 aims → train parents in roles & responsibilities
 → educ. kids

- encourage communities to do...?
- encourage community to recycle for the school.

was why? Lack of parent & community involvement. prompted pgn.
 referenced some principles which should inform the pgn. Ref examples in project which relates to these

Link of principles to human rights - Heila!
Principles are guiding framework!

In ECTG
 strong focus
 on principles
 in ass. 2

Technique: Aims → aware of it waste
 → Safety in the house
 → teach management of resources in the household.

Obj. → teach separation of waste
 → combine issue of health & safety (health and bin)
 → 3 R's.

- life-long process
 - promote value & position of E issues.
 - enable learners to play a role in developing learning pgn.
 - help discover real symptoms of problem.
- all seemed to relate to the principles

Think about

'why' are UNCED principles more relevant to your work, than the other set.

③

Revised set of principles, based for 1/2 which

you might use in future, from your own

set, but for 5 to guide EE practice

in the E.C.

Kala's diagram
in summarizing
assignment, and
relation to
presentation

" assignments provide conceptual framework
to understand + shape practice.

For Research Journal

- why did I get more out of this tut than we?
- Was I too involved in discussions?
- Did I have more focus in this observation?

Reflection on the focus areas in Learning
processes / as we found the focus
more was on discussion than in the action
from the W (I found many useful
in discussion of reflection in the W
group through

Feedback.

Group 1: UNCED, 3 + 10, Tolibi, 4, 6, 7.

Group 2: UNCED, 10, 15, 16
Tolibi, 11, 2

Group 1: 11 - Tolibi, UNCED - 7

Sunday 23 January.

① Reading - hot seat conversation!
Participants given questions, based on the reading, to prepare their responses. These are presented and open to question by others. The conversation continues from one participant to the other. ~~20~~ questions.

The educational response to the environmental crisis' Janse van Rensburg (1998)

miad @ saide . org . za
relo @ saide . org . za
www . saide . org . za

① Songezo - background to ee. Traced back to various conferences. Describes some features of conferences - international level - WSSN formed through delegates to international conferences. Policy developed. Mupfwa - mentioned 'policy' - 1996
Kerato - SA - ee in NGE framework, environment policy.

Paper is guideline to integrating ee into Pgm. Not all policy has been implemented

① hope - development in education slow to implement policy. teachers don't understand. Don't see integrate

Walter - gap in policy + implementation
 exemplified by curriculum to be planned around socio-ecological issues. focus on context

Walter - feels emphasis on teacher development necessary.

② Walter - not fixed knowledge. encourages active learning.

Engage - encourages learners to conserve water + pass message on

Walter - 1. active learning

2. encourage school cur. links.

④ Walter - community participation in problem-solving.

Walter did you find it and what did you gain.

Walter - good way of getting into and all participating

S - we questions refer to water

focus areas. Engage found it difficult

Walter - we questions to understand initially. the questions made it easier.

Walter - questions simplified article. encourage you to

think broader + also this to what

we are doing

Theory / practice integration - a team example.

NB

- 14 - more enriching: some picked up things which were not obvious.
- 15 - learning from each others experiences. To clarify ideas.

0 Assignment 4 discussion.

Heide discussed assignment 4 in context of all 4, using building blocks reference frame.

Rural talks on ideas for ans 4.

- 14 - pamphlet encouraging recycling of household wastes. Some ideas on research to be undertaken.
- G - develop and publish for collecting recycled materials, but to restrict at present only.
- B - booklet for schools - aims & objectives of see, with activities to encourage participation in activities.
- 14 - fact sheet on industrial pollution in G.L., possibly fed in to manufacturers.
- Song - booklet on waste reduction - for householders similar to 14 perhaps done, more generation project proposed.
- Heide - resources - experience of project, what went wrong, what we can do better, etc. evaluation.

segment 2 and AC.

Review general AC → for ASS.1. These

remain in ass. 2.

AC for ass. 2. → This assignment is what do you expect from yourself in this assignment.

- Clear about the issue to which you refer is responding
- Differentiate between aims + objectives of your programme
- To be able to relate EE principles to your project.
- Identify appropriate EE principles for your project.
- Explain how working in EE has influenced principles.

APPENDIX THREE

THE QUESTIONNAIRE USED TO ELICIT BASE LINE
INFORMATION FROM PARTICIPANTS

RESEARCH QUESTIONNAIRE

October 1999

1. NAME AND CONTACT DETAILS

- a) Name: _____
- b) Telephone: _____
- c) Fax: _____
- d) E-mail _____

2. WORK DETAILS

- a) Name of organisation / company for which you work.

- b) What does your organisation / company do?

- c) What is your specific role in the organisation / company?

- d) List all the aspects of your current job description.

3. ACADEMIC DETAILS

a) What are your formal qualifications?

b) What other courses have you done to support the work that you do?

c) If you were to further your studies , in what area would it be?

4. What are your immediate expectations of the course?

APPENDIX FOUR

QUESTIONS USED IN THE INITIAL INTERVIEWS WITH PARTICIPANTS

RESEARCH INTERVIEWS

11-15 October 1999

1. Describe your work context, what you do and how environmental education relates to the work that you do?
 2. What are some of the environmental issues that confront you in your work context?
 3. Describe some of the environmental programmes currently in your work context? How frequent are they and how are they run? How was this programme developed and were you involved in any way in developing it? Does it relate in any way to the issue you talk of in (2)? Motivate.
 4. Did you join the course out of your own? If so, why did you decide to do it? If someone else suggested it, why did they think it important for you to join the course?
 5. What are your expectations of the course?
 6. How do you think that your organisation will benefit from you doing the course?
 7. What do you personally hope to gain from the course?
-

Other things

- Questionnaire - a questionnaire requesting background information. For all participants to complete as soon as possible and return to me.
- Assignments - request for everything written down that relates to the assignments. All ideas, questions, concerns that are noted to let me have copies of these.
- Reflective journal - All ideas, questions, concerns, problems, anxieties, hunches, experiences, etc. to record these and let me have these reflective journals.

APPENDIX FIVE

QUESTIONS USED IN FOLLOW UP INTERVIEWS WITH
PARTICIPANTS AFTER THE END OF THE COURSE

FINAL SITE VISIT AND INTERVIEW - Anton Fortuin

Thursday, 12 October 2000
Centre for Conservation Education
Aliwal Road
Wynberg
08h00 - 14h00

A. Academic background

1. What was your initial qualification, where did you study and when?
2. What were your further studies and what motivated you to do this?

B. Work experience

1. Where did you teach, for how long and what did you teach?
2. What were your reasons for leaving formal teaching?
3. You noted an interest in teacher education. Was this your long term vision, and where do you see yourself going to realise this vision?
4. What sparked your interest in environmental education?

C. Work context

1. What specifically are you involved in at the centre?
2. What are your visions for the school programme being run at the centre?
3. You reflect quite a lot of discomfort in not achieving what you set out to do at the centre. What exactly is this discomfort you were feeling when you first started the course and has anything happened to address this discomfort which you are feeling?
4. Why were you motivated to develop a workshop programme, how did this go and do you see any spin offs to the workshop programme?
5. What vision do you have for environmental education in the schools after this workshop is run?

D. The Gold Fields Course

1. How did you come to know of the course and why did you decide to do it?
2. What were your expectations of the course and how did the course respond to those expectations?
3. What were some of the significant aspects of the course for you and why were these significant?
4. What are your future plans at the centre to encourage schools to act on environmental issues?
5. What are some of the environmental issues that you think schools should be responding to?
6. Did you find the language medium used in the course a problem in terms of expressing your ideas and in terms of interpreting the course materials?

FINAL SITE VISIT AND INTERVIEW - Vacintha Moonsamy

Tuesday, 10 October 2000

08h00 - 14h00

Rylands Primary School

Rylands

A. Work context and the existing environmental education programme

1. What had initially prompted the formation of the environmental club?
2. What was the initial vision for this programme and does it still exist with these initial aims?
3. How did you come to join the Kirstenbosch Outreach Greening programme and how does this link to the environmental club?
4. What are some of the activities undertaken in this programme and how do they relate to the initial aims of the programme?
5. Why the focus on community participation and how is this being addressed?

B. Academic background

1. Where and when did you qualify? (BA and HDE)
2. What were your visions when you started teaching and moved through the nine years at your school?

C. The Gold Fields Course

1. What initially sparked your interest in the environmental club, environmental education, and the Kirstenbosch programme?
2. How did you get to know about the course and what did you hear about the course that sparked your interest?
3. What were you expecting from the course and how did the course respond to these expectations?
4. What were some of the significant aspects for you in the course and why?
5. What motivated the development of the workshop for your colleagues and what vision do you have for ee in your school after this workshop?
6. Where do you see environmental education going in your school and for you personally?
7. You note the development of self-confidence and a critical perspective as some of the things which you gained on the course. What supported this development and how is it reflected in your practice now?

FINAL SITE VISIT AND INTERVIEW - Cathy Cook

Monday 16 October 2000
Sans Souci Girls High School
Claremont
08h15 - 14h00

A. Academic and professional background

1. What were your major subjects in your initial degree?
2. Which subjects did you teach over the past twelve years and where did you teach?
3. How did this teaching experience influence you practice as noted in your assignment 3?
4. Why did you choose to do a course in behaviour management and how did this influence your practice?
5. What sparked your interest in environmental education and what was the extent of your involvement in the existing programmes at your school?
6. What were your visions for education and generally environmental education at your school?
7. You note that you had a need to teach better. Why is this so and what did you do to respond to this need?

B. The Gold Fields Course

1. How did you come to hear about the course and what made you decide to do the course?
2. What were your expectations of the course and how did the course respond to those expectations?
3. What are your visions for environmentally literate and active school leavers and how do you see yourself playing a role in fostering this development?
4. Why do you feel the strong need for action in your teaching and was this always a need for you?
5. What are your visions for the programme which you developed, how did it work in your school and what would you do differently if you were to use it next year?
6. What were your aims for the programme and do you feel that you have achieved these aims?
7. You note a change in your teaching practice from a behaviourist approach. What do you think has influenced this shift and why?
8. How do you see the future of environmental education in your school context and what role would you like to play in this?

FINAL SITE VISIT AND INTERVIEW - Daniel McGinness

?

Khutala Colliery
Kendall Power Station
Mpumalanga

A. Professional background

1. Is environment part of your brief in the technical services department and how are you involved in this aspect?
2. Is environmental education part of your brief and how are you / would you be involved in the environmental education programme at your place of work?
3. Would you get involved in running the programme or would yours be a part of planning for and implementing structures for the environmental education programme?
4. What are your visions for environmental education in your company and how do you see your department supporting this?
5. Would the course be useful to others in your company and would you have an opportunity to share your own experiences with others in your company?
6. You talk of formalising environmental education and training in your company? How would you do this and why do you think it necessary?
7. You note a shortage of effective teaching methods in your company. Why do you see them as ineffective and how do you think this can be addressed?

B. The industry course

1. How did you come to know about the course and what in particular encouraged you to do it?
2. What were your expectations of the course and were these met by the course?
3. What are some of the most significant aspects of the course for you and why is this so?
4. How would you and would you have room to address some of the issues of the current environmental education programme in your work context?
5. Where do you see the resource which you developed going in the future?
6. How did the resource work at the meeting in terms of your aims of the resource and its introduction?
7. You note that during the course things became much clearer to you. What are some of these and how did they become clearer?
8. You noted the difficulty in assignment writing. How did you experience this in the course?

FINAL SITE VISIT AND INTERVIEW - Songezo Mdoko

Friday, 20 October 2000

Grahamstown

08h00 - 14h00

A. Academic qualifications

1. What are your formal qualifications, where did you complete it and when?
2. How do the other courses relate to the work that you do and why did you choose to do those in particular?
3. When did you complete them and how have these contributed to the work that you do?

B. Work experience

1. What is your work background?
2. What led to your involvement in and how long have you been involved in civic organisations and what do you do in these organisations?
3. What is your vision within these organisations?
4. Have you been involved in any community based education programmes, if so how long and how?

C. Interest in community based environmental education

1. What has sparked your interest in community based issues?
2. What are some of the priorities that you see for community based projects and what role do you see communities playing in these projects?

D. The Gold Fields course

1. What has sparked your interest in environmental education?
2. How and what did you get to know about the course?
3. What were your expectations of the course and how has the course responded to these expectations?
4. What more were you wanting to know about environmental issues and why?
5. What were some of the most significant aspects for you in the course and why?
6. Where do you see yourself going with what you gained from the course and where do you see the proposal going which you developed?

FINAL SITE VISIT AND INTERVIEW - Anastelle Solomon

Tuesday, 31 October 2000

Working for Water

Hertzog Boulevard

Cape Town

08h00 - 14h00

A. Academic background

1. What were your initial qualifications, what were your majors?
2. Where and when did you qualify and was your plans to go into teaching initially?
3. What motivated you to do a MSc and what were your plans on completion of this?

B. Experience in education

1. What did you teach, where and for how long?
2. How did you experience the years that you taught and what made you decide to leave teaching?
3. For how long did you work at NBI, what was your particular brief there and how did this relate to the rest of the department within which you worked?
4. For how long and how were you involved with the ABET programme at the NBI?
5. Were you involved professional development programme for ABET educators?
6. What do you currently do at Working for Water and what are your visions for this job?

C. Interest in community based environmental issues

1. What is it that sparked your interest in community environmental issues and then also in environmental education?
2. What is the areas of greatest concern to you in the Paulshoek community and why the interest in this specific community?
3. What vision did you have for this community in terms of the NBI programme there?
4. How could this vision have been realised and what are some of the limitations which you faced at NBI?
5. Can you recognise any opportunities for acting on some of the issues in the Paulshoek community?
6. Do you see environmental education as a way of responding to the unsustainable use of natural resources? How and why?

D. The Gold Fields Course

1. What sparked your interest in environmental education and how and what did you come to know about the course?
2. What were your expectations of the course and how did the course respond to these expectations?
3. How do you see science and education being brought together in environmental education?
4. What in the course was lacking for you and how do you think that this issue can be addressed in future?
5. How did you see the funding proposal which you developed, responding to the issues in the Paulshoek community?
6. What are your visions for environmental education in your current job?

APPENDIX SIX

COPY OF E-MAIL INTERVIEW WITH WENDY,
FOLLOWING UP ON EMERGING ISSUES

From: Wendy Hitchcock
 To: Louw, Glenda
 Date: 2/29/00 9:30AM
 Subject: Re: some questions for my research

Hi Glenda

Answers to your questions :-

1. How was assignment 2 introduced to participants? Did you take time to discuss the details of the assignment with them? if so, how was this done?

Assignment II was introduced as the extension of Assignment I. We closely followed the instructions that are clearly laid out in the assignment sheet. The first two instructions to briefly describe their project and issues that they are responding to follow logically from their assignment I.

Activities that we did to explore the next set of instructions were :-

1. To define our own understanding of EE and then to compare them to the definitions given by Huckle, Martin and IUCN. This was aimed to show how our understanding of EE is shifts and changes with time and exposure to new ideas. The exercise was really to reinforce the fact that in order to define EE one needs to be very clear as to what you are aiming to do, which leads directly into the need to define aims, objectives and principles that guide what we do.

2. The difference between aims, objectives and principles were discussed and participants worked in pairs to discuss their own aims, objectives and principles of their programmes. Two groups had time to give feedback on what they had discussed. The aim of this exercise was to help participants start to look at their projects and programmes in terms of aims and objectives.

3. The next workshop, participants presented their Assignment II to the group with the aim of getting feedback from everybody.

I had wanted to do an activity with the Tblisi and UNCED principles but we spent too much time on the assignment s and discussing the Assessment Criteria for Ass II. These principles had been discussed in the report back on the readings and in Razeena's presentation.

2. Can you give me some detail about the activity you used to introduce this assignment to people?

I did not hand out a formal assignment activity like you did for Assignment III because I felt that the instructions were clear.

2/3/00

I hope that this answers your questions
 W

Principles in the core text were not discussed in relation to participants practice.

The discussion focussed on aims and objectives of their programme and their own principles. I think the link between theory (the 2 sets of principles) and practice was not clearly emphasized here

Focus on
lack of
examining
it

APPENDIX SEVEN

COPY OF E-MAIL INTERVIEW WITH JANE,
FOLLOWING UP ON EMERGING ISSUES

APPENDIX 6

From: Jane Burt <nkwenkwezi@excite.com>
To: Glenda Louw <glerc@iafrica.com>
Subject: Re: some questions
Date: 22 February 2000 05:53

On Sun, 20 Feb 2000 18:40:03 +0200, Glenda Louw wrote:

Hi Jane
Hi Glenda

Would you mind to answer a few questions for my research please.

When I heard the EC people present their assignment 2's, most of them were able to make the connection between their practice and the theoretical principles in the core text. This was quite a battle in the WC group and at third draft some people have still not made the connection.

Can you give me a bit of detail on how you introduced the theme 2 to them and then how you introduced the assignment to people?

I can try although I don't remember so well. When we first introduced them we went around the circle and asked each person what they were working on and how they saw the principles fitted into their work. If I can remember correctly we went through each section of the assignment using examples from each of their work on how it related to the theory. We spent quite a lot of time on answering questions and used the assignment as a way of clarifying an understanding of the theory that we had just been through. I can't say more than that without a copy of assignment 2 with me as it will jog my memory... maybe remind me and I'll look at it soon at the moment I'm busy moving and life is a bit upsidedown.

Or anything else that you may think has made people make the connection So well - between theory and practice - in the case of assignment 2.

I think it is because we have such a strong focus on the assignments -also because people are mostly second language speakers we work a lot slower or rather with more detail and we don't assume that people understand.. unless they say so.. in a way this has been an advantage for the EC group as they have come it feeling maybe less secure than other people and so have been more open to clarifying and questioning.

Would you mind to answer the questions in the text of the e-mail please. It helps to make data management easier.

Thanks a stack and see you soon.

Hope that helped - oh one other thing.. in the session you came to the clarifying of the principles also helped with regards to the assignments...how do they apply to your work... bringing all theory back to assignments and to what is actually happening with the participants seems to be the main thing that helps us and them along.

Glenda

cheers
jane

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glerc@iafrica.com

*encouraging a
pragmatic approach*

APPENDIX EIGHT

QUESTIONS USED IN E-MAIL INTERVIEWS WITH
COURSE CO-ORDINATORS AND TUTORS

INTERVIEW QUESTIONS FOR TUTORS AND COURSE CO-ORDINATORS

JANUARY 2001

1. In your experience as tutor / course co-ordinator, has the course orientation been explicitly discussed with course participants?
 - How was this done?
 - What was communicated to participants?
 - How did participants experience the discussion of the course orientation?
 - Are there any examples of how participants worked with the course orientation? Name a few of these examples and the specific aspect of the course orientation to which it refers?
2. What are some of the key features of the course with you observed as tutor / course co-ordinator?
 - Can you provide some examples of how participants / tutors have worked with these key features in the course?
 - Do you think that it is important to highlight these key features in the course? If so, why?
 - How do you think these key features can be highlighted / brought out more clearly / drawn on in better ways in the course?
 - Do you see these key features as being important to the professional development of participants? Why?
 - Can you name some examples of how these key features have supported the professional development of participants?
 - How do / have these key features influence / d the course outcomes?
 - What are some of the visible outcomes of working with these key features in the course?
3. The National Qualifications Framework (NQF) proposes learning programmes that enable the development of reflexive and applied competence. The reflexive orientation of the GF course could be related to this framework of reflexive and applied competence.
 - Do you see the course orientation linked to the idea of reflexive and applied competence as proposed in the NQF? How and why do you say so?
 - In which of the course processes / features do you see this link? Name some examples.
 - How do you think that the course can better enable the development of reflexive and applied competence?
 - How do you think that the key features, noted above, can better support the ideas of reflexive and applied competence?

PLEASE ANSWER THE FOLLOWING QUESTIONS IN THE TEXT ABOVE AND RETURN THEM TO ME AS AN ATTACHMENT BY 15 FEBRUARY 2001

Thank you for you co-operation

Glenda

APPENDIX NINE

THE CONTENTS OF DATA FILES ONE TO TEN

CONTENTS OF DATA FILES 1-10

data file no.	data category	contents	ref
1	Anton's portfolio	▪ Background questionnaire ▪ pre course assignment ▪ assignment 1, draft 1 ▪ assignment 1, draft 2 ▪ assignment 2, draft 1 ▪ assignment 2, draft 2 ▪ assignment 3, draft 1 ▪ assignment 3, draft 2 ▪ assignment 4, draft 1 ▪ assignment 4, draft 2 ▪ course file	▪ quest. ▪ ass0 ▪ ass1.1 ▪ ass1.2 ▪ ass2.1 ▪ ass2.2 ▪ ass3.1 ▪ ass3.2 ▪ ass4.1 ▪ ass4.2 ▪ cf
2	Vacintha's portfolio	▪ background questionnaire ▪ pre course assignment ▪ assignment 1, draft 1 ▪ assignment 1, draft 2 ▪ assignment 1, draft 3 ▪ assignment 2, draft 1 ▪ assignment 2, draft 2 ▪ assignment 3, draft 1 ▪ assignment 3, draft 2 ▪ assignment 4, draft 1 ▪ assignment 4, draft 2 ▪ reflective journal ▪ course file	▪ quest. ▪ ass0 ▪ ass1.1 ▪ ass1.2 ▪ ass 1.3 ▪ ass2.1 ▪ ass2.2 ▪ ass3.1 ▪ ass3.2 ▪ ass4.1 ▪ ass4.2 ▪ rj ▪ cf
3	Cathy's portfolio	▪ background questionnaire ▪ pre course assignment ▪ assignment 1, draft 1 ▪ assignment 1, draft 2 ▪ assignment 1, draft 3 ▪ assignment 2, draft 1 ▪ assignment 2, draft 2 ▪ assignment 3, draft 1 ▪ assignment 3, draft 2 ▪ assignment 4, draft 1 ▪ assignment 4, draft 2 ▪ reflective journal ▪ course file	▪ quest. ▪ ass0 ▪ ass1.1 ▪ ass1.2 ▪ ass 1.3 ▪ ass2.1 ▪ ass2.2 ▪ ass3.1 ▪ ass3.2 ▪ ass4.1 ▪ ass4.2 ▪ rj ▪ cf
4	Daniel's portfolio	▪ background questionnaire ▪ pre course assignment ▪ assignment 1, draft 1 ▪ assignment 1, draft 2 ▪ assignment 2, draft 1 ▪ assignment 2, draft 2 ▪ assignment 3, draft 1 ▪ assignment 3, draft 2 ▪ course file	▪ quest. ▪ ass0 ▪ ass1.1 ▪ ass1.2 ▪ ass2.1 ▪ ass2.2 ▪ ass3.1 ▪ ass3.2 ▪ cf

5	Songezo's portfolio	▪ background questionnaire ▪ pre course assignment ▪ assignment 1, draft 1 ▪ assignment 1, draft 2 ▪ assignment 1, draft 3 ▪ assignment 2, draft 1 ▪ assignment 2, draft 2 ▪ assignment 2, draft 3 ▪ assignment 3, draft 1 ▪ assignment 3, draft 2 ▪ assignment 4, draft 2 ▪ assignment 4, draft 3 ▪ course file	▪ quest. ▪ ass0 ▪ ass1.1 ▪ ass1.2 ▪ ass 1.3 ▪ ass2.1 ▪ ass2.2 ▪ ass2.3 ▪ ass3.1 ▪ ass3.2 ▪ ass4.2 ▪ ass4.3 ▪ cf
6	Anastelle's portfolio	▪ background questionnaire ▪ pre course assignment ▪ assignment 1, draft 1 ▪ assignment 1, draft 2 ▪ assignment 2, draft 1 ▪ assignment 2, draft 2 ▪ assignment 3, draft 1 ▪ assignment 4, draft 1 ▪ course file	▪ quest. ▪ ass0 ▪ ass1.1 ▪ ass1.2 ▪ ass2.1 ▪ ass2.2 ▪ ass3.1 ▪ ass4.1 ▪ cf
7	Interviews	▪ Initial interview with Vacintha 11/10/99 ▪ Initial interview with Songezo 13/10/99 ▪ Initial interview with Daniel 14/10/99 ▪ Initial interview with Anastelle 14/10/99 ▪ Initial interview with Anton 14/10/99 ▪ Initial interview with Cathy 14/10/99 ▪ Follow up interview with Vacintha 13/03/00 ▪ Final interview and site visit with Vacintha 10/10/00 ▪ Final interview and site visit with Anton 12/10/00 ▪ Final interview and site visit with Cathy 16/10/00 ▪ Final interview and site visit with Songezo 20/10/00 ▪ Final interview and site visit with Daniel 30/10/00 ▪ Final interview and site visit with Anastelle 31/10/00 ▪ E-mail interview with Wendy 29/02/00 ▪ E-mail interview with Jane 20/02/00 ▪ E-mail interview with Wendy 06/03/00 ▪ E-mail interview with Wendy 05/03/01 ▪ E-mail interview with Lawrence 06/03/01 ▪ E-mail interview with Eureka 02/03/01	▪ pers.com V-11/10/99 ▪ pers.com S-13/10/99 ▪ pers.com D-14/10/99 ▪ pers.com Ana-14/10/99 ▪ pers.com Ant-14/10/99 ▪ pers.com C-14/10/99 ▪ pers.com V-13/04/00 ▪ pers.com V-10/10/00 ▪ pers.com Ant-12/10/00 ▪ pers.com C-16/10/00 ▪ pers.com S-20/10/00 ▪ pers.com D-30/10/00 ▪ pers.com Ana-31/10/00 ▪ e-mail W- 29/02/00 ▪ e-mail J- 20/02/00 ▪ e-mail W-06/03/00 ▪ e-mail W-05/03/01 ▪ e-mail L-06/03/01 ▪ e-mail E-02/03/01

8	Observation notes	- National workshop 10 - 12/09/99 - Western Cape regional tutorial 17/10/99 - Western Cape regional tutorial 06/11/99 - Western Cape regional tutorial 28/11/99 - Western Cape regional tutorial 20/01/00 - Eastern Cape regional tutorial 22-23/01/00 - National workshop 04-06/02/00 - Western Cape regional tutorial 17/02/00 - Western Cape regional tutorial 09/03/00 - Industry tutorial 10/03/00 - Eastern Cape regional tutorial 10 - 11/03/00 - Western Cape regional tutorial 13/04/00 - Industry course tutorial 15/04/00 - Western Cape regional tutorial 06/05/00 - National workshop 07-09/07/00 - Short Courses in Environmental Education Meeting 26/10/00 - Tutors Workshop 27-29/10/00 - Research Journal Sept 1999 - August 2001	- obs.notes NW-10 - 12/09/99 - obs.notes WCTG-17/10/99 - obs.notes WCTG-06/11/99 - obs.notes WCTG-28/11/99 - obs.notes WCTG-20/01/00 - obs.notes ECTG-22 - 23/01/00 - obs.notes NW-04 - 06/02/00 - obs.notes WCTG-17/02/00 - obs.notes WCTG-09/03/00 - obs.notes ITG-10/03/00 - obs.notes ECTG-10 - 11/03/00 - obs.notes WCTG-13/04/00 - obs.notes ITG-15/04/00 - obs.notes WCTG-06/05/00 - obs.notes NW-07 - 09/07/00 - obs.notes EEMeet 26/10/00 - obs.notes TW 27-29/10/00 - RJ
9	Course processes	- National workshop programmes - Western Cape Tutorial Programmes - Eastern Cape Tutorial Programmes - Industry Tutorial programmes - Resources - ECTG - Resources - WCTG - Assessment criteria - ECTG - Assessment criteria - WCTG - Assessment criteria - ITG	- NW - WCTG - ECTG - ITG - ECTG - res. - WCTG - res - ECTG - AC - WCTG - AC - ITG - AC
10	Constructs Analytic memos	- Anton's construct - Vasitha's construct - Cathy's construct - Daniel's construct - Songezo's construct - Anastelle's construct 1 - Academic Background 2 - Professional context 3 - Course expectations 4 - Working with the course orientation and aims 5 - Work based assignments 6 - Use of core texts 7 - Mediating course readings 8 - Assessment 9 - Conceptual understanding 10 - Contextual relevance 11 - Critical reflection 12 - Praxis 13 - Participation and interaction 14 - Personal and professional development	- C1 - C2 - C3 - C4 - C5 - C6 - AM1-AB - AM2-PC - AM3-CE - AM4-O&A - AM5-WBA - AM6-CT - AM7-CR - AM8-A - AM9-CU - AM10-CR - AM11-CRIT - AM12-P - AM13-P&I - AM14-PPD

APPENDIX TEN

EXAMPLE OF COMMUNICATION REQUESTING COMMENTS ON CONSTRUCTS

Vacintha Moonsamy
Rylands Primary School
College Road
Athlone

Fax No: 633 3115

02 June 2001

Hi Vacintha

How are you? I can imagine that things are quite hectic at school as they always are in Cape Town. I never thought that I would miss the craziness of education in South Africa, but I do. So do enjoy the crazy moments.

If you remember when I was back in SA, I told you guys that I would be working on narratives / constructions for each of you as case study participants in my research, and then sending them out to you for comment. Well the drafting of the first narratives took a bit longer than anticipated and they are only now ready for comment.

Attached is a copy of your narrative / construction for your comment. Could I ask that you comment on it by **22 June 2001** and return it to me via the post. I will attach my address below.

Could you please try to comment as broadly as possible on:

- 1) anything that I have written here;**
- 2) any further details which you have about what I have written;**
- 3) any aspects which come to mind wrt what I have written, your involvement in the course, your professional practice;**
- 4) a sort of reflections on reading the narrative and reflecting on your professional development in the course.**

Could you please make your comments in the text of the narrative.

In addition to circulating these narratives to the individual participants, I would also like to circulate them to the tutors in the Western Cape and one of your peers in the course. As tutors I would like to send it Wendy and Eureka for comment. I will also be circulating them to Heila, for comment, as my supervisor. I would also like you to suggest one of your peers whom you would like to comment on the construction. Also could you let me know whether it suits you that I send the narratives / constructions out to the tutors as I suggest. Could you let me know this via Anton please, as soon as possible, so that I could send it out soonest.

Hoping to hear from you soon.

Glenda Raven
Pieter Jozef Nauwelaertsstraat 7
2600, Berchem
Antwerpen, Belgium

glerc@yucom.be

APPENDIX ELEVEN

FINAL CONSTRUCTS OF THE SIX CASE STUDY PARTICIPANTS

FINAL CASE STUDY CONSTRUCTIONS - APRIL 2002

CONSTRUCTION 1 - ANTON FORTUIN

Anton works at the Centre for Conservation Education in Cape Town, was part of the 1999/2000 course, and part of the Western Cape regional tutorial group. I chose Anton as one of the case study participants because his pre-course assignment reflected a keen interest in teacher education programmes.

DATA SOURCES USED

1. Anton's Portfolio (DF1)

- Background questionnaire (quest.)
- Pre course assignment (ass0)
- Assignment 1 - draft 1 (ass1.1)
- Assignment 1 - draft 2 (ass1.2)
- Assignment 2 - draft 1 (ass2.1)
- Assignment 2 - draft 2 (ass2.2)
- Assignment 3 - draft 1 (ass 3.1)
- Assignment 3 - draft 2 (ass3.2)
- Assignment 4 - draft 1 (ass4.1)
- Assignment 4 - draft 2 (ass 4.2)
- Course file (cf)

2. Interviews (DF7)

- First interview 14/10/99 (pers.com Ant-14/10/99)
- interview 12/10/00 (pers.com Ant-12/10/00)

3. Observation notes (DF8)

- Western Cape regional tutorial 17/10/99 (obs.notes 17/10/99)
- Western Cape regional tutorial 06/11/99 (obs.notes 06/11/99)
- Western Cape regional tutorial 28/11/99 (obs.notes 28/11/99)
- Western Cape regional tutorial 20/01/00 (obs.notes 20/01/00)
- National Workshop 04 - 06/02/00 (obs.notes 04 - 06/02/00)
- Western Cape regional tutorial 17/02/00 (obs.notes 17/02/00)
- Western Cape regional tutorial 13/04/00 (obs.notes 14/04/00)
- National Workshop 07 - 09/07/00 (obs.notes 07 - 09/07/00)
- Site visit 12/10/00 (obs.notes 12/10/00)

4. Comments on constructions (DF1)

- Comments from Wendy (C1)
- Comments from Olwen (C2)
- Comments from Heila (C3)

1. ACADEMIC BACKGROUND AND WORK CONTEXT

PARA 1/1 Anton initially completed a Bachelor of Arts (BA) degree, followed by a Higher Diploma in Education (HDE) at the University of the Western Cape (UWC) and completed these studies in 1988. His major subjects, in his BA degree, were history and afrikaans (DF7, pers.com Ant-12/10/00). In 1995, as a result of feeling '*... like I was getting stuck, not developing*' and a need to '*... know more about the socio-historical context of education in SA*...', he registered for a Bachelor of Education (B.Ed) degree at UWC and completed this in 1996 (DF7, pers.com Ant-12/10/00). He found the course very interesting and is happy that he did it, since he now feels that *he knows more about the environment and the complexity of SA society* (DF7, pers.com Ant-12/10/00). In support of his work at the Centre for Conservation Education (CCE), Anton recently completed a waste management course offered by the Fairest Cape Association (FCA) (DF1, quest). If he were to further his studies he is keen to get involved in '*... empowering teachers to do EE at schools ...*' (DF1, quest.).

PARA 1/2 He started his teaching career at Strand High School, where *he taught afrikaans and history* to learners from grade eight (8) to twelve (12), for the first three (3) years. He then moved into *biology* as the need for biology teachers was identified at the school. He taught in this subject area for ten (10) years, and as a result of the impending rationalisation of teachers in the Western Cape, he decided to move to another school. He taught at Gordon High School for six (6) months (DF7, pers.com Ant-12/10/00). While teaching, he notes that *he always took kids out on hikes and camps as this was his hobby*, and at the time he thought that this was environmental education. While teaching *he was keen to leave the profession*, but did not want to go into any job. When the job at the CCE was advertised he applied for it and started there shortly afterward (DF7, pers.com Ant-12/10/00). He notes that *the job was an opportunity to '... do something which I have a passion for ... when it was a hobby I used to take learners on weekends, and now I had an opportunity to make a career out of it ...'* (DF7, pers.com Ant-12/10/00). The job was advertised as one of '*... working with learners and teaching them*

about the environment', and at the time he interpreted the job as teaching learners about '... the wonder out there ...' (DF7, pers.com Ant-12/10/00). passion as motivation

PARA 1/3 Anton currently works at the CCE, and the main focus of his job is *'... teaching environmental education to school groups and teachers'* (DF1, quest). His job further entails *networking with other environmental organisations, working together with other organisations in workshop presentation and co-ordinating specific environmental calendar days* (DF7, pers.com. Ant-12/10/00). Being *'... second in charge'* at the centre he is *involved in a lot of administration and also co-ordinates the Walters/ABSA school's project* (DF7, pers.com. Ant-12/10/00). The Walters/ABSA school's project involves the participation of 50 schools and the co-ordination involves inviting schools to participate in the project, running workshops to assist teachers in undertaking projects at their respective schools and then school visits to support the implementation of projects (DF7, pers.com Ant-12/10/00). He is also involved in *'... curriculum development'* at the centre (DF1, quest.), *developing learning programmes for visiting schools and teachers* (DF7, pers.com Ant-12/10/00).

PARA 1/4 He has always had an interest in *'... teacher education',* and feels that this should be one of the focus points of the CCE (DF7, pers.com. Ant-12/10/00). However at the moment teacher education is not one of the main focus areas at the CCE (DF7, pers.com. Ant-12/10/00). Earlier in the year (2000) he ran a workshop for teachers involved in the Walters/ABSA school's project and was able to draw on his experience in *praxis / application of the course* the course to inform this workshop. He was able to draw on his understanding of the environment and, he feels, was able to support teachers in exploring environmental issues at their schools a bit better (DF7, pers.com. Ant-12/10/00). This workshop was run in April 2000 and he was able to draw on some of the ideas from his assignment 4, to inform the workshop programme, in terms of *'... my understanding of the environment and guiding teachers who are going to lead learners trying to assist them and help them to understand the issues better'* (DF7, pers.com Ant-12/10/00). *praxis / application / applied competence*

PARA 1/5 Anton first heard about the Rhodes University / Gold Fields course about four (4) years ago at a slide show run by the Wildlife and Environment Society of South Africa (WESSA) (DF7, pers.com. Ant-12/10/00). At the time he was keen to get more involved in environmental education (EE) (DF7, pers.com. Ant-12/10/00). The person whom he spoke to at the slide show referred him to Rhodes University and the course (DF7, pers.com. Ant-12/10/00). He didn't feel that the course was appropriate to him while he was teaching and feels that he enjoyed the course more now than if he had done it while teaching (DF7, pers.com. Ant-12/10/00). He feels that ee is his '*... bread and butter now and not just a hobby ...*' (DF7, pers.com Ant-12/10/00). Anton notes that his immediate expectations were '*... to give me a better understanding of my work ... and also to have a better understanding of environmental education*' (DF1, quest). '*... I would like to know more about the theory behind EE*' (DF1, ass0). Prior to doing the course, he feels that he had his own ideas of what ee was about but he '*... wanted to know more about environmental education ...*' (DF7, pers.com Ant-12/10/00). He decided to do the course while at CCE to gain more clarity on the things that were bothering him at work like why people just come to the centre for an outing and don't do anything beyond this visit (DF7, pers.com Ant-12/10/00). *learning associated with discomfort + worry* Through the course he wanted to '*... equip ...*' himself as an individual '*... to teach about ee ...*', understand why people do things the way they do and change the way he approaches people on environmental issues (DF7, pers.com Ant-14/10/99). He expected to come to the course and be told what ee was all about, but he '*... realised that it wasn't like that, I had to explore it for himself*' (DF7, pers.com. Ant-12/10/00). Wendy, tutor for the Western Cape regional tutorial group felt that Anton '*was looking for a ... recipe for good ee practice that he could follow*' (DF1, C1). She notes that he learnt along the way that he had to trust his insight, experience and knowledge to start the process with the teachers that he interacts with (DF1, C1). The course has met his expectations and '*... that is why it has meant such a lot to me, ... while doing the course you realise that you can also talk to other people with confidence about your work situation ...*' (DF7, pers.com Ant-12/10/00). He notes that after the course *he can now talk with confidence, but not as an expert because there is still so much that he has to learn* (DF7, pers.com.12/10/00).

*confidence
about
work*

2. PROFESSIONAL DEVELOPMENT IN THE GOLD FIELDS COURSE

use as in giving perceptions

PARA 2/1 Anton notes that when he started the course he saw the environment as '... a physical world of nature at risk ...' (DF1, ass4.1). He now has a broader understanding of the environment as '... more than bio-physical' (DF7, pers.com Ant-12/10/00) and that '... which also include political, social and economic processes where people are at the centre of the environment' (DF1, ass4.1). He recognises the narrow view within which environment was reflected in school syllabi and feels that it is important '... for teachers to understand the historical context of our SA environment' (DF1, ass4.1). In his precourse assignment Anton notes that his biggest challenge is '... to change the way in which people ... think and respond to the environment' (DF1, ass0). He notes the need for '... our ideas ... to change' since '... many still think of the environment as nature areas ...' and '... ee as the process we should use to protect these natural areas' (DF1, ass0). He further notes that environmental problems are the result of our modern lifestyles and are not only about the natural world, but are '... caused by and related to political, social and economic factors' (DF1, ass0). In introducing assignment 4, Anton notes that many people still regard the environment as natural areas and ee as a way to protect these, and he notes that '... our ideas need to change ...' (DF1, ass4.1).

Draws on theoretical perspectives to clarify ee + what they do.

PARA 2/2 In describing the aims, objectives and principles of one of the lessons at the centre, Anton notes that the centre is doing '... more environmental education than just simply conservation education' (DF1, ass2.1). He references Irwin (1990) in the course file to describe what he sees as conservation education, '... conservation education as a movement tended to concentrate on conservation as the wise use of (mainly) natural resources and basic ecology and seldom concerned itself with the political, social or even the built environment' (DF1, ass2.2). He further motivates for his statement that the centre does more than conservation education by noting that in one of the lessons at the centre '... I do focus on the politics, history and influence of the built environment on the bio-physical environment ... they ... do 'hands on' activities where the learners explore the river with regard to the human and natural influence on the river' (DF1, ass2.2).

PARA 2/3 On 06/11/99, close to the start of the course, in his course file, Anton defines environmental education for himself as being '*... a way of educating people to understand the interrelatedness between humans and the environment in such a way that they would respond in doing something for the environment*' (DF1, cf). By referencing the course materials, '*... environmental education should empower all peoples and promote opportunities for grassroots democratic change and participation* (Theme II, Core text, p.12) Anton appears to recognise environmental education as a process towards social change (DF1, ass2.1). In the workshop, developed for assignment 4, he planned to use a quote from one of the readings in the course file '*... the new constitution of South Africa enshrines the right of every citizen to an environment that is not detrimental to his or her health ... there is a great challenge for teachers to provide a range of learning opportunities for learners to not only know his or her right, but to contribute to a healthy environment* (Janse van Rensburg, E., *Enabling Environmental Education as a Cross Curricular Concern in Outcomes Based Learning Programmes, P8*)' to highlight '*... the role of teachers to foster change toward sustainable community life in a healthy environment*' (DF1, ass 4.1). In motivating for developing the workshop Anton notes that through teachers exposing learners to environmental issues '*... they can also contribute to education reform to address the need of sustainable living and social justice in SA*' (DF1, ass4.1).

PARA 2/4 For assignment 1, an issue which Anton has identified in his work context is the role that teachers should play to introduce ee into the curriculum at the schools, '*... die rol wat die opvoeder veronderstel is om te vervul om toe te sien dat omgewingsopvoeding binne skole tot sy reg behoort te kom*' (DF1, ass1.1). In introducing the assignment, Anton notes the increasing pressure on renewable and non-renewable resources, which places pressure on the environment, which might imply an initial bio-physical focus to the issue being explored (DF1, ass 1.1; DF1, ass1.2). The impacts of the issue are not fully explored in the assignment and in exploring the implications of teachers not integrating ee into their teaching, Anton notes that a valuable opportunity is being missed and the fact that what learners learn in school is often reflected in what

they do in the community (DF1, ass1.1). Causes of this issue were described in a bit more detail, looking at the previous education dispensation and the way in which environmental issues were approached in the school syllabi, focusing on bio-physical issues only. He notes that with the introduction of Outcomes Based Education (OBE) in schools teachers lack the necessary confidence to introduce environmental issues at their school. Further causes sees schools as being an extension of the government, leading to a lack of community ownership of schools and recognises teachers apathy towards environmental issues and therefore not seeing the benefit of it at schools (DF1, ass1.1).

PARA 2/5 Anton describes the function of the CCE as '... *teach[ing] environmental education to primary and secondary school groups, ...*' (DF1, ass0 ; DF1, ass2.1) with each of the lessons '*... having a conservation theme*' (DF1, ass 2.1). '*... we encourage learners and teachers to be more involved in practical environmental projects that will benefit their community*' (DF1, ass0 ; DF7, pers.com Ant-14/10/99 ; DF8, obs.notes 28/11/99). This aim of these lessons are reiterated when he describes it as '*... die doel van die lesse is om die leerders en hul opvoeders omgewingsbewus te maak met die idee dat hul omgewingsbewustheid in aksie omgeskakel sal word*' (DF 1, ass1.1). He recognises action as an integral part in realising its potential in schools (DF1, ass1.1) and hopes that the lessons encourage '*... learners and teachers to be more involved in practical environmental problems*' (DF1, ass2.1). '*Although we try to make the learners environmentally more aware...*' (DF1, ass 2.1 ; DF7, pers.com Ant-14/10/99), '*... we would like them to take the idea of environmental awareness further and put it into action... that is why I am focusing on the role of the educator ... so that he/she take the environmental awareness and put it into action*' (DF1, ass2.1). This idea of the centre providing for environmental awareness in the hope that teachers will take action back at their school is further reiterated in '*... if the educator is perhaps better equipped with awareness, knowledge and skills (from the Centre), then he/she might feel more competent to participate in environmental issues at the school or even in the community*' (DF1, ass2.1). The idea of fostering environmental consciousness and awareness in learners in the hope that '*... [it] will spark off something at the school ... [learners] should do something about it (water*

usage in the WC) is reflected as a continued vision which Anton has of the school programme at the centre (DF7, pers.com Ant-12/10/00).

PARA 2/6 In reflecting on some of the methods that they use at the centre, Anton describes the programme as '*... talk about old things and the need to look after it...*' (DF7, pers.com Ant-14/10/99). In some lessons they have to '*... get the content through to learners ...*' and do so '*... by explaining ...*' (DF1, ass3.1). He further notes some co-operative methods '*... focusing on skills ...*' and a strong feature at the centre as being that of fieldwork. He notes that at the centre they are '*... more engaged in fieldwork and the verbal transmission of facts*' and most methods are centred on '*... changing attitudes, values and behaviour ...*' (DF1, ass 3.1). He further notes that these methods are '*... mostly influenced by the behaviourist and constructivist education theories*' (DF1, ass3.1). In this assignment Anton later describes the Walters/ABSA schools project in which learners identify an environmental issue, plan together and then take action, and I am assuming that this is where he sees the constructivist theory being reflected, as he notes that '*... learners are actually doing something ... instead of just absorbing facts or experiencing the natural wonders of the environment*' (DF1, ass3.1). He notes that though they are faced with other ways of addressing environmental issues, eg.OBE, '*... we tend to fall back on the ones we are most comfortable with*' (DF1, ass3.2). He concludes the assignment by noting that '*... each of our lessons have a role to play in environmental education ... we can only do in an urban area what we are capable of*' (DF1, ass3.1). In a discussion of core text three (3), Anton notes that all orientations (educational) have some positives and negatives (DF8, obs.notes 20/01/00). He notes that to get to education for the environment you need to explore education about and in the environment (DF8, obs.notes 20/01/00) and that at the centre they do a bit of education about, in and for the environment (DF8, obs.notes 17/02/00).

PARA 2/7 In talking about the workshop, Anton notes that he would like to assist teachers and '*... explain to them what the environment is all about*' (DF7, pers.com Ant-12/10/00). Later he notes that he would '*... try to define the term environment coming*

from the teachers ... try not to tell them, but use the feedback from previous discussions to see how it works' (DF7, pers.com Ant-12/10/00). Anton notes that what he has found significant about the course is that he realised that he can't tell people to do certain things, but has to '*... open the avenues for them to engage with the process ... I can never tell anyone what to do, but I can open up windows for them*' (DF7, pers.com Ant-12/10/00).

PARA 2/8 Anton's search for clarity in what he does is highlighted in his precourse assignment, when he begins to question '*... whether our centre really achieve with ee what we initially set out to do*' (DF1, ass0). He notes that it is important to consider the history of the centre in understanding '*... why we do what we do*' (DF8, obs.notes 17/02/00). He reflects on the name of the centre and does not feel that it represents the true value of what is undertaken at the centre. He feels that the name CCE reflects too narrow a view of what they do at the centre (see section 2.1).

PARA 2/9 Anton further feels the need to reflect on his own role at the centre in motivating teachers to implement environmental education programmes at the school, '*... ek is nie altyd seker nie of ek die nodige doen om opvoedeers te inspireer om 'n groter rol te vervul om omgewingssopvoeding tot sy reg te laat kom*' (DF1, ass1.1). In presenting assignment 2, he poses the question '*... why do teachers return to the centre over and over again*' (DF1, ass2.1) and continues to question the role of the centre (DF8, obs.notes 28/11/99). Through the course he feels that he has started to question his own thinking and the way of doing certain things, regarding the content of the course and his working environment (DF1, ass4.2). He notes that '*... I have learnt to reflect more on my practice ... the unanswered questions since my first assignment started to jell as I progressed on the course*' (DF1, ass4.2). In reflecting on his own learning in the course, Anton notes that he is starting to question more what he is doing, and then plan and approach things much better. He constantly questions what is the purpose of what he is doing (DF7, pers.com Ant-2/10/00).

PARA 2/10 In assignment 2, Anton does not delve into any of the objectives of the centre, but notes that there are no guiding principles supporting the aim of '*... assisting teachers to be instrumental in recognising the importance of environmental issues*' (DF1, ass2.1). This might imply that no objectives currently exist at the centre and Anton cites this as a possible reason for teachers just visiting the centre year after year and not initiating any environmental education programmes back at their school. He notes that he would '*... surely have to look ... at the principles of our Centre with some guidelines from the international arena*' but doesn't use the assignment as an opportunity to do this (DF1, ass2.1). In concluding assignment 2, Anton notes that through this assignment he has had an opportunity to reflect on what they do at the centre and why (DF1, ass2.1). The question of why they do things the way that they do could have been explored in a bit more detail, in the context of the assignment, to better understand approaches and possible alternatives to this teaching programme.

PARA 2/11 For assignment 4, and in response to the environmental issue which he identified in his assignment work (DF1, ass1.1), Anton developed a workshop programme to be run with teachers (DF1, ass4.1). In motivating for the workshop, he notes that through the course he realised that there was more to the environment than the bio-physical world and felt that '*... there must be many teachers out there who are under the same illusion*' (DF1, ass4.1). Anton notes that the aim of the workshop is to '*... allow teachers to explore and understand the term environment and to link it to the curriculum*' by giving '*... teachers the opportunity to question, share or discover new ideas about the term environment*' (DF1, ass4.2). He hopes through the workshop '*... to encourage teachers to be part of environmental education as a process*' (DF1, ass4.2). After a short welcome and icebreaker '*... to let the teachers feel welcome, relax*', the workshop programme includes a short discussion of '*a healthy environment*', using a quote from the ^{reading his work} reading in the course file by Janse van Rensburg & Lotz (1998) (see section 2.1). This discussion is followed by an enviro picture building activity, 'The Urban Jungle', since Anton feels that '*... most of the teachers will be more or less familiar with this environment*'. In groups teachers are required to discuss the causes of various

environmental issues identified in the pictures. This activity is followed by teachers unpacking a specific environmental issue. Here Anton has used a questionnaire to get an idea from teachers as to what they see as environmental issues and used these responses in this activity. Using the compass rose, and in groups teachers are to discuss causes, effects and responses to issues, using the categories of political, social, economic and Biophysical. Each group will then report back and Anton notes that here he will stress that *'... problems (in the environment) are linked to political, social and economic processes and concerns, as well as to the biophysical processes ... and that this socio-ecological picture of the environment puts people at the centre'* citing O'Donoghue from ~~one of the course readings~~ ^{use of theory to share perspectives}. Anton feels that once *'... teachers have a better understanding of the environment, then they would obviously want to know how they could implement this in their classroom'*. The next activity introduces teachers to the active learning model and teachers in groups, after identifying a specific environmental issue, need to develop a learning programme around this issue. The workshop is to be concluded with an evaluation in which Anton hopes to *'... establish the strengths and weaknesses of the workshop'* to inform the planning of future workshops (DF1, ass4.2). Anton completed this assignment, just about the time that Curriculum 2005 was reviewed. The implementation of the workshop was put on hold, till more clarity could be reached on the *'...scaled down version of the curriculum'*. He also felt the need to change the content of the workshop in light of the Curriculum 2005 review and in response to the needs of teachers within this review process (DF1, ass4.1).

PARA 2/12 In planning the workshop programme, Anton notes that teachers with whom he works *'... comes from different environments ... been exposed to different socio-economical and historical backgrounds'* and as such he felt the need to learn more about the teachers who were going to participate in the workshop. He therefore sent out a questionnaire for teachers to fill out, to get a sense of how they view environment and what they considered to be environmental problems (DF1, ass4.1).

PARA 2/13 When I visited Anton for the site visit and final interview, he had a class from a local high school and taught the 'rocky shores' lesson on the beach. He explained a lot of things and notes that because the school arrived late, there were time problems and he used the explaining method to speed up the lesson. He also used a worksheet to allow learners to explore different living species in the water and features of the shore (DF8, obs.notes 12/10/00).

PARA 2/14 One of Anton's colleagues (Olwen Gibson) notes that in her interaction with Anton she often experienced him expressing frustration at '... the narrow view of ee held by some of his colleagues, this view also being embodied in the name of the centre. This frustration Olwen notes in relation to '... our changes in thinking as our understanding of ee, its theory, context and practice grew' (DF1, C2). Olwen interprets the workshop that Anton planned for teachers as being a response to a frustration often felt in his work context. He often discussed his frustration in meeting with visiting learners for a period of three (3) hours and then not having contact with them again (DF1, C2). She notes that Anton was always looking for ways in which he could follow up with learners after they had left the centre, and she sees this as a way of '... extending the scope of the three hour lesson by means of assisting to empower teachers to do this themselves' (DF1, C2).

*Eg. of interaction
with colleagues to
better understand.*

PARA 2/15 When Anton presented his ideas for assignment 1 and the issue of teachers' apathy to ee in their schools, one of his colleagues in the course (Jacky Wibberley) suggests that he looks at his own role in supporting the teachers. Anton's response is that he needs to look at the role of the centre together with his own role, which suggests that this interaction might have encouraged him to explore the issue from a different perspective to what he initially intended. This perspective changed to looking at the role that he and the centre plays rather than what teachers are not doing (DF8, obs.notes 17/10/99). Anton notes the need to '... *empower teachers to take action*' and is challenged by the tutor (Razeena) in questioning him possessing the tools to give away to teachers, which appears to have started him thinking about what he does and why (DF8, obs.notes 17/10/99).

PARA 2/16 Anton notes that while doing assignment 2 and reviewing the mission statement of the centre, he took the opportunity to talk to his head about the lack of clarity in these, who admitted that it is something that they urgently need to look at (DF1, ass2.2). Through interaction with fellow course participants, and a discussion to clarify the distinction between aims and objectives, Anton appears to clarify the aims of the centre as being '*... addressing conservation issues*' rather than this being one of the objectives of the centre as initially stated. (DF8, obs.notes 28/11/99).

PARA 2/17 In considering his options for assignment 4, Anton notes that his big dilemma in trying to decide on a response to the issue he was seeking to address, was how he was going to get teachers interested in the environment, (DF1, ass4.1) to encourage '*... physical involvement in doing something and not just being aware of it ... , environmental awareness vs environmental activism ... how to expose teachers to ee ... get teachers to do ...*' (DF7, pers.com Ant-14/10/99). He notes that through the course he was able to reflect on his own approaches in teaching and decided on a workshop, which would allow discussions around the concept of the environment (DF1, ass4.1). Anton notes that the workshop was developed with the assistance from tutors and participants in the RU/GF course (DF1, ass4.2). *howing a resource in course in formulating a programme* The questionnaire that he used for the pre workshop information is one that Jackie used with her colleagues to gauge their understanding of the environment (DF1, ass4.2). *Jackie's questionnaire* Anton notes how the experience in the course has helped him in sharing his own understanding of the environment with teachers and in '*... trying to assist [teachers] ... to understand the issues much better*' (DF7, pers.com Ant-12/10/00).

PARA 2/18 Anton notes that after the course, he feels less discomfort about what he is doing/not doing at the centre, because he knows what the possibilities are and '*... he feels more positive about things*' (DF7, pers.com Ant-12/10/00). His interaction with people *Eg of interactions bringing about clarity* (both on the course and others) has given him the assurance that the way to go *is working* with the teachers. His colleague has also confirmed that '*... they need to support ... teachers to take on ee projects at their schools*' (DF7, pers.com Ant-12/10/00). He always knew that he wanted to support schools, but didn't know how he was going to get

there. He now has a sense of where he is going and the course has facilitated this '... *gaining a clear perspective on environmental issues, the crisis that is out there and how we should respond*' (DF7, pers.com.12/10/00).

Intention - what he wants to do

PARA 2/19 Anton appears to have worked quite a bit with the core text, as reflected in the notes that he made in these core text sheets in his course file. He completed activity 1.1 in the course file and in the core text 1 sheets he notes the question '... *why is there a greater need for teachers to be involved in ee*' (DF1, cf). He also appears to have used some of the theoretical ideas in the core text to inform the workshop that he used eg. page 4 and 5 of core text 1, the model of the environment to assist teachers in exploring the concept (DF1, cf). He appears to question his practice in the core text and in relation to it. On page 14 of core text 1 he writes '... *so if you do have an awareness and understanding of environmental issues, what would /should the next step be? Are you going to put your understanding of environmental issues into practice? And if so how are you going to do it? Action -NB*' (DF1, cf). He also notes various principles in core text 2, which he notes as important in what he does, and writes the question '... *if you change the attitude, will you be able to change the values and feelings*' (DF1, cf).

role of theory - used to understand his practice

PARA 2/20 Anton appears to have worked quite closely with the course materials and drawn on some of these theoretical ideas to understand his practice (DF1, cf) (see previous sections). Anton appears to have drawn on a reading in the course file, 'The emergence of socially critical orientations to ee in SA' in arriving at a '... *definition of ee*' for himself as he notes this in the margin of the reading (DF1, cf). In one of the readings in the course file he highlights the argument about the contradictions between ee and schooling and notes the following in the margin '... *we say it, but we don't do it at the centre*' (DF1, cf).

PARA 2/21 In one of the readings in Anton's course file, he rewrites the ideas reflected in the draft discussion document on environmental education, noting the need '... *to include environment in higher ed., teacher ed., colleges must prepare teachers*' and

continues by questioning '*... what about the teachers in service ... the role of the centre in this regard is very important*' (DF1, cf). This article might be where the idea for the teachers workshop originated and took shape in Anton's mind. In another reading, he notes the question '*... so how can we support the teachers*' (DF1, cf). He further notes that a reading in the course file (Lotz, 1996) helped him to answer a lot of questions in understanding what they do at the centre (DF8, obs.notes 17/02/00).

*theory used to
update practice*

PARA 2/22 Anton identifies various resources which he planned to use during the workshop (DF1, as 4.1). Some of these include resources from the course file, such as reading references, resources to which he had been exposed throughout the course, eg. the active learning model, the compass rose, enviro picture building game, and then others, such as newspaper articles (DF1, ass4.1).

PARA 2/23 In reflecting on the course, Anton notes that he was not always sure of how to put his thinking across in writing and he didn't always understand his own way of thinking (DF1, ass4.2). He notes that he sometimes found the language to be a problem, especially when he had to write '*... it was a bit of a struggle to organise my thoughts and to put them in order*' (DF7, pers.com Ant-12/10/00). On assignment 1 instruction Anton writes '*... stay focused ...*', '*... think focused, think small ...*', '*... jot down related issues ...*', '*... unpack the issue, use examples in the assignment*', '*... do not distance yourself from your working environment*', which appears to be ways in which he is seeking to clarify his thoughts in writing (DF1, cf).

PARA 2/24 He notes that the different perspectives to which he was exposed on the course, led him to developing a different perspective on environmental education, which sometimes led to conflict in the work situation. He however notes that this has helped him to deal better with these conflict situations in future (DF1, ass4.2). *Dealing better with conflict.*

PARA 2/25 Anton notes that understanding the environment much better is the one aspect in the course that gave him confidence in what he is doing (DF7, pers.com An

12/10/00). In reflecting on his professional development in the course, Anton notes that the cause has helped him to consider some kind of action on issues instead of just identifying them (DF7, pers.com Ant-12/10/00), which appears to have been his approach prior to the cause.

PARA 2/26 In April 2000, Anton ran a workshop similar to the one which he was planning for assignment 4. This workshop has not been run yet, but he reflects on the workshop that he ran in April and the insights gained from planning and running this workshop. He notes that the workshop provided him with insight into planning a workshop, how to *enhanced skills of planning + organizing* structure it, and how to make sure that you are addressing the needs of the people. One idea that worked particularly well, is requesting information from people to gauge their understanding of environmental issues, and this prompted him to include this in the planning for the assignment 4 workshop (DF7, pers.com Ant-12/10/00). In reflecting on the workshop programme, Anton is not sure whether a three (3) hour workshop will be sufficient for what he had planned, so he is considering a full day workshop when he does run it. He would like to encourage teachers to work with environment in the curriculum and to work with their colleagues (DF7, pers.com Ant-12/10/00).

FINAL CASE STUDY CONSTRUCTIONS - APRIL 2002**CONSTRUCTION 2 - Vasintha Moonsamy**

Vasintha teaches at Rylands Primary School, was part of the 1999/2000 GF course and one of the WC regional tutorial group participants. I chose Vasintha as one of the case study participants because she teaches at a primary school, and teachers in formal education was one of the professional roles identified in the previous research, of participants in the course.

DATA SOURCES USED**1. Vasintha's Portfolio (DF2)**

- Background questionnaire (quest.)
- Pre course assignment (ass0)
- Assignment 1 - draft 1 (ass1.1)
- Assignment 1 - draft 2 (ass1.2)
- Assignment 1 - draft 3 (ass1.3)
- Assignment 2 - draft 1 (ass2.1)
- Assignment 2 - draft 2 (ass2.2)
- Assignment 3 - draft 1 (ass 3.1)
- Assignment 3 - draft 2 (ass3.2)
- Assignment 4 - draft 1 (ass4.1)
- Assignment 4 - draft 2 (ass 4.2)
- Course file (cf)
- Reflective journal (rj)

2. Interviews (DF7)

- First interview 11/10/99 (pers.com. V-11/10/99)
- Follow up interview 13/04/00 (pers.com.V-13/04/00)
- Final interview 10/10/00 (pers.com V-.10/10/00)

3. Observation notes (DF8)

- Western Cape regional tutorial 17/10/99 (obs.notes 17/10/99)
- Western Cape regional tutorial 06/11/99 (obs.notes 06/11/99)
- Western Cape regional tutorial 28/11/99 (obs.notes 28/11/99)
- Western Cape regional tutorial 20/01/00 (obs.notes 20/01/00)
- National Workshop 04 - 06/02/00 (obs.notes 04 - 06/02/00)
- Western Cape regional tutorial 17/02/00 (obs.notes 17/02/00)
- Western Cape regional tutorial 13/04/00 (obs.notes 14/04/00)
- Western Cape regional tutorial 06/05/00 (obs.notes 06/05/00)
- National Workshop 07 - 09/07/00 (obs.notes 07 - 09/07/00)
- Site visit 10/10/00 (obs.notes 10/10/00)

4. Comments on construction (DF1)

- Comments from Wendy (C1)

1. ACADEMIC AND WORK BACKGROUND

PARA 1/1 Vasintha completed a Bachelor of Arts (BA) degree at the University of Cape Town (UCT), majoring in psychology and history (DF7, pers.com. V-10/10/00). She then went on to do a Higher Diploma in Education (HDE) qualifying her as a teacher (DF7, pers.com. V-10/10/00). It was not her initial idea to go into teaching (DF7, pers.com. V-10/10/00). She was initially interested in a career in speech therapy, but her application was sent in too late (DF7, pers.com. V-10/10/00). She saw teaching as a means en route to this as a career path, but in the end she opted to do a HDE and go into teaching (DF7, pers.com. V-10/10/00). She notes that going into teaching is something that just happened (DF7, pers.com V-10/10/00). Initially Vasintha notes that if she does further her studies, it would be in education but outside of the formal school context (DF2, quest). She doesn't have any immediate visions of leaving formal education as she feels comfortable here, and instead has decided to apply for a promotion post, either at her school or elsewhere (DF7, pers.com. V-10/10/00). She feels that in another job she will have to relearn other things, and in the business sector you need experience (DF7, pers.com. V-10/10/00). She considers herself a teacher '... who has no skills or experience to offer in the private sector (DF7, pers.com V-10/10/00).

PARA 1/2 Vasintha started her teaching career in Johannesburg (DF7, pers.com. V-10/10/00). She taught here very briefly and then joined her current school where she has been teaching for the past 8 and a half years (DF7, pers.com. V-10/10/00). Rylands Primary School is situated in the same area where she lives in fairly close proximity to her home. She teaches grade 5 in the subject areas of english, afrikaans, science, physical education and life orientation (DF7, pers.com V-10/10/00). She is also in charge of the sports department at her school, is currently the co-ordinator of the 21st anniversary celebrations and co-ordinates the school's garden club (DF2, quest). Though the new curriculum framework is being introduced at schools, she has not yet engaged with its introduction, since it has not yet been introduced at grade 5 level. She has also not had

much exposure to training in Curriculum 2005, but did request her colleagues to share some of their experiences in outcomes based education training (DF7, pers.com. V-10/10/00). This did however not happen since her request came at the time of the Curriculum 2005 review (DF7, pers.com. V-10/10/00).

PARA 1/3 Vasintha was one of the teachers at Rylands Primary School who initiated the formation of an environmental club in April 1999 (DF2, ass0). This was prompted by their concern about the physical conditions of the school and the fact that the school has to compete with other schools to attract learners (DF2, ass0; DF2, ass2.1 ; DF7, pers.com V-10/10/00). She felt that there was lots of talk of the poor state of the school grounds but nobody wanted to take responsibility for this, '*... we would sit together and chat that the grounds are terrible and there is too much litter, but nothing would be done*' (DF7, pers.com. V-10/10/00). She and two other colleagues initiated the formation of the club (DF7, pers.com V-10/10/00), which initially was referred to as the garden club (DF2, quest). The aim of the project was to get the school grounds in order and '*... beautify our school*' (DF2, ass0 ; DF2, ass2.1). Vasintha feels that if parents do not know anything about the academics at the school, then they rely on their first impressions from seeing the school (DF2, ass0; DF7, pers.com V-10/10/00). The aim of beautifying the school grounds involved the propagation of their own school nursery, '*... making the learners knowledgeable about indigenous plants*' and developing flower beds and a peace garden (DF2, ass0). Another aim specified for the project is to '*... nurture a love and respect for the environment*' (DF2, ass2.1). Three teachers at the school are involved in the project, with help from one parent (DF2, ass0; DF7, pers.com V-10/10/00), one school caretaker and a few learners (DF7, pers.com V-10/10/00). Vasintha notes that as teachers involved in the project, they have realised '*... the importance of getting parents on board*' (DF2, ass0). Initially the club undertook activities after school and whenever they had time, '*... it was done in an ad hoc way whenever something needed to be done*' (DF7, pers.com V-10/10/00), '*... during school holidays teachers and pupils came into school to plant and maintain the garden*' (DF7, pers.com. V-10/10/00). Vasintha feels that through this involvement by learners '*... we have observed that the pupils have become more*

environment conscious' (DF2, ass0). Vasintha notes that since the initiation of the idea of the peace garden, she has observed '*... a keen interest from the Junior Primary educators in our greening projects'* (DF2, ass0). The club has now been included as one of the extra mural clubs at the school with specific time allocated to its activities (DF7, pers.com V- 10/10/00). As a vision, Vasintha is quite keen to get the activities of the environmental club into the school curriculum (DF7, pers.com V- 11/10/99). The focus is still on the school grounds although her focus has shifted a bit '*... I realised that you can focus on the school grounds and planting maybe for one term, but afterwards you can draw it out to other activities as well ... I have introduced the group to this idea'* (DF7, pers.com. V-10/10/00). The club also now focuses on co-ordinating programmes for the different environmental days (DF7, pers.com V-10/10/00). She feels that this change has definately been brought about by her exposure to the course and her introduction to the environmental calendar days booklet on the course which she encourages the use of at her school (DF7, pers.com V-10/10/00). *researching her work*

PARA 1/4 She notes that at her school '*... ee is still confined to the environmental club but this year there has been a lot more activities'* than before, initially it was basically just gardening (DF7, pers.com V-10/10/00). All teachers are not involved in ee activities in the classroom and she feels that this is because ee in the curriculum has not yet been highlighted at the school (DF7, pers.com. V-10/10/00). She feels the need for joint planning to ensure the integration of ee into the classroom (DF7, pers.com V-10/10/00). This year she has been looking at things like AIDS with the environmental club learners. It is not part of the environmental club activities per se, but something that she decided to do herself and encourage other teachers to do as well (DF7, pers.com V-10/10/00). She notes that the garden has been used at the school as an outdoor classroom, with the junior classes establishing a small herb garden, harvesting the crop and selling it to the parents, and the grade five class used the garden during a lesson on plant reproduction (DF2, ass2.1 ; DF7, pers.com V- 11/10/99). Vasintha feels that since the formation of the environment club '*... there has been a noticeable change in the behaviour of some*

children ... they are eager to work in the garden and do not tramp plants as much as they did a few months ago' (DF2, ass2.1).

PARA 1/5 A previous teacher at the school used to arrange arbour day programmes and through this he got in touch with Kirstenbosch (DF7, pers.com. V-10/10/00). On arbour day employees of the National Botanical Institute (NBI) would come to the school and plant trees, and in this way the school became involved with Kirstenbosch (DF7, pers.com. V-10/10/00). In this way she made contact with Wendy and since the formation of the environmental club there has been closer contact with the Outreach Greening Programme at Kirstenbosch (DF7, pers.com. V-10/10/00). This year the school has received funding to continue on the Outreach Greening Programme, developing a garden at the school (DF7, pers.com V-10/10/00). Coupled to the Outreach Greening Programme, Vasintha notes that they felt the need for empowerment and attended workshops run by NBI and this is how she came to learn about the GF course (DF2, ass0). Vasintha felt that she needed '*... to know more about the environment and how to improve the environmental club*' which was when she started speaking to Wendy and heard about the course (DF7, pers.com V-10/10/00). Wendy had told her that she had done the course and found it very interesting, but provided no further details of the course orientation, nature, structure or content (DF7, pers.com V-10/10/00). With the introduction of OBE in schools, her aim of doing the course was twofold: (1) to '*... better understand the mechanics of Curriculum 2005 ...*' (2) to '*broaden my knowledge about the broad topic of environment ... it is my intention to return to school armed with the skills that I will acquire in the next year*' (DF2, ass0). She assumed the course would empower her to help the club back at school with the focus on gardening (DF7, pers.com. V-10/10/00). She notes that at every workshop '*... I went through a reflexive period where I wondered what I was doing here and do I fit in here*' (DF7, pers.com. V-10/10/00). Vasintha notes that the course did not meet her expectations since she assumed that it was about gardening and would help her in relation to the garden project at her school (DF7, pers.com V-10/10/00) '*... I thought the course would assist me with the greening of the school grounds... I thought I'd learn about the layout of the garden and gardening in general ... was I in for a surprise*' (DF2, rj).

In this light Melanie notes that, what Vasintha expected '*... was to be told (a recipe) what to do, how to do it and what she would need for her project at school*' (DF2, C2). She notes that the course was responding to her expectations of understanding the environment better, and she feels more confidence with OBE, since she is working with it more at school and is able to draw on some of the course readings in the course file (DF7, pers.com. 13/04/00). Vasintha feels that the course has encouraged her '*... to start thinking again, since she hasn't studied for a long time, ... about what she was doing and her approach to things*' (DF7, pers.com V-10/10/00). She also feels that the course has helped her to become a lot more confident since she is able to '*... share opinions more freely and is less worried about whether her opinions are correct or not*' (DF7, pers.com V-10/10/00). She feels that '*... everyone has different levels of understanding and do not see things the way you do ... you should not judge people's understandings which are different due to their experiences*' (DF7, pers.com 10/10/00). In commenting on the construction of Vasintha's professional development, both Wendy and Melanie (a colleague on the course) notes that the most outstanding aspect ^{developing confidence in expression} for them in Vasintha's professional development is her development of confidence in expressing her ideas, publicly (DF2, C1 ; DF2, C2). Wendy notes that the main obstacle that Vasintha needed to overcome in working in the WC group was that '*... a feeling of inadequacy and that other people knew more than she did*' (DF2, C1). In the same light Melanie notes that when she first met Vasintha she recognised '*... her insecurities, anxiety at being exposed to other participants who were perceived to be more knowledgeable, fear of having to state your opinions out loud to the group*' (DF2, C2). Wendy goes on to note that through the course '*... Vasintha is the person who gained the most self-confidence and was able to step out of a framework of low self value*' (DF2, C1). Through the course Melanie feels that she has '*... developed the confidence in herself to air her opinions, knowing that even others may differ from her, that does not make her opinions invaluable or irrelevant*' (DF2, C2).

2. PROFESSIONAL DEVELOPMENT IN THE GOLD FIELDS COURSE

PARA 2/1 As an introduction to her pre course assignment, Vasintha notes that she feels *'... quite apprehensive about doing this course as I feel that I lack the necessary academic and experiential background knowledge that my other course participants have'* (DF2, ass0). At the start of the course she felt that she was *'... lacking the science background'* (DF7, pers.com V-11/10/99) and found the first workshop an overwhelming experience, assuming that all participants had some kind of training in environmental issues (DF2, rj). She notes that she felt inadequate and out of her depth and what she had to say was very basic and elementary and that *'... I would have to do a whole lot of reading before I would be able to contribute'* (DF2, rj ; DF7, pers.com. 11/10/99). Her view of environment education being linked to science (DF7, pers.com V-11/10/99 ; DF8, obs.notes 06/05/00) has changed and she feels that this view of ee was as a result of a lack of knowledge and she assumed that ee had to do with science education (DF7, pers.com. 10/10/00). She initially associated environmental education with greening the school (DF7, pers.com. 11/10/99) and focused on ecology and not much else (DF8, obs.notes 06/11/99). After the first workshop she realised that it was more than just the bio-physical aspects (DF7, pers.com. 11/10/99, DF8, obs.notes 06/05/00), *'... the course exposed her to alternative perspectives on environmental education, through discussions, readings, etc.'* (DF7, pers.com. 13/04/00).

*increased understanding
through exposure to
other perspectives*

PARA 2/2 Shortly after the start of the course, on 06/11/99, Vasintha describes environmental education in the school context, as *'... equipping pupils with skills to become critical thinkers and reflect on one's actions in the various dimensions of the environment - cause and effect, awareness, not static, dynamic'* DF2, cf). She respond to this initial description on 08/02/00, by noting in her course file *'... it is a process - on going ... I am imposing - behaviourist ... I am equipping them, they are empty vessels'* and further describes ee on 25/05/00 as *'... providing learners with the opportunity to develop critical thinking skills to recognise the interlik between various systems and its repercussions on the environment, the environmental crisis, so as to take action'* (DF2, cf). She feels that after the first workshop her concept of the environment changed, *'... [I] now realised more about ee ... not only bio-physical'* (DF7, pers.com V-11/10/99). She notes that this

happened after she was exposed to the O'Donoghue model and she realised that '*... there are various dimensions and that history, time and context are equally important and impacts on events*' (DF2, rj). When she began the course she notes that she thought that '*... the key to environmental conservation was education*' (DF2, ass0) and ee would assist in this process. '*... I now know that sustainable living is the direction to follow if future generations are going to enjoy the beautiful world*' (DF2, rj). She notes at the start of the course that as an educator she has '*... realised the importance of embedding a love, understanding and respect for the environment*' (DF2, ass0). Her vision is '*... to do environmental education in the Curriculum 2005 framework*' and '*... produce a critical thinker who is able to see the ramifications of one's actions on the various dimensions of the environment*' (DF2, ass1.1). She feels that through environmental education, children and eventually their parents will become aware of their attitude and actions citing a reference to Opie (1989) (DF2, ass1.1). In reflecting on her professional growth in assignment 1, Vacintha notes that '*... my concept of the environment was limited to the natural/bio-physical environment ... I now realise how vast and interrelated the various dimensions are*' (DF2, ass1.2). In assignment 2, she notes that she now realises that '*... ee has progressed from conservation education to a socio-ecological movement of many dimensions ... calls for active community participation rather than consultation and the change of top down approaches*' (DF2, ass2.1). In reflecting on assignment 3, Vacintha notes that she has realised that '*... ee is a process and not a thing ... one has to continually assess, evaluate a situation or action ... one does not reach the end or the conclusion ... one can always improve as one's understanding changes and as one grows*' (DF2, ass3.1).

PARA 2/3 Vasintha identifies a lack of parental participation at her school and a general sense of apathy, amongst learners and parents, as a major limiting factor in achieving specific goals at the school, (DF2, ass1.1). She notes one of the goals of the environmental club as being working with learners towards improving the physical appearance of the school, which she clarified in the process of writing of the assignment two (DF2, ass1.2). In motivating for the aims and objectives of the environmental education programme at her school, she feels that involved parents are motivated parents and '*... they in turn will*

motivate their children who will develop positive attitudes and values' (DF2, ass2.1). She feels the need to focus on parents and through them change the children, though she also realises that the children are her link to the parent community (DF2, rj). She explores political, economic, social and bio-physical dimensions of this issue (DF2, ass 1.1). Politically she feels that schools have always been the '*...domain of the government*' and parents were marginalised from decision-making processes (DF2, ass 1.1). Economically she feels that financial security is a priority for parents leaving little time for them to participate in school activities (DF2, ass 1.1). Socially she feels that because of the displacement of families in the Apartheid era, a disregard for the environment was born, with people having to live in high density housing (DF2, ass1.1).

PARA 2/4 In her self reflection attached to assignment 1, Vasintha notes that initially she was focused on a lack of community involvement in the school affairs. After some thought and discussions she changed to the lack of parental involvement, since she felt that she needed to start small before she could move on (DF2, ass1.2). In reflecting on her professional growth in assignment 1, Vasintha notes that '*... I now attempt to view things critically ... previously I took things at face value ... I never thought of scratching the surface*' following on from '*... people's behaviour is directly linked to their frame of reference and that they cannot be written off with generalisations such as lazy, lack of interest, lack of time and apathy*' (DF2n ass1.2).

PARA 2/5 In the first draft of assignment 1, Vacintha reflects that the language that she used is too harsh and that it is necessary for her to use subheadings to improve the structure of her assignment, which is in line with the tutors comments on this draft of the assignment (DF2, ass1.1). In the second draft of the assignment, she uses subheadings to separate her discussion of the causes from the effects of the issue. This draft is presented with clearer structure and coherence, though Vacintha appears to have had difficulty in exploring the effects of the issue. One effect is noted in the assignment, being that '*... we are confronted with learners who lack motivation and whose values and mindsets need to undergo a change*' (DF2, ass1.2). In the third draft of assignment 1, and

in response to the tutors comments Vasintha attempts to further clarify the impacts of the issue (DF2, ass 1.3). Due to a lack of parents getting involved in the management of the school, she feels that as teachers they are confronted by learners who are disruptive in class, and '*... in some cases their attention is diverted to other petty crimes, they become school dropouts or turn to drugs and crime and become society's misfits*' (DF2, ass1.3). She also notes that parents have a negative attitude towards the environment, which sometimes spills over to the child (DF2, ass1.3).

Eg. of interaction with work-based colleagues
PARA 2/6 Vasintha identified the lack of parental involvement as a constraint in the greening project '*... through discussions with my colleagues I have established that there is a general lack of parental involvement in school affairs*' (DF2, ass2.1). Vasintha notes in her self assessment attached to assignment 1, that her discussion with Olwen Gibson (a fellow course participant) was '*... very valuable ... [it] helped me to structure and separate my causes and effects*' (DF2, ass1.2). While writing assignments the participants in the group would phone each other with their assignment ideas and this helped to clarify the ideas in her assignment (DF7, pers.com. 13/04/00). *Eg. of drawing on different cause participants brought home relation*

PARA 2/7 In the first draft of assignment 2, Vasintha specified two distinct aims, one being the beautifying of the school grounds and nurturing a respect and love for the environment and a second being to harness support from parents (DF2, ass2.1). In the second draft of the assignment, and prompted through tutor's comments, Vasintha appears to have clarified the aims of the programme as being the greening and beautifying the school grounds and nurturing a love and respect for the environment (DF2, ass 2.2). She recognises these aims as being a response to the unkempt conditions of the school, and notes that poor parental support is one of the factors inhibiting the programme and '*... not the reason for the formation of the enviro group*' (DF2, ass2.2). She further notes that the '*... objectives are the steps one take towards achieving the aim*' (DF2, ass2.2). These objectives are clarified in her assignment 2 and related to improving the physical appearance of the school, and include '*... establish two peace gardens, to level the grass on the large areas for sporting purposes, to create our own nursery*' (DF2, ass2.2). The two drafts of assignment 2 appears to have helped Vasintha to explore and clarify for herself

what the aims and objectives of the programme are (DF2, ass2.1 ; DF2, ass2.2). *'... I was allowed the opportunity to grapple with the concepts of aims and objectives which previously seemed interchangeable concepts ... [they] are not fixed concepts but change overtime as ones understanding changes'* (DF2, ass2.2). She notes that as she moved through the assignments and began to understand the issue better, it changed from being poor physical conditions at the school, to poor parental involvement to eventually encouraging teachers at her school to work closer together as a unit (DF2, rj). Vasintha notes that one of the teachers involved in the environmental group developed objectives in a hurry as these were needed for a funding proposal. She then used these objectives as a basis for her discussion of objectives in assignment 2, and she notes that these were developed without parental involvement, a cause, she feels for the continued lack of parental involvement as cited in assignment 1 (DF7 ; pers.com V-13/04/00). Drawing on these initial aims and objectives developed for the programme, Vasintha appears, through assignment 2, to have developed some objectives to encourage parental involvement in the garden project. These include *'... a survey of what prevents parents from participating ... forming a committee and workshop the need for an active greening committee ... encourage all teachers to participate in the development of the school, workshopping of the policy pack could be fruitful'* (DF2, ass2.1). She notes various principles which she thinks informs the programme these being *'... changed personal attitudes and practices ... respect and care for the community of life ... enable communities to care for their own environment'* (DF2, ass 2.1). Vasintha does however not explore practical ways in which these principles could be reflected in the programme as the assignment provides an opportunity for. The principles appear almost to merely be cited from the course materials (DF2, ass2.1).

PARA 2/8 In assignment 3, Vasintha reflects on some of the methods used in her own classroom (DF2, ass 3.1). These include : as an introduction to a new standard learners were encouraged to prepare a collage of themselves and to share this with their classmates; in introducing the plant a chart was used and *'... I then showed and told them about the various parts and told them of the two types of roots'* (DF2, ass 3.1). Afterwards learners had to go outside to find an example of the roots (DF2, ass3.1).

Another example she cites is a lesson exploring the topic of AIDS (DF2, ass 3.1). Learners were given questions in groups to discuss and then they had to prepare a poster to raise awareness (DF2, ass 3.1). Vacintha goes on to reflect on the factors which influences her teaching methods, being those to which she herself as a learner had been exposed to, in which '*... teaching did not encourage learners to question [but to] accept what was learnt as the only fact or truth ... learners were not given the opportunity to encounter, discuss or reflect*' (DF2, ass 3.1). She notes that she often finds herself going back to what she knows best, what makes her feel comfortable and in control and that is transmission teaching with includes reverting back to the text book practice (DF2, ass3.1 ; DF8, obs.notes 17/02/00). She goes further to note that she attended school and university during the 80's and early 90's and was '*... exposed to the call for democracy*', though she does not specify how this has influenced her current practice (DF2, ass3.1). She notes that in her classroom practice she tries to encourage learners in learning activities to '*... question the status quo and think of ways in which the social system can change*' cited from the course materials and feels that this reflects '*... the socially critical approach*' (DF2, ass3.2). She tries to encourage learners to feel free to talk and ask questions, share ideas and information and work with their partners (DF2, ass3.1). She feels that through working with their partners, sharing ideas and information, learners are constructing meaning through interaction and she feels that this reflects '*... constructivism ... that they are constructing meaning whilst interacting*' (DF2, ass3.2). She feels that the sharing of ideas and information '*... reflect social constructivism*' and in this way '*... participatory methods are adopted*' (DF2, ass3.2). She further feels that '*... learners are co-learners and co-teachers*' and '*... meaning is constructed socially ... the environment as a social construct and meaning is derived through interaction*' cited and referenced from the course materials (DF2, ass3.2). She describes her science lesson in introducing the plant as being behaviourist because she assumes that the learners knew nothing (DF2, ass3.1). She notes that the assignment has allowed her the opportunity to reflect on the methods and processes which might improve her work. She further notes that perhaps her understanding of why is not analytical enough, '*... but it is a process*' (DF2, ass3.2). In the first draft of assignment 3, Vacintha discussed her classroom practice

and later went on to reflect on the methods and processes applied in the environment club, which left the assignment a bit disjointed, with the first part not relating to the second part easily (DF2, ass3.1). In the second draft of the assignment she focuses more on the activities of the environment group and this appears to have provided more structure in terms of understanding what was being done and exploring what they do in the environmental club (DF2, ass3.2). In describing what they do in the environment group, she notes that learners have been involved in weeding, preparing areas and planting and as educators they assumed that '*... the linear behaviour change system of increasing knowledge would be linked to favourable attitude change*' cited from Hungerford and Volk (1990), one of the readings in the course materials (DF2, ass3.2). She notes that this reflects a traditional behaviourist view and she envisages future activities which '*... allow learners the opportunity to develop some level of environmental sensitivity that will promote a desire to behave in appropriate ways*' cited from Hungerford and Volk in the course readings (DF2, ass3.2). She refers to the existing methods used as being '*... show and tell*' '*... as we felt we were dealing with learners who had no prior knowledge*' (DF2, ass3.2). Now she envisages an action research approach, which would allow learners to develop different skills, like identifying issues in the school and the community for example how to address the problem of litter. She feels this would allow '*... for the development of different skills, values and knowledge which will help learners to achieve specific outcomes*' (DF2, ass 3.2). This comes across as much of a theoretical discussion with not many ideas for practical implementation (DF2, ass3.2) '*... by doing activities and focussing on learners developing certain skills to become critical thinkers and introducing action competencies learners will influence their parents and eventually become socially responsible citizens ... in order to maintain a sustainable environment for future, learners have to develop critical learning skills and develop plans of action ... no use one understands the problem but do nothing ... take no action*' (DF2, rj).

PARA 2/9 Vacintha notes that this is the first course which has made her '*... feel so uneasy ... I never felt comfortable ... due to the questioning*' (DF2, rj) '*... the process of*

questioning was a very uncomfortable one .. I was not used to it', not one thing in particular in the course but a combination of things (DF7, pers.com V- 10/10/00).

PARA 2/10 In reflecting on the environmental group, she notes that learners were not involved in determining the success or in establishing goals for the group (DF2, ass 3.2). *'... this year learners have been included in establishing objectives for the group' and in using action research methodologies '... learners will once more be involved in evaluating the success of the project, for example, in a form of self assessment' (DF2, ass3.2).* She further questions whether *'we were not trying to educate them about the environment ... with issues facing the community being ones of social justice and equity for sustainable living rather than nature preservation alone ... our focus needs to broaden and include education for and in the environment' (DF2, ass3.2).* She feels the focus of the group will also have to *'... include social issues rather than only greening of the school grounds ... learners will become critical and eventually influence their parents way of thinking' (DF2, ass3.2).*

*changing conceptions
visions, theoretical
and inappropriate*

PARA 2/11 Vasintha notes that the course encourages a reflection on practice and *'... as you move through your practice, it highlights the limitations and strengths ... as you move on you have the opportunity to reflect on and change' (DF8, obs.notes 13/04/00).* She further notes that *'... talking about issues in the course , helped me to reflect on issues and rethink the ideas on parental involvement in the school ... if you don't talk about it you are less likely to rethink it' (DF7, pers.com V-10/10/00).* The course helped her to start thinking again about what she was doing and her approach to things (DF7, pers.com V-10/10/00).

phatonic

PARA 2/12 Vasintha introduces her assignment 4, a teacher enrichment workshop, as *'... the introduction to an open-ended social process',* with no further clarity on this specified in the assignment (DF2, ass4.1). In motivating for the workshop, Vasintha notes that though parental participation was for her an issue initially, she has now realised that there are various levels and forms of participation, so her focus has shifted to trying to get the

staff to work as a unit (DF2, ass4.1). She specifies the aim of the workshop as being a '*... sharing of my experience on the RU/GF EE course*' (DF2, ass4.1) and '*... to show the complex nature of the environmental issues and how they are interlinked*' (DF2, ass4.2). The workshop, run for her colleagues at school included an activity '*... unpacking the term environment*', ^{resaving her work} using the O'Donoghue model as drawn from the course materials, the enviro picture building game and the compass rose (DF2, ass 4.2). The compass rose is a resource used to encourage thinking about the different dimensions of an environmental issue. Teachers were given a card from the enviro picture building game and asked to discuss the causes and effects of the environmental issue which they see in the picture. Using the compass rose the groups then had to report back focussing on the different dimensions of the environmental issue (DF2, ass4.2). Vasintha notes the aim of this exercise as being '*... to show the complex nature of the environmental issues and how they are interlinked*' (DF2, ass4.2). This activity is followed by a song '*Heal the World*' to generate some discussion around '*... the crisis experienced in all the dimensions of the environment and the need for the development of critical thinking skills and action competencies*' (DF2, ass4.2). Time was then allowed for discussion and '*... to challenge some limited perspectives that came through in the questionnaire activity*' (DF2, ass4.2). Prior to the workshop, a questionnaire was given to teachers to gauge their understanding of the environment and to organise the workshop activities around these ideas (DF2, ass 4.2). The workshop was concluded with an evaluation completed by the teachers and all present were issued with a certificate of attendance.

PARA 2/13 The invitation to the workshop was worded as a sharing session. '*... because I did not want to create the illusion that I am an expert in this area*' (DF2, ass4.2). She notes that the idea of the workshop was to share with her colleagues what she had learnt '*... to give them a bit of understanding of the environment ... to make a difference regarding people's view of the environment*' (DF7, pers.com V-10/10/00) and further specifies the intention of the workshop as being '*... to broaden their understanding and enable them to competently use the environment as a phase organiser*' (DF2, ass4.2). In further motivating for the workshop, she notes that if her colleagues '*... concept,*

understanding of the environment changes, it will imply that their teaching methods, evaluation will have to change ... if they could start questioning then the ee process has begun' (DF2, ass4.1). In motivating for the workshop programme Vasintha notes that the programme was developed in this way so that '*... we can make meaning through an exchange of ideas, through an active participatory process ... they are all coming in with their own knowledge base and together we will construct new meaning ... after all the environment is a social construct'* (DF2, ass4.1, DF2, ass4.2). She feels that the process is not fully socially engineered, since the group will discuss the issue and use the information gathered (DF2, ass4.1).

rhetoric - inappropriate use of concepts

PARA 2/14 In reflecting on the workshop programme, Vasintha questions whether she is following the RDDA approach, since the programme is pre determined, drawn up with no participant involvement (DF2, ass4.1). In further reflecting on the workshop after having run it, Vasintha feels that she should try to tie up loose ends and make connections between points being made (DF2, ass4.2). One important thing that she feels she has omitted in the evaluation is '*... an action component that is : how will you use the ideas generated today'* (DF2, ass4.2).

PARA 2/15 Vasintha notes that when she did the workshop with teachers she tried to encourage the integration of ee into their classroom practice (DF7, pers.com V-10/10/00). She feels that they realised the importance of it, but she feels that they still have a long way to go before they integrate this into everything, and that it is probably a mind set that needs to change (DF7, pers.com V-10/10/00).

PARA 2/16 Vasintha initially had the idea of developing the activities around the EnviroDays booklet for the whole school (DF8, obs.notes 06/05/00). She notes that considering what her own perceptions and understanding of the environment was when she started the course, she was sure that her colleagues would benefit from exploring the environment in a similar way, and this was her motivation for wanting to share with her colleagues through a workshop session (DF2, ass4.1). She also recognises that since

environment is one of the cross curricular phase organisers, it is necessary to understand the concept of the environment before one is able to draw up learning programmes using this phase organiser (DF2, ass4.1). She also felt that for the environment group at her school to succeed it is necessary for all teachers to buy into the aims and objectives of the group, and she feels that a better understanding of environmental issues would encourage this buy in (DF2, ass4.1). In developing the programme for the workshop, and through discussions with her colleagues she realised that it was important to establish what her colleagues understanding of the environment is and this sparked the idea of the workshop for teachers with the focus on the environment (DF2, ass4.1). ^{Working with colleagues to develop workshop} The workshop programme was developed in collaboration with fellow course participants and the questionnaire sent out to participants to gauge their understanding of the environment, ^{Drawing on each others resources} was one developed by a fellow course participant (Jackie Wibberly) for use in her specific context. She spent a lot of time talking to Wendy and Anton and this helped her clarify her ideas for assignment 4 (DF2, rj).

PARA 2/17 Through engagement with course processes, Vasintha notes that '*... during workshops and in discussing issues in relation to the O'Donoghue model, I realised that I had been looking at the issue of school grounds very superficially ... assignments and workshop discussions encouraged me to analyze the issue in more depth ... the assignment forced me to think more deeply around the issue*' (DF7, pers.com V-13/04/00). Vasintha notes that she found the national workshops as providing a broader perspective. The tutorials tended to provide more individual focus. She notes that she found the varied perspectives from her co-participants useful and discussions of assignments and the core text helped in developing the assignment (DF7, pers.com V-13/04/00).

PARA 2/18 Vasintha has added other resources to her course file, such as an article 'What on earth are we doing' and the Land and rural publications and reflects some interaction with the core text in comments and questions raised in her course file, eg. in response to a question raised in the core text '*... have you ever made the assumption that you can change someone else's behaviour?*', she responds '*... yes ? ? ass 1 - aim change pupils behav. forming enviro group*' (DF2, cf). In response to a comment '*... giving people*

experiences in nature or information to change their behaviour according to a predefined code, is based on the modernist ideal of engineering society through education', '... is this not what we set out to do with the establishment of the environment group' (DF2, cf).

theory supports the id of limitations

rhetoric

PARA 2/19 In exploring the issue of a lack of parental involvement in school affairs, Vasintha uses Yeld's principles to support her ideas that the parent community has to be involved in the decision making process (DF2, ass1.1 ; DF2, ass2.1). Much of this discussion however appears to happen on a theoretical level, with not much reference made to practical implications of these theoretical ideas. Vasintha feels that for parents to participate fully '*... their understanding of development has to be reconceptualised ... society has to become aware of and identify the end products and by products ... people are progress, market and wealth driven but devoid of values related to social and environmental responsibilities ... structures need to be established that allow for ... participation from all avenues as opposed to mere consultation*' (DF2, ass2.1). She talks of the need to develop '*... critical thinking skills and the development of action competencies*' during the workshop discussions, and she appears to assume that if teachers have a better understanding of the environment, through the workshop, they would be in a position to develop learning programmes which facilitate the development of these critical thinking skills and action competences (DF2, ass4.2).

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PARA 2/20 In reflecting on the environment group, she questions the assumptions which underlie their practice, such as '*... allowing learners to experience nature in order to change behaviour according to a predefined code*', cited from the core text. She questions whether they were not trying to teach them about the environment. She notes that projects completed in the past involved '*... learners research information about issues and would become better informed and therefore do something about the problem*' cited from the core text (DF2, ass3.1). She concludes by noting that her call for parental involvement attempts at '*... bridging the gap between schools and communities ... this goes hand in hand with the call for equity and redress and open democratic processes ... and is*

supported by socially critical education ideas'. She further notes that the appropriateness of the method is determined by the context. Most of this discussion appears on a theoretical level and not much of it is clearly related to practice (DF2, ass3.1), '... parents and learners would be given the opportunity to grapple with issues and develop a love and respect for the environment ... participation will encourage them to question the status quo and realise the importance of their active participation' (DF2, ass3.2).

PARA 2/21 In assignment 1, Vasintha uses more references than in follow up assignments and appears to use these in relation to the practical context which she discusses. For example, she uses references other than those in the course file, to explore the lack of participation of parents in the affairs of the school, '*...politically South African schools confront environmental issues which are unique due to the legacy of colonialism and apartheid (Yeld, 1997), '... education was controlled by 'centralised bureaucracies which adopted traditional technocratic planning techniques' (Schaeffer, 1992), resulting in '... increasing polarisation of technological ability and lack of moral responsibility' (Opie, 1989) (DF2, ass1.1). From assignment 2 onwards she uses less references and she notes that with assignment 1 '... I was unsure of the theme and this made me read a lot' (DF7, pers.com V-13/04/00). She goes on to note that the second assignment she found to be more practical based and hence the reduction in reading and references (DF7, pers.com V-13/04/00).*

orientation to the role of theory

PARA 2/22 Vasintha notes that it has been a while since she has put pen to paper and needed to write an assignment, and she was really weighed down by the idea because she never really liked writing assignments (DF2, ass1.2). She notes that the discussions in tutorials and the readings made writing a lot easier and discussions allowed her to clarify her own ideas (DF2, ass1.2) '*... tutorial discussions made assignment writing a bit easier ... it helped in clearing up understanding of the reading ... the discussions helped a lot because it gave me other perspectives' (DF2, rj). In her assignments Vasintha uses self assessment to reflect on the process of assignment writing (DF2, ass 1.2 ; DF2, ass 2.1).*

She reflects on her style of writing the assignment 2 and feels that the '*... description of the programme is too long winded ... insufficient example of work given*' (DF2, ass 2.1). In further reflecting on the process of assignment writing, Vasintha notes that she found the process of writing assignments a very difficult one and attempted to write the assignment like any tertiary assignment, using flowery language (DF2, rj). She felt that this style was all wrong, not reader friendly and made the process of writing assignments tedious (DF2, rj). She then opted for using a conversation style of writing in assignment 2, which made the process of assignment writing a bit easier (DF2, rj). Vasintha notes that she can finally see the benefits of reworking the assignment and '*... seeing it as a body of work that has no finality*' (DF2, ass 3.2). This is reflected in the way in which her ideas are clarified from one draft through to another (DF2, ass 1.1; DF2, ass 1.2). The assignment also allowed her the benefit of questioning why she does certain things in a particular way, though it appears that the opportunity to fully explore why has not been optimised in the assignment work (DF2, ass3.1; DF2, ass3.2). She notes that the confusion in the first draft in focusing on classroom teaching methods was because in her thinking of the enviro group and its extra mural nature, she did not think that any teaching methods were applied (DF2, ass3.2).

PARA 2/23 Vasintha feels that assignment 2 has helped her to differentiate between goals, aims and objectives. She also feels that she has paid more attention to her referencing, though very few references were used in this assignment (DF2, ass2.1). She also feels that the programme is still in the initial stages of development which doesn't allow her to comment on some aspects (DF2, ass2.1).

PARA 2/24 Vasintha appears to have drawn quite a bit on the resources to which she had been introduced on the course. In the workshop which she ran for her colleagues, Vasintha used the enviro picture building game and the compass rose, both resources to which she had been introduced during the course (DF2, ass4.1). She also used the diagram reflecting different dimensions of the environment, in the course file, to help her colleagues in exploring the complex nature of environmental issues. She also introduced

her colleagues to the active learning model, to which she had been exposed in the course (DF2, ass4.1).

Developed more confidence
Sharing resources

PARA 2/25 Vasintha notes that the course has afforded her the confidence to *'...to stand in front of my colleagues and present a workshop without flustering as I would have prior to the course'* (DF2, ass4.2). She feels that she did become a lot more confident through the course *'... I am able to participate more in staff meetings ... share my opinions more freely and I am less worried about whether my opinions are correct or not', '... I feel that I have more knowledge regarding the environment and feel more confident in making contributions'* (DF7, pers.com V-10/10/00).

Confidence related to knowing more

PARA 2/26 Vasintha feels that she was in a real comfort zone after nine years of teaching, and now she feels the need to set goals for herself and to actively pursue them and not just think about them and wish them true. *'... the course has made me think more proactive'* (DF2, rj).

FINAL CASE STUDY CONSTRUCTIONS - APRIL 2002**CONSTRUCTION 3 - CATHY COOK**

Cathy teaches at Sans Souci Girls High School in Cape Town in the subject area of geography, was part of the 1999/2000 course, and part of the Western Cape regional tutorial group. I chose Cathy as one of the case study participants because she is one of the Western Cape group who teaches at a high School.

DATA SOURCES USED**1. Cathy's Portfolio (DF3)**

- Background questionnaire (quest.)
- Pre course assignment (ass0)
- Assignment 1 - draft 1 (ass1.1)
- Assignment 1 - draft 2 (ass1.2)
- Assignment 1 - draft 3 (ass1.3)
- Assignment 2 - draft 1 (ass2.1)
- Assignment 2 - draft 2 (ass2.2)
- Assignment 3 - draft 1 (ass 3.1)
- Assignment 3 - draft 2 (ass3.2)
- Assignment 4 - draft 1 (ass4.1)
- Assignment 4 - draft 2 (ass 4.2)
- Reflective journal (rf)
- Course file (cf)

2. Interviews (DF7)

- First interview 14/10/99 (pers.com. 14/10/99)
- Final interview 16/10/00 (pers.com.16/10/00)

3. Observation notes (DF8)

- Western Cape regional tutorial 17/10/99 (obs.notes 17/10/99)
- Western Cape regional tutorial 06/11/99 (obs.notes 06/11/99)
- Western Cape regional tutorial 28/11/99 (obs.notes 28/11/99)
- Western Cape regional tutorial 20/01/00 (obs.notes 20/01/00)
- National Workshop 04 - 06/02/00 (obs.notes 04 - 06/02/00)
- Western Cape regional tutorial 17/02/00 (obs.notes 17/02/00)
- Western Cape regional tutorial 13/04/00 (obs.notes 14/04/00)
- Western Cape regional tutorial 06/05/00 (obs.notes 06/05/00)
- National Workshop 07 - 09/07/00 (obs.notes 07 - 09/07/00)
- Site visit 16/10/00 (obs.notes 16/10/00)

4. Comments on construction (DF3)

- Comments from Wendy (C1)

1. ACADEMIC AND PROFESSIONAL BACKGROUND

PARA 1/1 Cathy initially did a Bachelor of Arts (BA) degree, with majors in english and geography and two (2) years of psychology. Her aim with doing this degree was to go into teaching (DF7, pers.com C-16/10/00) and after her initial degree she did a Higher Diploma in Education (HDE) (DF3, quest.). Her plan was to go into teaching and she completed her studies at the University of Cape Town in 1988 (DF7, pers.com C-16/10/00). To complement her work as a teacher, she completed a behaviour management course and a Word Perfect/Excel course, while she was teaching (DF3, quest.). She doesn't plan to ever study again '*... never - no exams*' and would prefer to do something practical possibly floral art or catering (DF3, quest.).

PARA 1/2 Over the past twelve (12) years Cathy has taught at four (4) different schools (DF7, pers.com. C-16/10/00). She started her teaching career at Camps Bay High School, '*... a liberal co-ed school*' (DF7, pers.com. C-16/10/00) '*... where I was lucky to work with some very innovative colleagues*' (DF3, ass3.1). Here she felt she was given the freedom to develop resources and '*... I was supported ... I never suffered from "action paralysis"*' (DF3, ass3.1). She found this an exciting time of experimentation and adventure (DF3, ass3.1). She then went to London where she taught at a girls school in outer London for one (1) year. ~~She notes that the school in~~ London has a '*... really good work ethic*' and the kids and parents at the school are very competitive (DF7, pers.com C-16/10/00). The school is rated the fifth highest academic school in London with most of the kids having aspirations of going to Cambridge and Oxford (DF7, pers.com. C-16/10/00). She notes that her experience at the school in London has taught her that high standards are possible in a school, with parents supporting their children, and this is definitely something that she has learnt in London that she doesn't see happening here (DF7, pers.com C-16/10/00). When she returned from London she taught at Wynberg Boys High School for nine (9) months where she taught English and hated it. This is the only time that she

taught English, otherwise she has always taught geography (DF7, pers.com C-16/10/00). She notes that at Wynberg Boys High School '*... I was stifled and I can't really survive in a school where I can't do my own thing*' (DF7, pers.com C-16/10/00). Being a women at a boys only school she was often not taken seriously, the approach was very disciplinarian, and any noise in the classroom it was assumed that nothing constructive is happening (DF7, pers.com C-16/10/00). Fieldtrips were a bind to organise and thought to be '*... a waste of precious academic time*' (DF3, ass3.1). She hated this experience and left the school after which she started teaching at Sans Souci Girls High School (DF7, pers.com. C-16/10/00). Here she has taught Geography for the past eight (8) years (DF7, pers.com C-16/10/00).

PARA 1/3 Cathy currently still teaches at Sans Souci and is now the head of geography and the grade 12 co-ordinator (DF3, quest.) and '*... I enjoy the freedom to develop new ideas ... I have no one else to blame for what is being taught or how it is being taught, I have to come up with the programme*' (DF3, ass3.1). '*... My own education and the schools in which I have taught have definitely influenced the way I teach today ... my earliest years were some of the happiest times, where I was a participant and not a spectator*' (DF3, ass3.1) , though Cathy appears to find it difficult to specifically reflect on how these experiences have shaped the way she teaches today (DF3, ass3.1; DF7, pers.com C-16/10/00).

PARA 1/4 In introducing her school context, Cathy feels that as a staff they do have some sense of environmental consciousness (DF3, ass0). A recycling programme is run at the school and different calendar days are celebrated, such as arbour day and spring day (DF3, ass0). With the past principle, they have always on arbour day had a civies day to raise money (DF7, pers.com C-16/10/00). They also have a civies day on Spring Day where students pay R2.00 which is an ongoing commitment to the 'Greening of the Cape Flats' (DF3, ass0). She was asked to help in the recycling project because she is the geography teacher, and she hasn't kept this up as much as

she would have like to (DF7, pers.com C-16/10/00). Generally '*... there are no ee programmes, as such at our school, it generally happens in the classroom*' (DF7, pers.com C-16/10/00). There is no policy on environmental education and the initiative generally comes from the top (DF7, pers.com. C-16/10/00). A few years ago they had a biology teacher as a principle who was more interested in the environment (DF7, pers.com. C-16/10/00). With the past principle, if you were interested it was fine (DF7, pers.com. C-16/10/00). There is quite a bit of influence from top down and ~~wasn~~ a policy on environmental education would be a good idea (DF7, pers.com. C-16/10/00). In biology and geography it is being promoted, but not really in other subject areas (DF7, pers.com C-16/10/00). In discussing her vision for environmental education at the school, she feels that a policy is quite important, '*... I would like the principle to take it more seriously ... the OBE thing can only be good ... if the ministry of education can make it compulsory it would be great*' (DF7, pers.com. C-16/10/00). She feels that it has to come from the top down (DF7, pers.com C-16/10/00). In light of this Wendy comments that she thinks '*... Cathy finds it easier to work with things that she is told to do although she may not like it*' (DF3,C1). Wendy feels that this is where Cathy found a dilemma in the course (DF3, C1). On the one hand Cathy likes the freedom to choose what she wants to do, but this conflicted with the impatience she reflected in the course in wanting '*... to be fed the minimum of model ways to improve her teaching and then simply go out and apply what she had learnt and feel satisfied with her improvement*' (DF3, C1).

PARA 1/5 Cathy notes that her interest in environmental education started at home, (DF7, pers.com. C-16/10/00). Her father has always been a member of the Wildlife and Environment Society of South Africa (WESSA) and did some fundraising for Umgeni Valley (DF7, pers.com. C-16/10/00). Her parents both loved plants and animals '*... so it was something that I grew up with*' (DF7, pers.com C-16/10/00). She also feels that '*... if you do geography then you obviously have an interest in the*

environment ... I am quite an observant person ... I like to know what is going on and the environment is everything that surrounds you' (DF7, pers.com C-16/10/00).

PARA 1/6 Cathy heard about the course from Alex Larkin, a previous participant in the course (DF7, pers.com. C-16/10/00). Alex was very enthusiastic about the course and Cathy then wrote away for the brochure (DF7, pers.com. C-16/10/00). The way in which the course was run appealed to her and '*... the fact that there are regional groups and you get together' (DF7, pers.com C-16/10/00).* She notes that a lot of the course was unknown and because it wasn't that expensive she thought she would give it a bash (DF7, pers.com C-16/10/00). She told a colleague about the course, as Alex suggested that it would be nice if two (2) teachers at the same school could work together and she thinks that this was a good idea (DF7, pers.com C-16/10/00). She *interaction with Jacky in work context* notes that she and Jacky were able to support each other in the course through '*... discussing ... [and] ... reading through assignments, and give each other support and advice on these' (DF7, e-mail C-01/04/01).* She also notes that in the work context they were able to plan combined fieldtrips and after the course they have '*... continued support and discussion and still combine their fieldtrips ... OBE has a more integrated approach and the departments have to liaise' (DF7, e-mail C-01/04/01).* Cathy appears to have difficulty in reflecting on how they supported the professional development of each other, in doing the course together (DF7, e-mail C-01/04/01).

PARA 1/7 Cathy notes that there are not many opportunities for professional development for teachers. She feels the need '*... for keeping up to date ... and to feel ... that your teaching is growing' (DF7, pers.com C-16/10/00).* '*... it is quite important to do courses' (DF7, pers.com C-16/10/00).* '*... i was getting bored and a bit negative ... it is quite good to break out of ... doing the same thing year after year after year' (DF7, pers.com C-16/10/00).* and she feels it is important to keep up to date in terms of changes happening and to feel that your teaching is influenced. (DF7, pers.com C-16/10/00).

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PARA 1/8 Cathy's expectations of the course was '*... to be inspired*' and to '*... teach better*' (DF3, quest.). She thought that the course would be more practical, and '*that ... we would go out and look at environmental issues*' (DF7, pers.com. C-16/10/00). *... so it didn't meet those expectations ... I hoped that I would grow professionally and change in my teaching ... one of the expectations which I did not have was that I would become computer literate, so that was like a hidden agenda*' (DF7, pers.com C-16/10/00). The course did meet her professional development expectations, in that '*... it made you aware of environmental issues and how you could use them ... whereas before I was aware of them, but they kind of passed me by*' (DF7, pers.com C-16/10/00). At UCT she studied geography which is now called '*Environmental and Geographical Sciences*' (DF3, ass 0). She feels that she needs '*... to be updated on the 'E' part ... [d]ecisions need to be backed up with scientific evidence and not just based on emotions*' (DF3, ass0). So she is hoping through the course to '*... broaden my knowledge ..., share ideas, meet new people, be stimulated so that I include ee throughout my teaching and not separate it*' (DF3, ass0). She is looking forward to developing greater focus on ee, '*... and most importantly to implement the ideas*' and '*... hopefully I'll get around to doing a water audit and developing an Environmental Policy for Sans Souci ... even before ... 2000*' (DF3, ass0).

PARA 1/9

2. PROFESSIONAL DEVELOPMENT IN THE CONTEXT OF THE GOLD FIELDS COURSE

PARA 2/1 In her pre course assignment, Cathy describes Sans Souci as having '*... large school grounds, well greened, with an awesome view of Table Mountain*' (DF3, ass0). She describes the learners at the school as '*... environmentally deprived and they lack a sense of ownership and hence commitment to cherishing and nurturing the environment*' (DF3, ass0). Her vision is, through her teaching, '*... to engender greater appreciation and responsibility for the environment*' (DF3, ass0). Through her

geography field trips she aims to '*... enrich students about the local environment ... to see the outdoors as a valuable source of recreation ... find the environment fascinating and ever changing ... the more we know something the more we can come to love it ... our relationship with the environment must grow*' (DF3, ass0). In describing her work context Cathy talks of the Spier Cheetah which visited their school and '*... the power of ... actually touching the purring cheetah had a profound effect on many of the girls ... they felt connected to the plight of the cheetah*' (DF3, ass0). Presently she is trying to get learners to understand the concept of sustainability and the conflict between development and the environment (DF3, ass0). She has used a video of the Saldanha Steel Project that discusses the impact of the project on the sleepy fishing village (DF3, ass0). She has then tried to bring this idea into the real lives of her learners through a discussion of the height restriction on building in the Claremont CBD (where their school is situated) to protect the view of Table Mountain (DF3, ass0). Cathy feels that the link between environment and employment is a '*... very effective means of raising awareness ... students are beginning to see that the environment can offer them opportunities*' (Df3, ass0). With her present matriculants (1999), she has used articles in the press about local issues such as the Peninsula baboons, the Arum Lilly Frog, the death of two caraculs by dogs on Table Mountain and the Peninsula National Park (DF3, ass0). In an initial interview with Cathy she describes her fieldtrips as a '*... good social outing ... meet, talk and walk around*' ((DF7, pers.com. C-14/10/00). She describes the environmental deprivation of her learners and notes that kids do not know about the plant species, and they do enjoy the outdoors ((DF7, pers.com. C-16/10/00). She further describes the impacts of this environmental deprivation as '*... kids not knowing their immediate bio-physical surroundings*' (DF7, pers.com C-14/10/99).

PARA 2/2 In assignment 1, Cathy explores an environmental issue in her school context and phrases it as a question '*... are school leavers environmentally literate and active citizens*' (DF3, ass1.1). She feels that urban teenagers '*... lack experience,*

appreciation and responsibility for and interaction with the environment' (DF3, ass 1.1). In a discussion of assignment 1, Cathy poses the question of whether '*... I am developing environmentally literate kids*' and notes that she *sees* '*... a crisis in the way I am teaching*' (DF8, obs.notes 17/10/99). She notes that she started off trying to identify an appropriate issue by first wanting to look at water wastage, then she moved to environmental awareness and now she has moved on to a more personal account of her own role in the environment (DF8, obs.notes 17/10/99). In assignment 2, Cathy elaborates on the issue that she has explored in assignment 1, to read a '*... lack of environmental literacy and an active response to environmental crises*' (DF3, ass2.1) which might imply the realisation of her own role in prompting action amongst learners. Some of the '*... symptoms ... [that] relate directly to attitudes towards the environment*' she notes are '*... littering, graffiti and stealing which occurs*' (DF3, ass1.1). Cathy feels that '*... because our school [is] a big green property, it appears superficially that there are no real environmental crises needing to be addressed, ... greening and littering etc. are purely concerns for the haves*' (DF3, ass 1.1). In exploring the causes of this issue, Cathy feels that with the rate of political change '*... it is difficult to unlearn our old ways and adapt to change*' (DF3, ass1.3). She further feels that the power relations between teacher-pupils will take a long time to change and another cause noted is the disregard of indigenous knowledge, still '*resulting in some learners experiencing a sense of alienation*' (DF3, ass1.3). She feels that '*... educators need to explore this issue in its complexity, so that it is not idealised or stereotyped*', quoting O'Donoghue and Janse van Rensburg (DF3, ass1.3). It is however not clear to which issue Cathy refers here (DF3, ass1.3). Cathy notes that the curriculum is not sufficiently integrated so that environmental issues are still compartmentalised into subjects and not life skills '*... and learners know the jargon, but find it difficult to act effectively for change*' (DF3, ass1.1; DF3, ass1.3). She feels that OBE/Curr 2005 hopes to address this and result in the transformation of society through education (DF3, ass1.3). She also feels that change is happening too fast and lifestyles are improving with people aspiring to the

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western consumerist values (DF3, ass1.3). She notes that the function of the media, which '*... encourages people to buy and borrow as much as they can*' (DF3, ass 1.1) '*... is not compatible with sustainable living*' and references Kirby, date not specified (DF3, ass1.3). She uses the ideas of technicism, consumerism, as presented in the course materials, and the role of the media as a heading for the discussion of causes of the issue, though focuses her discussion on the effects of consumerism, with the role of the media related to this (DF3, ass1.3). She further recognises that if '*... educators submit to consumerism, then the product of schooling is just the Matriculation Certificate*' (DF3, ass1.2). She does however feel that the '*... the opportunity is there to transform learners into environmentally literate and active citizens for the benefit of the earth*' (DF3, ass 1.2). Throughout assignment 1, the effects of the issue are mentioned briefly, though not explored in a lot of detail (DF3, ass1.1; DF3, ass1.2). In addition to the symptoms mentioned above, '*... boredom and bunking*' are cited as '*... effects*' and Cathy goes on to question what has happened to learners *spark as they move from primary to high school* (DF3, ass1.3). She feels that a possible reason could be that at primary school learning is more practical and hands on and television has made learners passive receivers of information (DF3, ass 1.3).

draws on theoretical ideas to describe practice

PARA 2/3 In her course file Cathy describes ee as a '*... process of developing a world population that is aware and concerned about the total environment and its associated problems and which has the knowledge, skills, attitudes, motivation and commitment to work individually and collectively towards solutions ...*' (DF3, cf). Cathy further emphasises an action research and problem solving approach as a method to respond to issues (DF8, obs.notes 13/04/00). She appears to interpret action research as a process of gathering critical information about an issue, implied in the brief of assignments 1 and 2 linked to the field trip programme that she developed (DF3, ass4.2). This is further implied in '*... action is a new component and they need to see action as conclusive, after the information has been gathered*' (DF3, ass 4.2). Cathy appears to place quite a bit of emphasis on knowledge gathering implied further in '*...*

learners know the environmental jargon , but this knowledge is not leading to action or a change in their lifestyles' (DF3, ass 1.3). Cathy notes that the tasks given to learners forced them to take action, (DF8, obs.notes 08/07/00). The assessment criteria for the assignments linked to the fieldtrip include, '*... action must be included ... could take any form ... letter to town planner, informative article for the snippets, reporting illegal dumping, letter to your local newspaper, activity to be done in the classroom and questionnaire'* (DF3, ass 4.2). Cathy further cites the following examples of action, writing an article for the school newsletter, encouraging learners to recycle and a letter of concern about litter in the Claremont CBD (DF3, ass4.2).

PARA 2/4 Cathy describes her fieldtrips at school as having to fit into the curriculum (DF3, ass3.1) and trying to '*... educate learners to act in an environmentally responsible way ... to inform them about the local environment ... that this can lead to appreciation for the environment and possibly an active response'* (DF3, ass2.1; DF3, ass3.1). She notes that the matric fieldtrip fits into the ecology section of the syllabus and conservation is a key component (DF3, ass3.1). In the second draft of assignment 2, she changes the motivation for her aims slightly to read '*... it is hoped that this will lead them to appreciate the global environment ... possibly inspire an active response'* (DF3, ass2.2). She further notes that '*... trips increase the learners sensory and environmental awareness ... by visiting a landfill site ... gives them the choice to respond to this, in a simple practical way in their own households'* (DF3, ass 2.2). The main aim of the fieldtrip is to '*... bring the subject alive by linking textbook knowledge and theory with practical observation in the field ... to spend time appreciating the setting together'* (DF3, ass2.1; DF8, obs.notes 28/11/99). In assignment 4, Cathy references Hungerford and Volk, part of the course materials, in describing the need to sensitise learners to environmental issues and notes that '*... they found that sensitive individuals reported that some experience with severe environmental degradation substantially increased their environmental awareness'* (DF3, ass4.1). She describes the grade 8/9 combined history and geography fieldtrip as giving learners '*... a more integrated learning experience'* (DF3, ass 2.2).

*theory used
critically
and not
applied*

In the second draft of the assignment she elaborates on this noting that '*... this trip picks up on the Tblisi principle of environmental totality, where the environment is more than just the natural environment but it is complex and consists also of the built environment*' (DF3, ass2.2). In describing another fieldtrip she notes that she hoped that in the grade 12 fieldtrip '*... the shock of the landfill site may in some way influence their (the learners) consumerist life styles*' (DF3, ass2.1).

PARA 2/5 Cathy refers to one of her fieldtrips in discussing the various approaches to ee, which she uses in her practice (DF3, ass3.1). She describes the first part of the fieldtrip, which is a lecture '*... to tell the audience*' everything that they may wish to know (DF3, ass3.1). She notes that '*... learners were passive receivers of information about the environment*' (DF3, ass3.1). She notes that though the lecture was expert driven it meant that a lot of information could be passed on in a short period of time (DF3, ass 3.1). The second part of the fieldtrip involved a visit to the penguin colony which she notes is experiential because '*... we were actually there where the penguins live*' (DF3, ass3.1). This also involved a short lecture and learners were able to observe the penguins in their habitats (DF3, ass3.1). She recognises this as being '*... education in the environment*' and feels that both of these parts of the fieldtrip involved only pseudo participation from the learners (DF3, ass3.1). She feels that this was fine though '*... because of the short time spent on each activity, the learners did not become bored or frustrated*' (DF3, ass 3.1). They then visited a landfill site '*... to learn about the scientific aspect of waste management*' and were talked through the process by somebody (DF3, ass3.1). Cathy feels that this trip had '*... all the aspects of active learning, dialogue, encounter and reflection, but these could all be explored further*' (DF3, ass3.2). She does however not note where these elements are evident in the programme (DF3, ass3.2). In reflecting on this fieldtrip, Cathy feels that they could have spent the whole day at the landfill site and '*... broadened the issue to include political, bio-physical, economic and social, which would be using the socially critical approach...*' (DF3, ass 3.1). She references Huckle (1995)

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in arguing that '*... this would have resulted in a more "holistic view of the environment as a totality of the interdependent relationship between natural and social systems"*' (DF3, ass3.1). She feels that they could also have done an impact assessment which '*... would be using the action research method*' (DF3, ass3.1). In further reflecting, she notes that '*... I do not think that the trip changed behaviour*' and she had hoped that with '*... the shock of seeing the waste ... learners would be encouraged to recycle more household waste*' (DF3, ass3.1).

PARA 2/6 For assignment four (4) Cathy has redeveloped her matric fieldtrip, entitled '*Fieldtrip - leading to action*' aiming '*... to raise environmental awareness of the local environment, reinforce the ecology syllabus covered in the classroom, ... to expose learners to careers in the environmental field and encourage sustainable life styles*' (DF3, ass4.1). She further specifies the aims and objectives of the programme as being to '*... stimulate awareness, improve environmental literacy, [encourage] connections and relevance to learners and encourage group dynamics and social interaction*' (DF3, ass 4.2). Another outcome of the fieldtrip is for learners to see the environment in a holistic way, by examining the social, economic, political and bio-physical factors (DF3, ass 4.1). She notes that this fieldtrip is '*... a re-orientation to development of the programme that I ran in 1999, and it uses methods and principles that I have learnt on the RU/GF course this year*' (DF3, ass4.2). Cathy notes that through writing her course assignments she was '*... wanting through my teaching and on fieldtrips to make learners environmentally literate and responsible citizens*' (DF3, ass 4.2). She notes that she felt that '*... knowledge and awareness would lead to behaviour change, but ... realised that this is not ... the case*' (DF3, ass 4.2). '*... I needed to change my approach and include an action component to make learners perceive the environment in a holistic way*' (DF3, ass 4.2).

PARA 2/7 The fieldtrip programme includes a pre fieldtrip exercise and the handing out of an information booklet to learners (DF3, ass4.2). The pre fieldtrip exercise,

'the plastic bag issue' is introduced by handing out a newspaper article, in which Valli Moosa proposes a legal ban on plastic bags (DF3, ass 4.2). Learners are then encouraged to discuss '*... the factors of the issue*' using the compass rose and report on these '*... to see the links between the factors*' (DF3, ass 4.2). Learners are then encouraged to discuss solutions '*... to this issue*' and are '*... introduce[d to] the idea of public participation and the opportunity to take action*' (DF3, ass 4.2). Prior to the fieldtrip, an information booklet, which Cathy had compiled herself, was handed out to learners (DF3, ass 4.2). This consists of '*... wetland information*' and '*... waste and landfill information*', since these were the foci of the fieldtrip (DF3, ass 4.2). The fieldtrip included a visit to three sites, a coastal park landfill site, which deals with the issue of despoilation and focuses on integrated waste management, environmental health and entrepreneurial opportunities '*... and the shock of seeing where our waste ends up*' (DF3, ass 4.2). The second site was a visit to the Silver Mine river mouth in Fish Hoek, focusing on landscape rehabilitation and public participation (DF3, ass 4.2). The third site was a visit to the Rondevlei Bird Sanctuary, focusing on '*... a managed conservatin project suffering from the impact of the surrounding urban area, subsidy cuts and the need to be economically viable*' (DF3, ass 4.2). At each of the three sites '*... an expert spoke to the learners, ... no worksheets were handed out ... follow up assignments were handed to learners before the trip*' (DF3, ass 4.2). Assignment 1 required learners to write a newspaper report of the days outing, according to specific assessment criteria, entitled '*state of the wetlands*' to '*... emphasise man's impact, the social, economic, biophysical and political aspects, the changing landscape, the site in the past, present and future*' (DF3, ass 4.2). The aim of the newspaper report is to give learners confidence in using environmental terminology and the assignment on return from the fieldtrip is so that '*... their knowledge, awareness and skills can enable them to take action to ensure environmental sustainability in their day to day lives*' (DF3, ass 4.1). For assignment 2 learners could choose from 4 topics (DF3, ass 4.2). These include an investigation of how 3 countries tackle their waste issue, the need to pedestrianise an area in close proximity to the school, identify an

issue in their neighbourhood, its causes and possible solutions and doing an audit of their school's recycling centre (DF3, ass 4.2). In discussing assignment 2 as part of her programme, Cathy notes that '*... action is the new component and they need to see action as conclusive after the information has been gathered*' (DF3, ass4.2).

PARA 2/8 In her assignment work Cathy identifies an issue and frames it as a question, implying the start of questioning her own practice and whether '*... school leavers are environmentally literate and active citizens*' (DF3, ass1.1). She notes that she has realised that there are '*... gaps in basic knowledge of the local and global environment and learners are not very excited by environmental issues*' (DF3, ass1.1). Cathy feels that her own '*... environmental literacy is questionable, I have gone through the conservation, wilderness and outdoor approach to ee [and] recently came across sustainable living and development which makes so much sense ... I need to grasp it fully for transformation to take place*' (DF3, ass1.1). In exploring the causes of the issue, she begins to question what happens to learners from primary, where learners are bright and enthusiastic, to high school (DF3, ass1.1). She also questions what has happened to her own teaching in the past 12 years (DF3, ass1.1). She feels that as educators we need to harness the childlike joy and positive appreciation and channel it into our teaching '*... education is life long and there should not be such a dramatic change in attitude from primary to high school*' (DF3, ass1.1). In a follow up draft of assignment 1, Cathy feels that the reason for this loss of excitement and passion about education is because '*... people do not travel to experience the journey, there is too much focus on the destination and we miss out on things along the way, and there is not time for reflection ... perhaps we need to reconsider our methods of teaching, so that learners can make a connection with environmental issues and knowledge*' (DF3, ass 1.3). She feels that it is vital that learning is fun and learners want to be at school and '*... we must adapt to create a more stimulating and active learning environment*' (DF3, ass1.3). Cathy feels that she has concentrated too much

on content and not enough on method, and *we '... need to transform knowledge into wisdom ... a time for reflection followed by action is needed'* (DF3, ass1.1).

PARA 2/9 In exploring the causes of the issue in her assignment 1, Cathy notes that learners are not allowed enough time for critical thought to be explored and still believes that there is a best answer and the teachers knows what it is, so learners do not listen to each other and feel disempowered (DF3, ass1.1). At her school she feels that there is *'... a strong sense of cultural imperialism ... where it is thought that educators know what is best for learners'* (DF3, ass1.1). Cathy feels that schooling requires a *'... participatory enlightened approach'* referenced from Munslow, Fitzgerald, McLennan, in the course materials (DF3, ass1.1). She feels that we need to come up with a participatory approach to involve the parents in the schooling of learners (DF3, ass1.3). Cathy further notes that it is taking some time to adjust from the teacher-pupil subservient relationship to the educator-learner *'... complementary relationship where we acknowledge that everyone has something to share'* (DF3, ass1.2). In her self assessment attached to assignment 1 Cathy notes that *'I haven't been doing things incorrectly, but I can do them better with more thought ... there are many general trends, but the specific context is very important'* (DF3, ass1.2). She notes that she needs to make things more complex and is looking forward to assignment 4 (DF3, ass1.2).

PARA 2/10 At the end of assignment 2, Cathy notes some shortcomings of her programme: *'... I need to make issues more complex and relevant and lead the learners on to action ... there needs to be a greater interdisciplinary approach ... I have focused this year on the natural environment and all the learners live in the built environment'* (DF3, ass2.1). In her self-reflection attached to this assignment, Cathy notes the need to aim for progression from grade 8 to grade 12 and recognises that the fieldtrips are not as beneficial as they could be (DF3, ass2.1). In concluding draft 2 of assignment 2, Cathy notes the need to evaluate all her programmes and to

reflect changes in environmental education (DF3, ass2.2). In planning for assignment 4, Cathy notes that she feels *'... the desire to make learners environmentally responsible'* and thus her planning needed to be more thorough and follow up and evaluation needed more attention (DF3, ass4.1). She feels that her fieldtrips all had great potential which was not being used fully and had the desired effect (DF3, ass 4.1). The programme developed for assignment 4, *'... is a response to reflecting on what I do and how to do it better, by thinking about what I do and why I do it and using the ee principles that we have read about on the course'* (DF3, ass4.1).

PARA 2/11 In reflecting on her current ee programme, Cathy feels that in going to the landfill site, which is not beautiful and not the natural environment shows that she is making some relevant changes in her approach to ee (DF3, ass2.2). In reflecting on this fieldtrip, she feels that water quality could have been tested, and they could have carried out a waste audit (DF3, ass 3.1). The 'pickers' were present and they would have been interesting to interview (DF3, ass 3.1). She does not feel that the trip has changed behaviour though feels that it was food for thought (DF3, ass3.1). She feels that there was not enough time for reflexive evaluation and in many ways the fieldtrip was *'... show and tell'* (DF3, ass3.2). She feels that she needs to include *'... an action research aspect so that learners could construct meaning'* (DF3, ass3.1). And she definitely needs to develop the area of evaluation of these fieldtrips (DF3, ass3.1). She further feels that in planning the trips she needs to consider outcomes and communicate these to the learners (DF3, ass 3.1). She recognises that there is certainly an element of earth love in the programmes and feels that the fieldtrip *'...should enlighten learners about how to lead a more sustainable life style'* (DF3, ass3.1). In discussing her fieldtrips, Cathy notes that conservation is a key component, and that species extinction and pollution are noted in the text book, but only the problem is there and not solution (DF3, ass 3.2). She notes that this negative view *'... does not lead to a change in attitude or lifestyle of the learner... her fieldtrip is in response to this'* and tries to show learners two

successful conservation projects (DF3, ass3.2). In her self reflections attached to assignment 3 Cathy notes that her teaching still has a strong behaviourist methodology, *'... but I think that I am slowly progressing to education for the environment'* (DF3, ass3.2). She notes that *'... I need to change from being a neutral facilitator to an active mediator and I must try to include a community development component'* (DF3, ass3.2). She feels that to date the trips have definitely included education about and in the environment and the 'for' still has to be developed further (DF3, ass 3.2). She feels that greater learner participation is needed and this will be the basis for her assignment 4 (DF3, ass 3.2). She aims to get learners to develop a programme for world environment week, using the active learning environment model, and this *'... "interactive challenge of learning and planning together should be followed by action taking to bring about change..."'* referencing O'Donoghue and Janse van Rensburg (1995) in the course materials (DF3, ass3.2). In describing her revised version of the fieldtrip, she notes that *'... my 2000 fieldtrip is not longer just education about and in the environment, but also education for the environment'*, which she feels is incorporated in the 'action' component of her fieldtrip (DF3, ass4.2). She describes the action component of assignment done by learners as *'... the letters which kids wrote to the municipality gives them a better sense of achievement, rather than just handing a project in makes them realise that they can in fact do something to make a difference'* (DF7, pers.com. 16/10/00). *'... the aim of the project was to introduce the action component, if they identified a project they needed to come up with a solution ... to interview people ... to do research'; '... projects have changed, it has become a lot more scientific with recording data, hypothesis testing ... and i know that this is an area in which I have to improve'* (DF7, pers.com. 16/10/00). On 21/06/00 Cathy writes that she *'... still need[s] to get to grips with "what is action" ... need to use and refine'* (DF3, rj). In a follow up draft to assignment 4, Cathy notes that *'... she felt that knowledge and awareness would lead to behaviour change, but then realised that this is not necessarily the case ... I needed to change my approach and include an action component and to make the learners perceive the*

environment in a holistic way ...the active learning environment model ... involves information gathering, exploring and questioning and reporting and taking action, helped to achieve this outcome' (DF3, ass4.2). In her reflective journal on 09/05/00 Cathy questions '*... am I reaching change in behaviour and attitude'* (DF3, rf).

PARA 2/12 In reflecting on the fieldtrip, which she tried out with her learners at school, she feels that she should have outlined the assessment criteria for the assignment with her learners, and she should have given the break down of marks to them beforehand, to guide learners in doing the assignment, as some of them missed the boat completely (DF3, ass4.1). In her self reflections attached to assignment 4, Cathy feels '*... excited that my teaching is improving and moving in the right direction ... this was the reason for doing the course'* (DF3, ass4.1). She feels that planning and evaluation has definitely improved and these are still areas that can be developed further. She notes that '*...the idea of process and not product is an important thing to remember'* (DF3, ass 4.1).

PARA 2/13 Cathy appears to find difficulty in reflecting on what she has learnt (DF7, pers.com C-16/10/00; DF8, obs.notes 06/05/00), and notes that '*... nothing has changed ...'* (DF8, obs.notes 06/05/00). At the end of the course, in presenting assignment 4, she notes that she has learnt that the trip was done in relation to academics dealt with in the classroom and one of the learners noted that since discussing the issue it has raised her awareness of the environment (DF8, obs.notes 08/07/00). She questions whether she is '*... doing the right thing'* and appears to be frustrated that the course is not telling her yes or no (DF8, obs notes 06/05/00). She attempts to do things differently in her classroom by including a holistic perspective of the environment, which she appears to interpret as linking the outside to the inside of the classroom and encouraging the development of sustainable life styles (DF8, obs.notes 06/05/00).

PARA 2/14 Wendy notes that the '*... methods used I the course have influenced the way she does her teaching*' and refers specifically to '*...wanting to include an action component in her teaching,... become an active mediator rather than neutral facilitator ... assessment ... peer assessment ... self assessment*' (DF3, C1). Peer assessment is used quite often in the assessment process in the course and Cathy feels that she would like to include peer assessment in her future fieldtrips '*... where learners would state what percentage of the work handed in was done by them*' (DF3, ass4.2). She also feels that the handing in of drafts of assignments for comment and redoing these is something that she would like to build into her teaching '*... I would like to see my learners improve their skills, using this method*' (DF3, 4.2). She would also like to use self-assessment, an aspect encouraged in the WC regional groups (DF3, ass4.2; DF7, pers.com C-16/10/00). She notes that she has never been really good at self-reflections, and would rather go on to the next thing (DF7, pers.com C-16/10/00). She felt that the self-reflections worked well for her in the course, but that she could still do it better (DF7, pers.com C-16/10/00). During the course she feels that her reflections were not used beyond the self-reflections, but she feels that she is using it now in her teaching with the constant thing of wanting to improve (DF7, pers.com C-16/10/00). In this light Wendy notes that '*... she didn't like developing assessment criteria, doing self assessment and particularly rewriting assignments, but she obviously gained a lot from them and wanted to pass on that process of learning to her learners*' (DF3, C1).

PARA 2/15 Since the course Cathy notes that she and Jacky have not shared their experience in the course with their colleagues yet (DF7, pers.com C-16/10/00). No one at the school has asked and, given their full time table at school, they haven't had the time to do it yet. Things about the course that she feels would be worthwhile to share with her colleagues are: (1) the different approach to assessment processes applied in the course, the idea of no marks; (2) that the environment is not only bio-physical; and (3) the assignment process, where assignments are given back to you to

rework them (DF7, pers.com C-16/10/00). She doesn't feel that there is anybody on the staff who would want to do the course right now (DF7, pers.com C-16/10/00). Cathy notes that on the course it was good to see what other people are doing and that what you are doing is not necessarily out of line, that it is okay, '*... it is almost a reinforcement in a way*' (DF7, pers.com. 16/10/00).

PARA 2/16 Though Cathy finds it difficult to reflect on what she has learnt on the course, she sees the value of it in '*... meeting the groups, discussing issues and having different perspectives on the same issues*' which she feels '*... was really great*' (DF7, pers.com C-16/10/00). Cathy feels that the course has impacted on her practice in encouraging the whole idea of '*... improving things as you go along ... I have always worked this way but jumped around a lot*' ((DF7, pers.com C-16/10/00). She further feels that '*... the course has shown me that you can stick to one thing and keep improving it*' (DF7, pers.com. 16/10/00).

*Interaction with course
file linked to assignment work*

PARA 2/17 Cathy appears to have interacted with her course file quite a bit in the comments made in relation to her assignment work (DF3, cf). She highlights the phrase '*... you have to constantly adapt to the swaying of the bridge*' and writes below '*assignment 1*', which might imply that this is an idea which she used for her assignment 1 (DF3, cf). Another example is the UNESCO categories of environmental education objectives, next to which Cathy writes '*... lacking in my teaching*' and next to each one ticks it, though writes '*... no*' next to participation (DF3, cf). Various additional resources were added to Cathy's course file, many of them newspaper articles related to local environmental issues in the Western Cape (DF3, cf).

*eg. & 1
para 15*

PARA 2/18 During the site visit Cathy showed me a number of games which were developed by learners around a particular geography topic, (DF8, Obs.notes, 16/10/00). Learners had to develop a game, and were required to do extensive research around a topic to use as facts in the games (DF7, pers.com. C-16/10/00).

She got the idea of the game while interacting with Ruben Snyders, a previous participant in the course, and a teacher at another school who had tried it out (DF7, pers.com. C-16/10/00). For this process she included self-assessment and peer assessment, processes which she experienced in the GF course (DF8, obs.notes 16/10/00).

axis
PARA 2/19 In assignment 2, Cathy doesn't describe any objectives of her programme as the assignment brief requires (DF3, ass 2.1). She does however note the UNESCO objectives from the core text, and notes that *'... these objectives are central to my fieldtrips'* (DF3, ass2.1). She further describes the programme, noting that *'... I used a guide, so that there would be expert knowledge and the teachers could ensure that all learners participated'*, *'...observational skills are taught and practised and knowledge and general skills are part of the preparation and follow up'*, *'... questions are posed and learners are encouraged to ask questions ... are informed of the need to respect the environmental and this is hopefully how they will treat each other'* (DF3, ass 2.1). I assume that this is the way in which she links the UNESCO principles to her practical programme (DF3, ass 2.1). She also adds action as a 6th important objective (DF3, ass2.1). In a follow up draft Cathy motivates for her inclusion of the 6th objective by noting that *'... it is a means of doing follow up on the trip, and many teenagers feel a sense of environmental despair, which leads to depression and is not constructive'* (DF3, ass 2.2). She goes on to note that *'... learners need to feel that they can make a difference and that paralysis is not an appropriate response'* (DF3, ass2.2). She describes the forms of action which her programme could take as *'... for example a petition or a letter to the local newspaper'* (DF3, ass2.2). She further notes that *'... action also tries to address the need to make changes to our lifestyles'* (DF3, ass 2.2).

PARA 2/20 In discussing the principles of her programme, Cathy notes various principles from the course readings, eg. Yeld (1997) and core texts, for example *'...*

respect and care for the community of life' she notes '... is shown by the Spier Cheetah Outreach Project, where learners are informed how easy it could be for the cheetah to become extinct without intervention' (DF3, ass 2.1). A second example is '... conserve the earths vitality and diversity ... is illustrated by the alien versus the indigenous forests on Table Mountain .. the working for water project shown how the alien vegetation is leading to a loss in vitality for man and nature' and '... visiting a landfill site tried to change personal attitudes and practices' (DF3, ass 2.1). Cathy goes on to note that '... I have shown in small ways that the fieldtrip programme does address sustainable lifestyle principles' (DF3, ass 2.1). Cathy further notes some of the Tblisi principles which underly her trips: '... ^{practical ideas used} environmental totality, learning is ^{to reaffirm what she is doing} lifelong, interdisciplinary approach, complexity of issues their symptoms and causes, varied experiences and activities', though these are not discussed in direct relation to the fieldtrips in the first draft of the assignment (DF3, ass2.1). She notes in the self reflection attached to this assignment that she found it difficult to relate the principles to her practice (DF3, ass2.1). In the second draft of the assignment, Cathy elaborates on the Tblisi principles in '... environmental totality is shown by a focus on not only the natural, but also the built environment ... learning is lifelong because we all learn together, the educator does not know everything and often an expert guide is used ... the combined history and geography trips is an attempt to be interdisciplinary' (DF3, ass2.2).

PARA 2/21 In her reflective journal on 24/04/00, Cathy inserts her 1999 and 2000 fieldtrips in the action research spiral drawn from the course materials and adds evaluation to the diagram (DF3, rf).

PARA 2/22 In the first draft of assignment 1, Cathy presented many ideas related to the assignment brief, though the assignment was not clearly structured with headings and a clear argument (DF3, ass 1.1). In the second draft, Cathy retained the initial ideas from draft 1, but reformatted the assignment and the ideas were

presented more clearly using specific headings of nature, effects and causes (DF3, ass1.2). The first two drafts of assignment 1, explored the causes of the issue, though it did not include an indepth discussion of the consequences of the issue being explored (DF3, ass 1.1; DF3, ass 1.2). The third draft of her assignment reflected still more clarity on the ideas presented in the first two drafts and further depth in thinking about the ideas presented in the previous two drafts. Cathy notes that '*... I think that there has been some value in this third rewrite, if not purely to improve my computer skills*' (DF3, ass1.3).

*improved writing skills
+
computer skills*

PARA 2/23 The first two drafts of assignment 1 is handwritten and the 3rd one is a typed copy (DF3, ass1.3). Cathy notes the improved computer skills as an unexpected outcome of the course (DF3, ass1.3). On 02/06/00, Cathy writes '*... very chuffed with my new computer skills*' (DF3, rj)

researching her work

PARA 2/24 In developing assignment 4 for use in her work context Cathy used the compass rose, which she notes made a big impact on her (DF7, pers.com. 16/10/00; DF8, obs.notes 13/04/00). This was used to encourage learners to explore the environment 'holistically' and make learners think critically about an issue (DF7, pers.com. C-16/10/00). She also introduced learners to the Active Learning Environment Model to explore their assignment topics (DF3, as4.1). In preparing learners for the fieldtrip, Cathy has prepare a pre trip booklet consisting of newspaper articles and references which are relevant to the trip and the follow up assignment (DF3, ass4.2). Her assignment 4 is written as a guide to other teachers planning a fieldtrip for learners and includes some '*Tips on organising a fieldtrip*' (DF3, ass4.2).

PARA 2/25 In her reflective journal Cathy notes on 07/04/00 that '*... ee is influencing my teaching ... I have been injected with new life, contacts etc. ... been far more active in the Goegs study group*' (DF3, rj). On 03/06 Cathy writes '*... that I did*

actually network ... I'm not good at it ... I need to put myself in more uncomfortable situations ... to grow as a person and professionally' (DF3, rj).

FINAL CASE STUDY CONSTRUCTIONS - APRIL 2002**CONSTRUCTION 4 - Daniel McGinness**

Daniel works as a technical services manager for Khutala Colliery and was part of the 1999/2000 industry course group. For most of the course the industry group participants attended the workshops as part of the general course. Though some aspects were dealt with separately with them as a group. For the first few tutorials, they joined the regional groups of the general course, but for the latter tutorials met as a specific industry group. Prior research did not include participants from the industry context and for this research, I chose Daniel as one of the case study participants as a representative of the industry sector participants.

DATA SOURCES USED

1. **Daniel's Portfolio (DF4)**
 - Background questionnaire (quest.)
 - Pre course assignment (ass0)
 - Assignment 1 - draft 1 (ass1.1)
 - Assignment 1 - draft 2 (ass1.2)
 - Assignment 2 - draft 1 (ass2.1)
 - Assignment 2 - draft 2 (ass2.2)
 - Assignment 3 - draft 1 (ass 3.1)
 - Assignment 3 - draft 2 (ass3.2)
2. **Interviews (DF7)**
 - First interview 14/10/99 (pers.com. 14/10/99)
 - Final interview 30/10/00 (pers.com.30/10/00)
3. **Observation notes (DF8)**
 - National Workshop 10 -12/09/99 (obs.notes 10 - 12/09/99)
 - National Workshop 04 - 06/02/00 (obs.notes 04 - 06/02/00)
 - Industry tutorial 10/03/00 (obs.notes 10/03/00)
 - Industry workshop 15 - 16/04/00 (obs.notes 15 - 16/04/00)
 - National Workshop 07 - 09/07/00 (obs.notes 07 - 09/07/00)
 - Site visit 30/10/00 (obs.notes 30/10/00)
4. **Comments on constructions**
 - Comments from Heila (C1)
 - Comments from Daniel (C2)

1. ACADEMIC AND PROFESSIONAL BACKGROUND

PARA 1/1 Daniel initially completed a Higher National Diploma at the University of the Witwatersrand (Wits), specialising in coal mining (DF4, quest.). This initial qualification was followed by a Diploma in Datametrics, from the University of South Africa (UNISA), and he then went on to complete a Mine Managers Certificate (DF4, quest.). Other courses which he has done to support the work that he does includes the following two management specific courses, namely a Management Development Programme (UNISA) and an Executive Development Programme (Wits Business School) (DF4, quest.). Daniel notes that if he were to further his studies in any way it would be in the field of risk analysis, environment and health and safety, particularly related to mining (DF4, quest.).

PARA 1/2 Daniel has always worked in the mining industry and currently works as a Technical Services Manager for Khutala Colliery (DF7, pers.com D-30/10/00). Khutala Colliery, with its holding company Billiton based in the United Kingdom (UK), is dedicated to the supply of coal at the Eskom Power Plant at Kendal (DF4, quest.). In this position the main aspects of Daniel's job includes long- and short-term planning and overall management of mining projects, geological services and information technology (DF4, quest.). Daniel's department is involved in environmental issues in that the surface environment is one of the planning facets in planning the mining process from the cradle to the grave (DF7, pers.com D-30/10/00). Part of these environmental duties include planning for and running an environmental education programme, which has 3 aspects to it (DF7, pers.com D-30/10/00). One part includes a brief session on the environment presented at an induction programme to employees returning from leave and new employees (DF7, pers.com D-30/10/00). During the 9-day induction period, 1 hour is allocated to environmental training (DF4, ass 2.2). Here employees are '*... shown a video*' (DF4, ass0) '*... which has been generated by Billiton, ... a description of Khutala's mining activities and a question and answer*

session' (DF4, ass 2.2) which is done by either *'... a planning overseer or planning manager'* since *'... surface environment is part of their responsibility'* (DF4, ass0). A second aspect of the education programme is an adventure experience, in which individuals are nominated to visit various environmentally sensitive areas in SA, for two weeks in which the participants *'... will learn from different specialists using various teaching techniques'* (DF4, ass2.2). A third aspect is a six monthly meeting for interested and affected parties (IAPs) at which the mining personnel would describe what is being planned and how it is expected to affect the surrounding communities (DF4, ass 2.2). Daniel views this meeting with IAPs *'... as information sharing as well as an education forum'* (DF4, ass 2.2). At this forum surrounding communities are allowed *'... to air their views and concerns as to the effects of the mining activities concerning both present and future projects'* (DF4, ass0).

PARA 1/3 Daniel's personal involvement in the education programme is limited to the process of planning (DF7, pers.com D-30/10/00). His department is given the time slot at the induction programme and *'... the course was planned and run by three guys in the department ... occasionally I would sit in on the meetings and suggest aspects to talk about'* (DF7, pers.com D-30/10/00). With the IAPs meetings *'... I used to be highly involved, but as time progressed I have handed it over to the department and now I sit in occasionally'* (DF7, pers.com D-30/10/00). So essentially *'... I am more involved at a planning level and initiating programmes'* (DF7, pers.com D-30/10/00). *'... I would get involved to a certain point and then hand it over, and later come back to it ... facilitation of the programmes will be undertaken by someone else in the department'* (DF7, pers.com D-30/10/00).

PARA 1/4 Daniel came to know about the course when the course flyer was circulated around Khutala (DF7, pers.com D-30/10/00). Initially it went to the training department *'... it being an education course'* (DF7, pers.com D-30/10/00). From there it was sent to the planning department since it was thought to be more of *'... a practical course'* (DF7, pers.com D-30/10/00). There was no clarity on who

should do the course, whether it was training or technical services and after discussions with the general manager, he opted for doing the course and finding out more about it (DF7, pers.com D-30/10/00). Daniel notes that when he started the course '*... I was a little taken aback ... I thought it would be a lot more of finding out what other people's problems are and how they are solving it ... at this point I wasn't entirely sure whether it would benefit me in the long run*' (DF7, pers.com D-30/10/00). '*... what made me continue on the course was an interest in the different ways in which things were done for example the way you were marking ...not marking, commenting on the assignments ... it was the different outlook that kept me going ... in the end it was the different outlook to ee and teaching*' (DF7, pers.com D-30/10/00).

PARA 1/5 In joining the course, Daniel's immediate expectations were to be exposed to other work disciplines and their environmental problems (DF4, quest.) which would assist him in developing '*... a different perspective to environmental problems associated with mining activities*' (DF4, ass0). He feels the main objective of this being to '*... formalise a training and education system that would satisfy the need of the mine, the community and the environment*' (DF4, ass0). Thus, his immediate expectations when joining the course were '*... to develop a programme that will assist in ee and to develop a different outlook towards problems*' (DF4, quest). When joining the course he was thinking of a qualification, '*... set something up in an outcomes based format*', but he no longer thinks that this is possible in the position which he now holds and what he has available (DF7, pers.com D-30/10/00). The motivation for this thinking was that '*... we all have technical qualifications in planning a mine from the cradle to the grave, but we do not have a formal system on environmental education ... where you are teaching people but you do not know whether what you are doing is the right thing*' (DF7, pers.com D-30/10/00). Daniel notes that as he moved through the course his expectations changed, '*... the expectations which I had at the start was very different to what I really wanted in the end*' (DF7, pers.com D-30/10/00). In noting the change in expectations, Daniel

notes that '*... my expectations changed ... my goal at the start of the course was to have this resource ... it changed through the course about 3 or 4 times*' (DF7, pers.com D-30/10/00). As he progressed through the course '*... my expectations became to ultimately understand what my limitations are ... so that I could turn them around and see what I could achieve within this process*' (DF7, pers.com. 30/10/00). *challenge to your orientation.*

Daniel notes that he finds it difficult now to reflect on what his goals were at the beginning of the course, but he is able to look at what he has achieved through the course (DF7, pers.com D-30/10/00). He notes that sometimes during the course '*... I wasn't sure ... I would get the feeling that I am not understanding ... not quite getting there ... but slowly as the course progressed it slowly started to piece together as it went on*' (DF7, pers.com. 30/10/00). Daniel notes that his visions for ee '*... changed over a period of time and that was the benefit of the course, that it did actually assist me in changing my outlook*' (DF7, pers.com D-30/10/00). He realised that '*... there is a lot more to the environment than what I saw ... the environment that I saw was the little bugs and the water*' (DF7, pers.com D-30/10/00). Daniel notes that his view on education in his context has changed, '*... at first I didn't think that education was needed, now I see the need in the IAPs forum (inclusive of us as being part of the IAPs) ... we can't produce without input from other people*' (DF7, pers.com D-30/10/00).

PARA 1/6 In reflecting on his own development in the course, Daniel feels that the course would be useful for other people in his organisation, and not just as a training aspect, but an important part of line functions (DF7, pers.com D-30/10/00). '*... I think that as a line function it is important that the guys in planning and production get exposed to some of the education/teaching methods*' (DF7, pers.com D-30/10/00).

2. PROFESSIONAL DEVELOPMENT IN THE CONTEXT OF THE GOLD FIELDS COURSE

PARA 2/1 Daniel identifies open cast mining as an issue in his work context which he would like to explore in his assignment work (DF4, ass 1.1). In describing the open case mining method, he notes that the truck and shovel method used requires ground shifting to a large extent which has a significant '*... impact on fauna, flora, surface water runoff, aquifers and the community*' (DF4, ass0). In the first draft of assignment 1, he does a full technical description of open cast mining as a method of coal mining (DF4, ass 1.1). '*... the open cast operation is designed to be a strip mine where the overburden is removed down to the first seam, which in this case will be the number five seam. The five seam coal will be removed and sold on the local markets as a premium product. The interburden between the number five seam and the number four seam will be removed exposing the number four seam coal which will be mined for the power station's use*' (DF4, ass1.1). Daniel continues by then noting the impacts of this mining method, which '*... generates noise, dust and water pollution which will have an impact on the local people*' (DF4, ass 1.1). He notes that to assess this environmental impact an EIA has been done showing the impacts and as a result notes all the different monitoring devices to be established to monitor this impact, such as '*... dust fallout monitoring stations, blasting vibrations monitoring underground/surface water monitoring points and noise measuring points will need to be established in order to monitor and minimise this pollution*' (DF4, ass 1.1). The issue which Daniel has identified and its impacts are described in the assignment in a rather technical way (DF4, ass1.1). Further Daniel notes some of the measures to be implemented to minimise environmental impact and the consequences of these, '*... a river diversion ... a channel to be cut around the mining operation and evaporation ponds constructed ... surface to be purchased from farmers, resulting in them having to relocate*' (DF4, ass1.1). In this assignment he further explores another issue of the defunct mines which Khutala has inherited and recognises the dumps as an issue

noting that these are fenced off but the fencing has to be replaced due to theft (DF4, ass 1.1). He goes on to discuss the issues associated with the open cast mines and offers technical solutions to these issues, eg. the impact on surface and ground water noting that '*... these concerns will have to be addressed and several licenses will need to be applied for*' and given the change in the land use characteristics '*... the local farmers need to be involved in the rehabilitation of the disturbed ground event to the extent of sub contracting the work to them ... air quality concerns must be addressed*' (DF4, ass1.1). In this first draft none of the causes of the issues identified were explored (DF4, ass 1.1). The second draft of assignment 1 appears to be more clearly structured, noting a single issue of open cast mining in the introduction, then exploring the causes and impacts under these headings (DF4, ass 1.2). The technical descriptions of the issue and its impacts remain as in the first draft and Daniel notes that '*... the underlying cause for the open cast lies in the modernism outlook as defined in the Theme 2 of the course material*' (DF4, ass 1.2). Daniel summarises his assignment by noting that the '*... biophysical problem is the negative effect on the environment in that the water tables are changed, arable land is temporarily interrupted and fauna and flora is destroyed*' (DF4, ass 1.2). He further notes that '*... the economic dimension is that the open cast system will provide only a few jobs thus widening the gap between rich and poor ... the political part ... is that there is a desire to be seen to be making cheap and accessible power available ... and the social problem lies in the fact that the community will be subject to radical change*' (DF4,, ass 1.2).

PARA 2/2 Daniel describes the education programme at Khutala as a top down approach, where '*... it is a case of we show you what we have got and you go out and do it*' and notes that the mining industry always operates in this top down way (DF7, pers.com D-30/10/00). He describes environmental training in the induction programme as '*... we show a video, show what we have done or haven't done and chat about things and by this time the guys are sleeping ... they are not actually*

interested, and we have not achieved what we desired to achieve in terms of the environment' (DF7,pers.com D-30/10/00). Daniel feels that there are other ways of approaching a training programme other than the top down approach and suggests in future that they should use a *... more participatory approach ... moving out of the classroom, taking them to some of the areas and have a look at what we have done, how we have affected the environment ... how we have affected the people who live in that environment and that would be more effective than sitting in a classroom watching a video'* (DF7,pers.com D-30/10/00). In further describing the education programme at Khutala, Daniel notes that the system *'... does not help to change attitudes or give a set of values towards the environment'* and references the UNESCO - UNEP document here (DF4, ass 2.1) and particularly the objective of encouraging environmentally responsible behaviour (DF4, ass 2.2). He further notes that it *'... does not provide a set of skills for solving environmental problems'* (DF4, 2.1). In further describing the education programme, he notes that it has a *'...high degree of participation and ... questions are encouraged'* (DF4, ass2.1). In reviewing the ee principles contained in the core text, Daniel notes that the education system is *'... designed for employees and tends to ignore collective society ... no connection made between human beings, nature and the universe ... the forums that are held are information sessions and do not create an equal partnership between various stakeholders'* (DF4, ass 2.2). He feels the need for the community to be informed of the need to balance the environment *'... by issuing a handout to the interested and affected parties, the community will be able to participate in complex problem solving surrounding the environment and the need for sustainability'* (DF4, ass 2.2).

PARA 2/3 For his final assignment Daniel has developed a pamphlet *'aimed at the local farmer... intended to provide information regarding the environment'* (DF4, ass 3.1). The pamphlet is introduced by a heading *'Understanding the environment'*. Under another heading of *'... awareness of environmental issues'*, Daniel defines the environment according to the 'National Environmental Bill (July 1998) (DF4, ass 3.1).

Here Daniel describes environmental problems as they occur in 4 areas, using the diagram used in the core text and describes the interdependency of these various dimensions with reference to a coal mine supplying a power station (DF4, ass 3.1). Daniel then raises some issues for thought, amongst others '*... how will open cast mining impact on the local environment ... who benefits from the generation of cheaper energy ... what will be the cost of going to an alternative energy source*' (DF4, ass 3.1). He goes on to describe the auditing process used by Khutala and the reasons for open cast mining, primarily being a financial one (DF4, ass 3.1). In addition to '*... issues for futher thought*', Daniel includes some '*issues for further debate*', such as '*... the cheapest form of energy is from fossil fuel and the conservation of this resource should enjoy top priority in all decisions ... fossil fuels should be charged at their true costs, which include social costs such as environmental and health costs and pollution control related expenses*' (DF4, ass 3.1). He further includes the constitutional rights of the farmers with respect to the environment, then goes on to note some of the environmental impacts of Khutala's operations, such as '*... surface and ground water will be affected ... the land characteristics will change from farming to grazing land*' (DF4, ass 3.1).

PARA 2/4 The resource is intended for distribution at the IAPs meeting (DF7, pers.com 30/10/00). Daniel describes these meetings as being a backlashing session with each one blaming the other and the mine representatives justifying their operations ((DF7, pers.com D-30/10/00). Daniel sees the outcome of this resource as being to '*... bring about an awareness of the different facets that make up the environment ... illustrate the interdependencies of the social, political, economic and biophysical of our environment and that solutions to the environmental crisis cannot be found in isolation*' (DF4, ass 3.1). The pamphlet would further '*... seek to achieve a sustainable way of thinking and encourage the questioning of methods and the suggesting of solutions*' (DF4, ass 3.1), rather than the backlashing typical of prior meetings (DF7, pers.com D-30/10/00). The pamphlet further intends to get the buy

in from farmers and '*... in becoming more involved in educating of the communities, the public image of the mine will become more positive*' (DF4, ass 3.1). Daniel intends for the pamphlet to be handed out and to get from the farmers some input on further issues to be tackled in the pamphlet, noting that the '*... information in the pamphlet will be driven by the farming community with the hope that the knowledge gained will provide opportunities for a sustainable environment*' (DF4, ass 3.1). In motivating for the resource as a means to addressing the issue of open cast mining, Daniel notes that '*... the farming community need to be made aware of the fact that the solutions have been constructed from their input and that their further involvement is necessary*' (DF4, ass 3.2). Further motivation for the pamphlet given is that Khutala's EMS states that they '*... are committed to involving its employees, and all interested and affected parties in our environmental decision making*' (DF4, ass 3.2). He notes that '*... the sharing of information from the mines side and then hopefully increased input from the farmers a move can be made towards a more participative approach*' (DF4, ass 3.2). In reflecting on the use of the pamphlet at the IAPs meeting, Daniel notes that this one was just a start and the '*... next one would be more of an attempt to address their needs*' (DF7, pers.com.30/10/00).

PARA 2/5 In describing the education methods and processes, Daniel describes the approach in his work context as being '*... one of a top down approach and can be identified as behaviourism*', referencing the course materials (DF4, ass3.1). Daniel feels that any other approach '*... would be impractical, given the confrontation and aggression shown at the forum and the people involved*' (DF4, ass 3.1). Daniel notes that the pamphlet '*... has been developed to assist in the education of the local farming community ... their outlook is that they are not responsible for the degradation of the environment ... they view the environment as only the biophysical*' (DF4, ass 3.1).

theory is heavy to understand in practice

PARA 2/6 Daniel notes that it is intended '*... to change the pamphlet at a later stage for use in the local towns*' (DF4, ass 3.1). This will be done using the mine's Social Responsibility Officer '*... who will be able to identify a suitable teaching method and target population*' (DF4, ass 3.1). Daniel notes that at this point, of using the resource with the social responsibility officer, it will be possible to move away from the behaviourist method to a more social constructivist approach (DF4, ass 3.1). In motivating for this statement, Daniel notes that '*... this would mean that the pamphlet would be designed and constructed using the mine, both parties being teachers and learners ... the community will become empowered and become able to participate more in their environmental decisions*' (DF4, ass 3.2).

PARA 2/7 As Daniel begins to explore environmental issues in his work context, he begins to question whether the '*... belief that by reducing the cost and availability of primary energy to the general public the economy will prosper*' (DF4, ass 1.2). He further notes that '*... mining by nature is not a sustainable resource but it is cheap and alternate methods of power conservation or generation is not vigorously pursued due to costs*' (DF4, ass 1.2).

PARA 2/8 In his pre course assignment, Daniel appears to begin critiquing the approach to environmental education in his organisation, by noting that '*... mining technical people, not trained in education methods, host both these sessions*' (DF4, ass 0). He further notes that '*... we all have technical qualifications in planning a mine from the cradle to the grave, but we do not have a formal system on environmental education, where you are teaching people but you do not know whether what you are doing is the right thing*' (DF7, pers.com D-30/10/00). In further discussing the education programme at Khutala, Daniel notes that '*... the environmental education system is in a default mode*' and references Sheldon (1997), one of the course readings (DF4, ass 2.1). He further feels that '*... the main motivation is to benefit the firm and the direct customer with the main driver being pursuit of opportunity*'

(DF4, ass 2.1). He also feels that the programme *'... does not seek to develop people to a point where they are able to respond to personal and work related environmental issues and risks'* (DF4, ass 2.1). He thinks that since it is incorporated in the safety, health and environment policy it *'... takes second place as a priority'* (DF4, ass 2.1). He further notes that *'... the method of teaching is not diverse enough ... other methods can and should be used to encourage lateral thinking'* (DF4, ass 2.1). In assignment 2 he begins to think about ways in which to address this by noting that *'... a more global perspective on the issues should be given ... a handout needs to be developed for issuing to interested and affected parties which will provide skills and knowledge on the environment'* (DF4, ass 2.1). In discussing the education programme after the end of the course, Daniel notes that the *'... the education system was totally lacking, it was a case of we show you what we have and you go out and do it ... very basic teaching skill, we know you do ... the sort of empty vessel story'* (DF7, pers.com D-30/10/00).

PARA 2/9 In further reflecting on the IAPs meeting he notes that he felt the need to move away from the conflict situation to become more of an education process (DF7, pers.com D-30/10/00).. He began to realise that the mining operations won't change, and that the mine needs to continue its operations but they needed to move towards a more beneficial relationship with the farmers (DF7, pers.com D-30/10/00). He realised the need for participation by the farmers in decision making processes of the mine and saw education as a way of facilitating this process of participation in decisions regarding mining operations (DF7, pers.com D-30/10/00). This Daniel notes he realised during the course, around the second workshop, and he came to see education as *'... necessary to encourage an understanding that we need to ... go around together ... that was never in my vision'* (DF7, pers.com D-30/10/00).

PARA 2/10 As he begins to critique the environmental policy in his work context, Daniel notes that *'... the systems of environmental audits that are carried out by the*

mine ... ensure compliance with the act ... and ISO 14001' (DF4, ass 0). He however feels that this '... in itself will not obtain a commitment from employees and the interested and affected parties, but a properly structured training and information system will' (DF4, ass0). In further discussing the policy, Daniel feels that '... the policy is not dedicated to the environment ... but includes the health and safety of its employees and affected parties' (DF4, as 2.1). He finds the policy to be '... generic, because it covers various mining activities, which operate in different geographical/environmental areas' (DF4, ass 2.1). He further notes that any changes to this policy would have to be negotiated with Billiton, the holding company, and can only be done at higher levels in the company, which are not available at the mine (DF4, ass 2.1). He further notes that the environmental policy is a statement that he could not alter from sitting in his current position (DF7, pers.com D-30/10/00). He feels that '... there are elements of it that we could question ... certain facets we could certainly alter, but some of the principles which Ingwe subscribe to, we could not' (DF7, pers.com D-30/10/00). He further notes that there are environmental experts employed by the holding company to ensure that the policy is implemented as is (DF4, ass 2.1), implying that any kind of change in the policy is out of his hands or that of his department. Daniel feels that whatever they could control they would change and feels that ('... we started changing the process ... we handed out the pamphlet at the last 6 monthly meeting ... at the next one you tell us what you want in the pamphlet' (DF7, pers.com. 30/10/00).

Materials with course materials
and other course participants

PARA 2/11 Daniel notes his initial feeling of being overwhelmed at the start of the course (DF7, pers.com D-30/10/00). After the first meeting when he got the course file and started reading it, he found that '... there were a lot of case studies in which I was interested and I felt a lot of benefit in talking to the rest of industry group' He notes that he then '... decided to stick with it and see where we go to from this point' (DF7, pers.com D-30/10/00).

*Worried about
category as being
to change*

PARA 2/12 In discussing the change in his own perspectives and those in his department, Daniel notes that during the course he discussed some of the core texts with the environmental officer in his department (DF7, pers.com D-30/10/00). The environmental officer, on his own then went to talk to the social investment officer and '*... they started work in some of the local townships, to find out what the need is and to help them or assist them in accessing information, arranging clean ups and so on*' (DF7, pers.com D-30/10/00). He feels that his department is '*... moving towards a broader understanding of the environment and things are obviously starting to change very slowly*' (DF7, pers.com D-30/10/00).

PARA 2/13 Daniel feels that the course '*... certainly gave me a good grounding and a good understanding of environmental education*' (DF7, pers.com D-30/10/00). He notes that as the course progressed he became more comfortable with the assessment process (DF7, pers.com D-30/10/00).. Initially he had taken the comments and automatically fed them back into the assignment, thinking of these as criticisms (DF7, pers.com D-30/10/00). Later he came to see the comments as suggestions about '*... things that I need to think about a bit more*' and '*... this helped me to understand the orientation to assessment as learning a bit better*' (DF7, pers.com D-30/10/00). He feels that the orientation to the course is a difficult one because it is so different to what we are accustomed to (DF7, pers.com D-30/10/00).

Interaction with course participants → feel his work

Daniel notes that he found the interaction with the group very valuable and particularly talking to Beverley about her work and he found her work to be very interesting (DF7, pers.com D-30/10/00). Some of the discussions that he had with Beverley encouraged him to pick up some serious debates with the guys at work around issues of health and safety (DF7, pers.com D-30/10/00).

PARA 2/14 In discussions in his assignment work, Daniel enters into quite a lot of technical description of policies and procedures in the work context, and appears to find difficulty in describing how things actually work in practice (DF4, ass 2.1; DF4,

*struggle with
praxis*

ass 2.2). For example, in describing the strengths of the EMS in assignment 2, Daniel notes that '*... the policy states the need to comply with the necessary laws governing the environment ... all parties have a say in the mining activities that will affect their environment ... the mission statement states that ... the company is committed to caring for the environment with the long term welfare of society as its guiding principle*' (DF4, ass 2.1). In a further description of the policy, Daniel notes that the EM policy was '*... developed in isolation of the various operations without consultation of the interested and affected parties*' which is contrary to one of the strengths noted above (DF4, ass 2.2). In discussing the weaknesses Daniel notes that '*... it does not encourage improving on statutory levels of bettering the mine performance ... it does not provide for community's education ...*' which mostly appear to be weaknesses inherent in the strengths discussed earlier (DF4, ass 2.1). *eg. of theoretical discussion* This discussion of the EMS appears to be one of what is contained in the policy statement, rather than what is in fact taking place practically in the context of the mine (DF4, ass 2.1). In discussing these strengths and weaknesses eg '*... there is no encouragement to produce at higher levels while using less input and generating less waste*' (DF4, ass 2.1). Daniel refers the reader to different literature, eg. '*... refer to the European Business and The Environmental Programme (1997)*' *use of theory in learning* without integrating the ideas in this literature and relating it to the Khutala situation (DF4, ass 2.1). He similarly describes the education programme at Khutala as being in '*... a default mode as is described in Sheldon: the default and preferred EMS paradigm (1997)*', without motivating for this statement (DF4, ass 2.1).

PARA 2/15 Daniel notes that he found the core text to be relevant, since it helped to challenge his own thinking and to put into perspective the need to change their approach at the forum meetings (DF7, pers.com D-30/10/00). '*... I had been one-sided in my perspective ... we did what we had to according to the law ... I later understood that there was an opportunity to move forward beyond the conflict situations of the past*' (DF7, pers.com.D-30/10/00). He further notes that '*... a lot*'

of the theories helped me to understand the shortcomings in our education programme' (DF7, pers.com D-30/10/00). He notes that '*... the time scale in the education orientations fazed me a bit initially, but I realised that you can choose any method appropriate to your context and ... reflect on the limitations of it ... but it remains a valid teaching method*' (DF7, pers.com D-30/10/00).

PARA 2/16 In reflecting on the education programme, Daniel notes that '*... I knew there was something lacking, but I only know now that it was that part of it that was lacking ... the education process*' (DF7, pers.com D-30/10/00). He notes that he realised that Khutala needs to go on and '*... we need to be party to a system to suit all parties ... the only way to go forward was to understand that we both in fact needed each other in the process*' (DF7, pers.com D-30/10/00). He notes that '*... somewhere in the second or third theme ... that I was starting to realise that things could be turned around into a more beneficial relationship between both parties*' (DF7, pers.com D-30/10/00). He felt that '*... the mine ... needed to go forward and ... it can't ... without the participation of the other parties being part of that decision making about what could affect the environment and how they could possibly affect it*' (DF7, pers.com D-30/10/00).

PARA 2/17 From assignment 2 onwards, some parts of Daniel's assignments take on a more critical tone, rather than the rich technical description of the first draft of 1 (DF4, ass 2.2; DF4, ass 3.2). In describing the EM system Daniel notes that '*... the policy is not dedicated to the environment, but includes health and safety of its employees and affected parties*' (DF4, ass 2.1). He further notes that the policy is generic and includes aspects for different geographical and environmental contexts (DF4, ass 2.1). The rich technical descriptions found in assignment 1 is still evident in assignment 2 for a large part, though there are some hints of change (DF4, ass 2.1). Daniel feels that the course was a huge challenge for him, '*... it was a change ... I am very used to writing exams and getting to know my pass mark or not getting the pass*

challenge to goals

mark ... *it is very goal orientated*' (DF7, pers.com D-30/10/00). He notes that '*... when I now look at my assignments I can see that they have changed subtly ... I was becoming more at ease with writing them ... my first assignment was very technical ... it was difficult to move from a technical presentation to a more interactive discussion in the assignment*' (DF7, pers.com D-30/10/00). Daniel notes that as he progressed through the course, he realised that the assignments were not meant to be a technical thing and '*... that is where I was going wrong at the start in the assignments*' (DF7, pers.com D-30/10/00). He realised this when his second assignment came back with comments, that '*... it was more of a critique and I realised this*' (DF7, pers.com D-30/10/00). His assignments then '*... became more lateral thinking, a critique of what I saw to be problematic*' (DF7, pers.com D-30/10/00). Daniel feels that the assignments and assessment of these facilitated this change, supported by the course readings and case studies, as well as interaction amongst participants (DF7, pers.com D-30/10/00). Daniel notes that he found some difficulty in the assignment work and this difficulty is linked to the technical style in which he attempted to present the assignments (DF7, pers.com D-30/10/00). He notes that he can see the change in his assignment work, for example in assignment 1, '*... it started out as a technical report rather than a discussion of own ideas*' (DF7, pers.com D-30/10/00). He feels that this is largely influenced by his work context (DF7, pers.com D-30/10/00). He feels that some of the change in writing style might be useful in his work context, for example writing for the newsletter on the environment, which the guys in his department have initiated (DF7, pers.com D-30/10/00).

as of goals & consequences

change to technical writing style

PARA 2/18 Daniel notes that he often questioned his participation in the course thinking that '*... I am not a teacher and what am I doing here ... I now see that it was necessary to explore things to get the bigger picture*' (DF7, pers.com D-30/10/00). In discussing the change in his goals during the course, Daniel notes that in his old way of thinking that would never have worked for him (DF7, pers.com D-30/10/00).

He notes that *'... one of my strengths as a technical services manager is that I can see what I've got and I can guide and control it to achieve that goal... if something ruins that goal I get very annoyed'* (DF7, pers.com D-30/10/00). *'... through the course the goal often changed for me and I surprised myself with this ever changing goal ... that I didn't get annoyed halfway through the process ... that halfway I didn't lose my temper and see the goal shoot out of the window'* (DF7, pers.com D-30/10/00). Daniel feels that this has changed things for him already in his work context in that he has not been completely negative to the goals that have recently been changing in his organisation (DF7, pers.com D-30/10/00). He notes that *'... in some areas the goals are still specific, in others they have become grey and it doesn't bother me that much'* (DF7, pers.com D-30/10/00). Daniel feels that the context within which he works defines this need for goals and he has become very used to it having worked in this context for a long time, *'... I am like a fish out of water without my goals'* (DF7, pers.com D-30/10/00).

*changed reaction
to changing goals.*

PARA 2/19 Daniel notes that what he *'... found to be the most enlightening or rewarding in the process'* was that he had gone through a *'... self examination, I had critiqued my own method of doing things , very reluctantly ... it has changed my outlook in doing so'* (DF7, pers.com D-30/10/00).

*Changed
outlook*

FINAL CASE STUDY CONSTRUCTIONS - APRIL 2002**CONSTRUCTION 5 - Songezo Mdoko**

At the time of the research, Songezo was unemployed and working with the Grahamstown Unemployed Workers Union, attempting to address environmental issues and issues of unemployment in the community, simultaneously. He was part of the 1999/2000 course, and part of the Eastern Cape regional group. I chose Songezo as one of the case study participants because his pre-course assignment reflected a keen interest in community based environmental education programmes.

DATA SOURCES USED**1. Songezo's Portfolio (DF5)**

- Background questionnaire (quest.)
- Pre course assignment (ass0)
- Assignment 1 - draft 1 (ass1.1)
- Assignment 1 - draft 2 (ass1.2)
- Assignment 1 - draft 3 (ass1.3)
- Assignment 2 - draft 1 (ass2.1)
- Assignment 2 - draft 2 (ass2.2)
- Assignment 2 - draft 3 (ass2.3)
- Assignment 3 - draft 1 (ass 3.1)
- Assignment 3 - draft 2 (ass3.2)
- Assignment 4 - draft 2 (ass4.2)
- Assignment 4 - draft 3 (ass 4.3)
- Course file (cf)

2. Interviews (DF7)

- First interview 13/10/99 (pers.com S-13/10/99)
- Final interview 20/10/00 (pers.com S-20/10/00)

3. Observation notes (DF8)

- Eastern Cape regional tutorial 22 - 23/10/99 (obs.notes 22 - 23/10/99)
- National Workshop 04 - 06/02/00 (obs.notes 04 - 06/02/00)
- Eastern Cape regional tutorial 10 - 11/03/00 (obs.notes 10 - 11/02/00)
- National Workshop 07 - 09/07/00 (obs.notes 07 - 09/07/00)
- Site visit 20/10/00 (obs.notes 20/10/00)

4. Comments on constructions (DF 1)

- Comments from Songezo (C1)
- Comments from Lawrence (C2)
- Comments from Heila (C3)

1. ACADEMIC BACKGROUND AND WORK CONTEXT

PARA 1/1 Songezo matriculated from High School in 1982 and since then has worked in civic organisations and particularly in the formation of civic organisations, the South African National Civic Organisation, in his community (DF7, pers.com S-20/10/00). He notes that *'... since 1983 I have been involved in civic organisations ... the aims was to eliminate the apartheid structures and I wanted to be part of that'* (DF7, pers.com S-20/10/00). He describes the civic organisations as being the *'... mouth organ of the Grahamstown community in any matters affecting the community'* (DF5, quest.). In the previous political dispensation, the civic organisations were one way of opposing the oppressive forces of the apartheid regime and the organisation works to ensure adequate service delivery to communities, such as housing and recreational facilities (DF7, pers.com S-20/10/00). Since 1994 though he doesn't see the purpose of the civic organisations opposing the government and the level of service delivery since he believes that the government *'... is doing something for the people ... so the civic organisation cannot really come up with an alternative'* (DF7, pers.com S-20/10/00). He notes that *'... the time I was involved in civic organisations was to fight the apartheid government'* and now he almost doesn't see the need for it anymore (DF7, pers.com S-20/10/00). He further notes that *'... recently I have been less involved because of friction in the civic organisation and the agency and I try to help in other things in the community'* (DF7, pers.com S-20/10/00).

PARA 1/2 For the past six years Songezo has been involved in the unemployed project in Grahamstown, which is a project under the umbrella of the civic organisation, trying to address issues of large scale unemployment in the community (DF7, pers.com S-20/10/00). Here he occupied a position at the unemployed desk, where he initiated the plan for creating self-employment (DF7, pers.com S-20/10/00). The focus here is on job creation *'... to do something to earn a living'* (DF7, pers.com S-13/10/99). The organisation *'... on the one hand ... served as*

employment agents and on the other hand we were establishing a self help project, a co-operative we organised sewing groups, knitting groups, wiring groups' (DF7, pers.com S-20/10/00) and '... planning ... brick making projects' (DF7, pers.com S-13/10/99). He worked as the co-ordinator of the project, organising funding for the project and writing project reports as some of his functions (DF7, pers.com S-20/10/00). Songezo notes that this was a foreign funded project and since 1994, with political changes, foreign investors were reluctant to invest further funds into the country and the project was then discontinued (DF7, pers.com S-20/10/00).

PARA 1/3 For the past two (2) years Songezo has '... been involved in focusing on environmental issues' (DF7, pers.com S-20/10/00) and currently his specific role in the civic organisation is serving on the health and environment desk (DF5, quest). He describes the functions of this role as '... seeing to it that our community is environmental clean - services are rendered by local authority - greening the community etc.' (DF5, quest.). In this role in the organisation Songezo has been involved in trying to address some of the environmental issues in the community, such as waste, water and greening issues (DF5, ass 0). He similarly, sees this as a way of generating income and going some way to addressing the issue of unemployment in the community (DF7, pers.com S-20/10/00). '... we intend to create jobs for them ... to work for the cleaner of our communities by embarking people towards recycling programmes' (DF5, ass0).

PARA 1/4 Songezo's interest in environmental issues was sparked when he started comparing his own community to that of the Grahamstown West community (DF7, pers.com S-20/10/00). He notes that *'... things are not the same ... environmentally ... not as much greening as in the West ... the West is much cleaner ... the differences are there because of the past government'* (DF7, pers.com S-20/10/00). He notes that in reading some material he *'... became concerned with waste ... big problem in daily lives ... result of communities carelessness and ignorance'* (DF7, pers.com S-

can be explained by the state problem

13/10/99). In discussing his interest in environmental education, Songezo feels that most of the black communities have been neglected as far as environmental education goes (DF7, pers.com S-20/10/00). He would like to focus on encouraging '*... people to respond to cleaner surroundings ... community taking responsibility for their own surroundings*' (DF7, pers.com S-20/10/00).

PARA 1/5 Songezo's vision in the community is trying to encourage people to look at ways of addressing some of the issues themselves, and talks about the unemployed project through which '*... people could become part of the self help schemes and people could be able to use their talents*' (DF7, pers.com S-20/10/00). He talks of wanting to '*... see my community free from illegal dumpings, I want to see tidying and greening*' (DF7, pers.com S-20/10/00). He sees opportunities in recycling '*... as a means of [earning] an income ... people have something to do ... may stop burglaries*' (DF7, pers.com S-13/10/99). Songezo feels that the priorities in his community is the one of greening noting that people '*... need to be taught the importance of greening ...*' and feels that it is important since '*... it gives us shade, fruits ... make the community beautiful*' (DF7, pers.com S-20/10/00). He sees the community's role as planting the trees and nurturing them and feels that the community needs to know the importance of greening (DF7, pers.com S-20/10/00). He sees his own role in this vision as organising '*... more relevant information of education on ... some techniques to planting a tree ... how to keep [the tree] growing, how to make compost for the tree*' (DF7, pers.com S-20/10/00).

orientation to knowledge

PARA 1/6 Songezo heard about the Gold Fields course through a friend of his, and at the time he was looking for '*... something ... to help me get started with a practical project*' in the community (DF7, pers.com S-20/10/00). He was hoping, through the course to, '*... plough skills back into the community ... gain skills and be able to give back to the community*' (DF7, pers.com S-13/10/99). Lawrence notes that this '*... was always a powerful motivating force behind Songezo's approach, and something he*

seems to share with many others' (DF1, C2). Songezo's immediate expectations of the course was '*... to learn more about environmental issues, i.e. the crisis ... how to respond to them ... be able to mobilise communities so as to canvass for support ... plough back information to the communities ... be able to form community environmental clubs for students'* (DF5, quest.). Through the course he wanted to know more about '*... community environmental action as we are all struggling to make clean'* (DF5, ass0). His further expectations are '*... to be able to alleviate the social conditions in my community and to be able to respond to issues ... motivate me with knowledge ... about environmental education ... that I could plough back into the community'* (DF7, pers.com S-20/10/00). *orientation to the role of knowledge*

PARA 1/7 In support of the community based work that he does, Songezo has in the past also completed short courses in leadership skills, a basic course for adult education, conflict resolution and counselling (DF5, quest). He chose to do the course on counselling because he sees '*... so many problems in our society ... family violence, rape, abortion, child abuse, HIV* (DF7, pers.com 20/10/00). He also sees many disputes that one gets involved with in our society and for that reason he did the conflict resolution course (DF7, pers.com 20/10/00). In his community he notes low levels of literacy amongst community members and did the ABET course as a way of helping people over the barrier of low literacy, '*... I would like to be one who would be able to help them*' (DF7, pers.com S-20/10/00). And in the same way '*... addressing some of the conditions under which people live*' (DF7, pers.com S-20/10/00). He has used his experience in these courses to facilitate workshops in the community and specifically workshops in ABET. Through the experience gained in the counselling course, he has '*... helped people find solutions to their own problems ... he doesn't believe in telling people what to do with their problem ... rather helping them to find the solution to the problem*' (DF7, pers.com S-20/10/00). If he were to further his studies he notes that it would be in the field of environmental studies (DF5, quest). In this light Lawrence notes that '*...he does have a real concern for people in his*

community' however the actual effectiveness of his interventions are hard to determine (DF5, C2).

2. PROFESSIONAL DEVELOPMENT IN THE CONTEXT OF THE GOLD FIELDS COURSE

PARA 2/1 In his pre course assignment, Songezo notes '*... waste, water and planting trees*' as environmental priorities in his community (DF5, ass0). He feels that ~~waste is a particular issue, specifically plastic pollution~~ since it '*... has impact on residents on our daily lives*' (DF5, ass0). He sees people as being the cause of the problem and being in a position to respond to the problem, in noting '*... it is man made and the methods of managing it*' (DF5, ass 0). He reflects on the causes of plastic pollution in the community and notes that supermarkets, though not physically present in the community, contribute to the problems through their packaging (DF7, pers.com S-13/10/99). Through reading the course materials, Songezo notes that he became concerned about the issue of waste in his community (DF7, pers.com S-13/10/99), which he explores through his assignment work (DF5, ass 1.1). In the first draft of assignment 1, he tends to deal with waste very generally rather than specific to his own context (DF5, as 1.1). Here he begins by defining waste using the enviro fact sheets from the course materials, then looking at '*... pedestrians, motorists, homes, shops, uncovered trucks, construction sites and loading and unloading operations*' as *the main causes of litter*' (DF5, ass 1.1). In this light Lawrence notes that at the start of the course there is a tendency for participants to try to put everything they feel and know about the environment into their assignment work (DF5, C2). A major challenge for tutors is to try '*... to help develop a focus for these things*' (DF5, C2). Songezo goes on to note that '*... pollution ... is a serious threat to our health ... are not separate from the environment as it is caused by the people ... due to our carelessness and ignorance*' (DF5, ass1.1). These ideas are discussed under the heading of '*... nature*', the causes and impacts, though briefly noted here are not

general
in
the
work

Look
integrating
experience
to know
please
practice

clearly separated and fully explored in the context of the assignment (DF5, ass 1.1).

Songezo goes on to further explore some ways of addressing the issue and proposes that *'... we shop wisely ... certain things contribute more to rubbish than others ... anything that is sold in a lot of packaging'* (DF5, ass1.1). The second draft of

assignment 1 continues to be very general (DF5, ass1.2), though in the third draft he focuses his discussion more specifically on the issue of plastic pollution (DF5, ass 1.3).

Here Lawrence notes that *'... the creation of a little more focus starts to show itself'* and through this he feels that the ideas become more manageable (DF5, C2). In the

description of waste in his community he then draws more attention to *'... plastic bags, plastic bottles and plastic pipes that are littering and scattered in our townships ... because of their lightness they are easily carried by the wind'* (DF5, ass 1.3).

In the third draft of assignment 1, he appears to interrogate the causes of the issue a bit more deeply (DF5, ass 1.3). Here he notes that *'... industries are making*

these plastic bags and other plastic materials to supply supermarkets and hardware companies ... consumers are not allowed to carry their own bags while they go for shopping ... are provided with plastic bags because there is a fear of stealing' (DF5, ass 1.3).

Songezo discusses additional causes of the issue of waste as being *'... no campaigns to inform supermarket managers to stop sticking the shelves with plastic packaging ... no awareness programmes and citizens do not have a culture of cleanliness'* (DF5, ass 1.3). The discussion of plastic pollution, through the three

drafts still appear to be general and applicable to any context rather his specific context of the Grahamstown community (DF5, ass1.2; DF5, ass 1.3). Lawrence

similarly feels that *'... the balance between general and specific was quite hard for Songezo to achieve'* and notes that this is the case with most participants in the

course (DF5, C2). In the second draft of assignment 1, he uses the various dimensions in the O'Donoghue model, referenced from the course materials, to discuss the effects of the issue (DF5, ass1.2). In this discussion, Songezo feels that

'politically, ... local authorities have a duty to look at waste management and people need to be taught ... how to handle waste by means of educational programmes ... how

stopping labels
and what he
sees.

to deal with the waste problems' (DF5, ass1.1). Under a heading of 'social effects', Songezo describes some of the effects of an unhealthy environment in which marine plants and animals, wild animals and livestock die because of plastic pollution (DF5, ass1.1). Under the heading of 'economic', he notes that '*... recycling methods can provide people with something to survive*', and notes the negative effects of a dirty environment on tourism, through which this '*... unhealthy environment is making people poor...*' (DF5, ass1.1). In the third draft of the assignment, Songezo notes the social effects as '*... household waste is dumped on our streets ... contribute to the untidy waste in our communities ... cows and goats open these while waiting for collection ... people are not keeping their animals locked*' (DF5, ass 1.3). Within the 'biophysical' effects, he feels that '*... our future and generation to come is bleak ... we are using our natural resources to make plastics*' (DF5, ass 1.3). Politically he feels that '*... waste management is not adequate ... no recycling programmes ... communities seem to ignore waste management*' (DF5, ass 1.3).

PARA 2/2 In assignment 2 Songezo continues to explore the issue of waste in his community in noting that the causes of the issue lie in a range of '*... socio-economic malfunctions ... non-existent waste removal systems, lack of proper waste containers, poor sanitary conditions, no environmental education awareness programmes as part of imparting knowledge to the others and recycling activities*' leading to an apathetic attitude amongst communities' (DF5, ass 2.1). He uses assignment 2 to explore potential aims, objectives and principles of a proposed environmental education programme for use / application in his community (DF7, ass 2.1). In the first draft of assignment 2, Songezo does not draw a distinction between these three, and discusses them all together under one heading of '*aims and objectives*' (DF5, ass 2.1). In the second draft of assignment 2, he specifies the aims more clearly as being '*... to enhance the quality of life of Grahamstown residents by building and sustaining a clean community through educating and involving the public in better waste management practices*'. (DF5, ass 2.1). A second specified aim is '*... to create a sustainable livelihood ... through improved access to environmental education*' (DF5,

ass2.2). The stated objectives are to '*... to improve the level of public awareness with regard to pollution management*' and '*... improve the capability of community action in the development and maintenance of green spaces*' (DF5, ass2.2). Through the process of assignment writing, Songezo was able to work through his visions for an environmental education programme for his community and developed these aims, objectives and principles from scratch (DF5, ass2.3).

*Interaction with
environment
process*

PARA 2/3 Songezo appears to place a lot of emphasis on knowledge accumulation and transfer in his expectations of the course and discussion of his proposed programme (DF5, ass0). Of this Lawrence writes that this '*... reflects* and education experience that placed knowledge at the centre of things' and further notes that the idea that '*... knowledge is power*' has a strong place in this context and culture (DF5, C2). In noting his expectations he states that he wants to know more '*... about nature conservation education and natural resources ... youth involvement is another essential, so as to impart knowledge*' (DF5, ass0). He also wants to '*... broaden my knowledge in spatial development ... plough the knowledge back into my community ... be aware of issues related to the environment and to conscientise other people*' (DF5, ass0). Further expectations of the course are to '*... motivate me with knowledge that I could plough back into the community ... knowledge about environmental education*' (DF7, pers.com S-20/10/00). He feels that community issues can be addressed if '*... we empower [people] with the relevant information and relevant education*' (DF7, pers.com S-20/10/00). '*... I think they can be able to see what is it that needs to be done ... people can change their behaviour, in terms of getting employed themselves rather than just sitting down*' (DF7, pers.com S-20/10/00).

PARA 2/4 In exploring the aims, objectives and principles of a proposed waste management programme, he defines one of the objectives as being to '*... improve the level of public awareness with regard to pollution management*' (DF5, ass 2.1). In motivating for the aims, objectives and principles that he had chosen for his

programme, he notes that *'... once people are equipped with skills, knowledge and are involved in decision making then they are able to do things on their own and solve their problems'* (DF5, ass 2.1). He equates this process to an *'... enablement process'* where *'... we learn from our experiences to make a difference hence it is important to listen, change attitudes that would eventually lead to actions'* (DF5, ass 2.1). In assignment 3, in discussing methods and processes appropriate to his programme he describes *'... empowerment'* as *'... a process whereby people are equipped with necessary information that is knowledge of skills relevant to the work he/she is doing'* (DF5, ass3.1). He concludes this assignment in noting that environmental education is about *'... empowering people with information'* (DF5, ass 3.1). In describing his ~~orientation to theory~~ proposed programme in assignment 4, Songezo notes that his programme reflects some behaviourist ideas since they are *'... informative, educative in the sense of giving knowledge and make people aware and change behaviour ... I am trying to conscientise and make people responsive'* (DF5, ass 4.2). He notes that he *'... think[s] it is better to inform and to give people knowledge before they take action'* (DF5, ass 4.2). He further describes the workshops in his programme, which he feels reflects more constructivist ideas, where *'... people engage in discussions, exchanging their ideas with the aims of getting information and construct knowledge from others'* (DF5, ass4.2). Lawrence notes that initially Songezo was using the rhetoric without showing a clear understanding of it (DF5, C2). Towards the end of the course *'...he is showing a more considered use of the terminology and linking it more precisely and accurately to its meaning in context'* (DF5, C2).

PARA 2/5 In discussions of responding to environmental issues in his context, Songezo appears to focus quite strongly on community participation and collaborative action early on in his assignment work (DF5, ass0; DF5, ass 1.1; DF5, ass 2.1). In his pre course assignment he argues for *'... community environmental action'* and *'...environmental awareness and campaigns through people's participatory action'* and *'... to know how to develop skills and take action'* (DF5, ass0). In assignment 1, he

similarly notes that CBOs and NGOs need to join hands with government to address issues of waste in the community, alluding to participatory approaches to addressing environmental issues (DF5, ass1.2). He further emphasises community action in '*let the people themselves doing methods of alleviating the problem*' (DF5, ass1.2). Similarly in exploring aims and objectives of a proposed programme, he lists one of his objectives as being '*the need for community action in the development and maintenance of green spaces and other public facilities and amenities*' (DF5, ass2.1).

Other objectives he developed for this programme is '*holding meetings with community and get assistance from the TLC ... involve the youth ... environmental clubs in schools and communities*' (DF5, ass 2.2). In the principles he further notes that

any ee programme '*...must integrate knowledge skills, values attitudes and actions ... must facilitate equal partnerships in ... decision-making*' (DF5, ass2.1). Songezo draws

on the theoretical ideas reflected in the principles, drawn from the course materials, and notes that '*... communities must regain control of their own destiny*' (DF5, ass 2.1). He feels that these chosen principles reflect the ideas of '*human participation action*', which appears to be the visions which he has for the proposed programme (DF5, ass 2.1). In concluding the assignment he notes that '*... development is about people ... any matters affecting their lives and take full responsibility*' (DF5, ass 2.1).

Of this Lawrence notes the '*... almost obsession with participation*' and notes that there is always questions as to what this actually means and how it plays out in practice (DF5, C2). He further notes that there appears to be a tension between

participation and the emphasis on awareness, attitude change and changing behaviour, which he not sure about how Songezo intended to bring the two together (DF5, C2).

In describing the methods and processes which he has chosen for his programme he describes the planned workshop as an opportunity '*... which involves and encourages people's participation*' (DF5, ass 3.2). He further motivates for the choice of

constructivism as an approach allows for participation and encourages people to '*... plan together, to get a common understanding as a community*' (DF5, ass 3.1). In reflecting on his professional development in the course, he feels that '*... people are*

of
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form
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relative to
addressed his concern

able to engage in participation, they can come with their own ideas and plan things themselves' (DF7, pers.com S- 20/10/00).

*reference of
or neglected
mis information*

PARA 2/6 For assignment 4, Songezo has developed a '*... waste management awareness raising programme*', for use in the Grahamstown East community (DF5, ass 4.2). The programme aims '*... to make the communities tidy and clean ... encourage people to ... recycl[e], re-us[e] ... and ... reduce waste ... this programme also seeks to conserve natural resources and save landfill spaces*' (DF5, ass 4.2). In the programme Songezo defines specific objectives to '*... show what the programme intends to do*', linked to specific activities, time frames and expected outcomes for each of the objectives (DF5, ass 4.2). An example of proposed activities linked to one of the objectives is '*... to raise awareness of community on the need for waste management*', he plans to consult '*... through present[ing] the concept to schools, churches and the broader community, through visits, media and posters ... conduct workshops for schools the youth, women and unemployed ... develop appropriate posters and pamphlets for the campaign*' (DF5, ass 4.2). For these activities Songezo has defined a specific time frame '*... August - Sept, Sept - Nov, Dec - Jan*' with the expected outcome being '*... people and communities begin to be environmentally conscious*' (DF5, ass 4.2). Another example for the objective '*... to educate the community on how to keep their places clean and tidy*', he defines the following activities '*... identify volunteers who would support the campaign ... volunteers start cleaning their communities ... municipality picks up all the waste*' (DF5, ass 4.2). Here the expected outcome is '*... communities are working independently on keeping their environment clean and tidy*' (DF5, ass 4.2). The time frame specified for these activities are '*... March - July*' with the expected outcomes being '*... communities are working independently on keeping their environment clean and tidy*' (DF5, ass 4.2).

PARA 2/7 The aims and objectives of the proposed waste management programme are those which Songezo had formulated while doing assignment 2 (DF5, ass 4.2). In

describing the development of the proposed programme, Songezo notes that in developing the programme '*... efforts have been made to get views from other institutions to share ideas*' though this idea never did materialise (DF5, ass4.2). Of this Lawrence notes that quite a few of the ideas did not translate into practice and Songezo '*... seemed content with working within the ideas and somehow reluctant to test them out*' (DF5, C2). Lawrence notes that he often reflected frustration in the lack of response he received from the municipality, but did not go further to consider an alternative approach to fostering their involvement (DF5, C2). He notes though that in implementing the programme '*... broad consultation will be made to make it accessible, explaining to the community and to involve them*' (DF5, ass 4.2).

PARA 2/8 Songezo feels that this proposed programme reflects '*... action research and community problem solving*' approach since '*... people will be involved in addressing their environmental issues to find a way of solving their problems*' (DF5, ass4.2). He feels that this shows a shift from top down authoritative approaches to '*... a democratic, participatory approach where communities are engaged in the planning and take joint action*' (DF5, ass4.2). He further feels that the '*... programme is participatory because it involves all sectors of the community ... it is educational in... ploughing knowledge to the community*' (DF5, ass4.2).

PARA 2/9 Songezo notes that he experienced problems in getting local authorities to buy into the programme, and meetings which were called often did not happen (DF7, pers.com S-20/10/00). The proposed waste management programme was meant to start in August 2000 '*... but I talked with my ex mayor about it and he made promises about it but I never saw anything happening on the ground*' (DF7, pers.com S-20/10/00). Despite the fact that not much has come from the envisaged programme, he plans to persevere and to talk to with some other people, referred to him by Tembeka (one of the other tutors on the course), through whom he could possibly raise some funding for the programme (DF7, pers.com S-20/10/00). He feels

it is important to '*... link the plan to the work of the municipality since it is the duty of the municipality first to clean our community ... it is their responsibility*' (DF7, pers.com S-20/10/00).

PARA 2/10 In continuing work in promoting improved waste management practices in his community, Songezo got the opportunity to work with schools in the community (DF7, pers.com S-20/10/00). The programme, co-ordinated through the Rhodes University Environmental Education Unit (RUEEU), seeks to explore improved waste management practices at schools, through curriculum processes (DF8, obs.notes 20/10/00). His role in this programme is to support the work which schools are doing (DF8, obs.notes 20/10/00). He feels that this programme is somehow linked to the community based waste management programme, in that it could work through learners at school to their parents and '*... when you start with children at school they will teach the adults*' (DF7, pers.com S-20/10/00). He notes that he is able to use some of the ideas which he developed through the course in this programme, for example, group discussions of questions pertaining to waste management practices, mind maps '*... to see what is waste, where it comes from and where it goes*' (DF7, pers.com S-20/10/00).

PARA 2/11 In exploring the effects of the issue of waste, in assignment 1, Songezo notes the advantages of increased industrial activity in that '*... more industries bring more jobs for jobless people so they can enjoy a living*'. (DF5, ass1.2). Though he similarly recognises that '*... on the other hand more waste, eg. plastics, and pollution is created*' (DF5, ass 1.2).

PARA 2/12 In reflecting on how changes in educational ideas has shaped his programme, Songezo notes that prior to '*... 1990 there was no community involvement and participation in environmental matters*' and '*... no educational information*' (DF5, ass 3.2). He notes these aspects as a backdrop to recognising opportunities to

implement environmental education programmes '*... through socio-economical and political changes ... developments in educational arenas ... to equip workers with knowledge of skills and participation*' (DF5, ass 3.2). Lawrence notes that by the time Songezo was writing assignment 3, he was showing dramatic development in his understanding and his thinking (DF5, C2). He further notes that there is '*... still a strong element of rhetoric but seemingly more grounded*' (DF5, C2). *more grounded rhetoric*

PARA 2/13 In critically reflecting on the programme which he developed, Songezo notes that the next time he will attempt to develop the programme with a group of people from the start instead of doing it by himself (DF5, ass 4.3). He notes that '*... next time I will organise and work with the groups of people from the start to make our views strong rather than to work as a person*' (DF5, ass4.3).

PARA 2/14 In working through the different drafts of assignments, Songezo appears to reach more clarity in his ideas from one draft to the next (DF5, ass 1.1 - ass 4.3). In assignment 1 he discusses waste very generally in the first draft, by defining it, looking at the sources of waste and ways in which it can impact on communities in general (DF5, ass1.1). In subsequent drafts he begins to discuss waste more specifically with reference to plastic waste as experienced in his own community (DF5, ass1.2; DF5, ass 1.3). Similarly in assignment 2, Songezo more clearly defines aims, objectives and underlying principles of his proposed programme, as he moves from one draft to another (DF5, ass 2.1-2.3). In assignment 3 Songezo begins with a

very theoretical discussion of methods and processes as described in the course materials, '*... behaviourism is an educational idea which passes information through transmission teaching*' (DF5, ass 3.1). He goes on to describe '*... constructivism ... social constructivism ... social critical constructivism*' in the same theoretical way (DF5, ass 3.1). In the next draft of assignment 3, Songezo talks about the poster he is planning for his programme and discusses it in relation to behaviourist ideas, since it will be '*... imparting educative information through transmission teaching*' in an

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to heavy
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to the point
of the assignment*

attempt to '... change other people's behaviour through raising awareness, attitude change' (DF5, ass 3.2).

PARA 2/15 The waste management programme is currently non-existent and Songezo has used the opportunity of assignment writing to clarify aims and objectives for this envisaged programme (DF5, ass2.3; DF8, obs.notes 22-23/01/00). These aims and objectives developed in assignment 2, Songezo has used for the proposed waste management programme which he has developed for assignment 4 (DF5, ass 4.2).

PARA 2/16 Songezo feels that through discussions with people he better understands the issue of waste '... before waste was something to just throw away ... *interaction with others, ass, case material*
I better understand the waste issue now ... that you can recover something from waste' (DF7, pers.com S-20/10/00). Also through reading and the writing of assignments, '... I have read some things around the waste issue, writing assignments' (DF7, pers.com S-20/10/00). The course has also helped him to understand learning processes a lot better and '... I have seen opportunities of using these in the school programme with which he is now involved' (DF7, pers.com S-20/10/00). In this light Lawrence notes that though the course has led to new insights '... the problem remained of translating his new understanding into tangible action' (DF5, C2). *translation of new insights into action remained problematic*

Improved writing skills

PARA 2/17 Songezo notes that during the writing of assignments, he tended to focus more on the ideas in the assignment, rather than on the grammar (DF8, obs.notes 22 -23/01/00). He feels though that he should relook at the grammar at the end of the assignment and feels that grammar and spelling could also be corrected through peer review of assignments (DF8, obs.notes 22 -23/01/00).

PARA 2/18 In a process of self assessment which Jane and Lawrence ran in the EC tutorial, Songezo found the process particularly helpful since it gave one an idea of '...

where you are ... what are weaknesses, what are strengths ... able to say I can do this and this ... I can't / didn't do this and helps you understand why' (DF8, obs. notes 22 - 23/01/00). Lawrence feels that, though this is true, *'... there is not really much evidence of his applying this with any real rigour to his own work, particularly in relation to assignment 4'* (DF5, C2).

PARA 2/19 Songezo appears to have worked with his course file in completing some of the activity blocks, though whether this was done on his own or as part of tutorial activities is not clear (DF5, cf). For activity 2.1 in his course file he notes that *environmental education'... is about equipping people with skills to identify and solve problems and then mobilize people through participation and towards action'* (DF5, cf). Songezo appears to have attempted to keep his file neat and tidy and appears to have tidied his file before handing it in at the end of the course (DF5, cf). So it appears that much of what Songezo had developed over the year of the course had been removed for this assessment, and the interaction with the course file could not be clearly seen from what remained (DF5, cf).

Interaction with course materials quite a bit

PARA 2/20 In his initial assignments, Songezo uses some quotes from the course materials but does not discuss these relative to his own practice, eg. in the first draft of assignment 1, he references the O'Donoghue model but does not later refer to it in discussing the causes and impacts (DF5, ass1.1). Similarly he references a quote from Fien on the environment *'... the concept is a social construct referring to the interactions between social and biophysical systems'*, but does not refer to his particular context in relation to this quote (DF5, ass1.1). In the second draft of assignment 1, he refers later on to the quote by Fien and notes that *'... we cannot separate the problems and causes from the above definition of environment as they are man made'* (DF5, ass1.2). In the same draft he similarly refers to the dimensions of the environment from O'Donoghue's model, as presented in the course materials,

in ass 1 begins to integrating ideas.

and uses these as headings in discussing the effects of the issue of waste (DF5, ass1.2)

PARA 2/21 In discussing the '*... environmental educational processes and methods*', in assignment 3, Songezo appears to draw quite strongly on some of the theoretical ideas presented in the core text, '*... social constructivism ... interaction of people with one another and their environment and yet it allows participation from the community to get what is required*' (DF5, ass 3.1). In this discussion he further notes that '*... the action research method is the simplest way ... the real life example is fieldwork*' (DF5, ass 3.1). These ideas appear to be discussed with very little relevance to the actual context within Songezo works and the visions that he has for the environmental education programme (DF5, ass 3.1). Lawrence notes this as another example of how Songezo '*... seemed to revel in the rhetoric and terminology, allowing the words themselves to be the meaning, before working to understand their real value and importance*' (DF5, C2). He feels that this led to the difficulty of locating the ideas in his own context. He feels the ideas were '*... too distant, too removed while being extremely alluring*' (DF5, C2). The second draft of this assignment is still fairly theoretical, though there appears to be attempts made to relate these ideas more to his practice (DF5, ass3.2). He introduces the assignment by first describing what he envisages for the programme, '*... workshop ... poster*' (DF5, ass 3.2). He talks of a workshop planned in this programme, having as its main purpose '*... to share ideas, knowledge and experiences about what IWM constitutes and to construct new knowledge*' (DF5, ass 3.2). He describes, under the heading of processes, to '*... introduce the concept of the workshop ... allow discussions in groups ... report back from groups ... allow questions and answers*' (DF5, ass3.2). He further notes that in the choice of this workshop he is influenced by the constructivist theory '*... because it allows participation, discussions and construction of new ideas from others based on shared ideas ... it involves and encourages people's participation for example clean up operation*' (DF5, ass 3.2). In this discussion of the proposed workshop he draws on

single
in
increased
methodological
research.

eg of developing
a phenomenological
approach.

the ideas in the core text to support his discussion, shown by referencing 'Bodner 1986 core text III p11' (DF5, ass3.2). Songezo draws on some of the course readings to motivate his discussion to motivate for more participatory approaches to environmental education in quoting O'Donoghue and Janse van Rensburg (1995), '*... active learning with fieldwork and problem solving activities in the environment started to characterise broader more participatory, more local and more action centred approaches to ee*' (DF5, ass 3.2). Lawrence notes here that he sees more rhetoric, '*... but perhaps with more depth of understanding*' (DF5, C2). Lawrence further notes that though this liberal use of quotations did serve to build out the assignment, it shows that Songezo was working with the core texts and readings which he feels is '*... quite a feat in itself*' (DF5, C2).

PARA 2/22 In reflecting on his professional development in the course, he feels that he understands environmental education processes better and also the theories helped him (DF7, pers.com S-20/10/00). He describes some of the features of a programme with which he is currently involved, where he feels that he has used '*... a little bit of the behaviourist approach and also the socially constructivist approach at Ntaba Maria*' in talking about the primary school with which he has worked (DF7, pers.com S-20/10/00). Lawrence notes that this is an '*... entirely valid use of a behaviourist approach*' and feels that it shows that Songezo was '*... getting to grips with the practical implications of these concepts*' (DF5, C2). At the high school with which he is working he feels that he has used the behaviourist approach because '*... instead of getting people to share their ideas for people to construct information, I had to give them information so that they could get into it*' (DF7, pers.com S-20/10/00). He notes that he experienced some problems in the response from the high school learners to a discussion on waste management options (DF8, obs.notes 20/10/00). At Ntaba Maria, '*... we wrote some questions on the board and people discussed the questions in groups and came up with answers to the questions*' and '*... while people discussed in groups I moved around them*' (DF7, pers.com S-20/10/00).

He notes that learners responded very positively to the mind map and discussions and this discussion allowed learners to think about what they could do about waste in their school context (DF7, pers.com S-20/10/00). He notes that his exposure to *the constructivist approach and theories, that I learnt on the course helped me to see that people are coming with their own ideas and sharing these ideas* (DF7, pers.com S-20/10/00). *Barrrrr*

PARA 2/23 Songezo's initial assignments takes on a fairly academic tone, where he references readings from the course materials, but without drawing the relation to his particular context, such as the definition of waste in assignment 1 (DF5, ass 1.1). Though in later drafts, as noted by the tutor, he begins to *'... speak in your own voice'* in exploring the issue of waste, still very generally and less specific to his own context (DF5, ass1.1; DF5, ass1.2), but which might imply the beginning of developing confidence in his own ideas and expressing these. *Confidence in expressing his own ideas*

PARA 2/24 In reflecting on his professional development in the course, Songezo feels that he has *'... learned about the community clubs, environmental clubs'* and feels that he is now able to form one of these (DF7, pers.com S-20/10/00). He notes that he has also realised that *'... people are able to engage in participation, they can come with their own ideas and plan things themselves'* (DF7, pers.com S-20/10/00). He goes on to note that he found the course to be relevant in that it was *'... encouraging and aimed at empowering us ... help you to understand ... to care for our surroundings'* (DF7, pers.com S-20/10/00). He also feels that the course has helped him to *'... understand processes of learning and I have seen opportunities of using these in the school programme'* (DF7, pers.com S-20/10/00).

PARA 2/25 Songezo, together with the rest of the group of EC participants found the readings in the course file to be particularly difficult (DF8, obs.notes 22 - 23/01/00). Jane developed some key questions around which participants could focus

the readings (DF8, obs.notes 22 - 23/01/00). In reflecting on this process of reading Songezo notes that '*...the questions helped to understand the focus areas*'. After initially finding the readings difficult, Songezo notes that '*... the questions made it easier*' (DF8, obs.notes 22 - 23/01/00). In this light Lawrence feels that '*... after the breakthrough with the readings, the course opened up considerably for Songezo*' (DF5, C2).

access to theoretical
ideas facilitates peers
increased
reading
competence

FINAL CASE STUDY CONSTRUCTIONS - APRIL 2002**CONSTRUCTION 6 - Anastelle Solomon**

At the time of doing the course, Anastelle worked for the National Botanical Institute (NBI) in the research division. She now works for the Department of Water Affairs and Forestry, in the Working for Water project, specifically in the area of environmental education. She was part of the 1999/2000 course, and part of the Western Cape regional tutorial group. I chose Anastelle as one of the case study participants because in her pre-course assignment she reflects a keen interest in community development environmental education programmes.

DATA SOURCES USED

1. **Anastelle's Portfolio (DF6)**
 - Background questionnaire (quest.)
 - Pre course assignment (ass0)
 - Assignment 1 - draft 1 (ass1.1)
 - Assignment 1 - draft 2 (ass1.2)
 - Assignment 2 - draft 1 (ass2.1)
 - Assignment 2 - draft 2 (ass2.2)
 - Assignment 3 - draft 1 (ass 3.1)
 - Assignment 4 - draft 1 (ass4.1)
 - Course file (cf)
2. **Interviews (DF7)**
 - First interview 14/10/99 (pers.com Ana-14/10/99)
 - Final interview 31/10/00 (pers.com Ana-31/10/00)
3. **Observation notes (DF8)**
 - Western Cape regional tutorial 17/10/99 (obs.notes 17/10/99)
 - Western Cape regional tutorial 06/11/99 (obs.notes 06/11/99)
 - Western Cape regional tutorial 28/11/99 (obs.notes 28/11/99)
 - Western Cape regional tutorial 20/01/00 (obs.notes 20/01/00)
 - National Workshop 04 - 06/02/00 (obs.notes 04 - 06/02/00)
 - Western Cape regional tutorial 17/02/00 (obs.notes 17/02/00)
 - Western Cape regional tutorial 13/04/00 (obs.notes 14/04/00)
 - National Workshop 07 - 09/07/00 (obs.notes 07 - 09/07/00)
 - Site visit 31/10/00 (obs.notes 31/10/00)
4. **Comments on constructions (DF1)**
 - Comments from Wendy (C1)

1. ACADEMIC BACKGROUND AND WORK CONTEXT

PARA 1/1 Anastelle qualified with a Bachelor of Science (B.Sc) degree in (Education), majoring in botany, zoology and education, from the University of the Western Cape UWC) (DF7, pers.com Ana-31/10/00). Immediately after qualifying, she went on to do a honours in B.Sc (Botany), then a Bachelor of Education degree also at UWC and completed these qualifications in 1996 (DF7, pers.com Ana-31/10/00). Her initial plans for a career was radiography, but she needed to see which application would be successful first and the B.Sc application came through first (DF7, pers.com Ana-31/10/00). She notes that during her studies she was not really sure what it is that she wanted to do as a career (DF7, pers.com Ana-31/10/00). After her B.Ed degree she was keen to get involved in projects that combines science education and community development (DF7, pers.com Ana-31/10/00). At the time the Masters in Science degree at the University of Cape Town was advertised and she felt that this seemed to combine the two, so she applied for it and was accepted to do it (DF7, pers.com Ana-31/10/00). She completed this degree between 1997 and 1999 (DF7, pers.com Ana-31/10/00). Anastelle feels that her interest in science education and community development '*... kind of developed through the years of study*' (DF7, pers.com Ana-31/10/00). On completion of her M.Sc., she was keen to '*... get into government to be part of decision making processes ... I wanted to have some say in decision making and not just be told to go in and do something ... working with communities towards a particular goal*' (DF7, pers.com Ana-31/10/00).

PARA 1/2 While doing her initial qualifications, she taught biology and science at a few different high schools as part of her practice teaching and then also as relieve teaching, an experience which she says she enjoyed a lot (DF7, pers.com Ana-31/10/00). She particularly enjoyed the challenge of working with young adults and trying to motivate them to work through their school career (DF7, pers.com Ana-31/10/00). She did not apply for any posts after she completed her Higher Diploma

in Education because she was never really keen to go into teaching full time (DF7, pers.com Ana-31/10/00). She was keen to get involved in planning and development in education (DF7, pers.com Ana-31/10/00).

PARA 1/3 While doing her M.Sc, she worked at the National Botanical Institute, (NBI) in the research division for three years, and the job was a kind of internship as part of the scholarship for the M.Sc degree (DF7, pers.com Ana-31/10/00). Here she worked as a researcher in stress ecology (plant research) which involved '... scientific research, community awareness raising, plant research and enviro-awareness raising ...' (DF6, quest). She worked as part of a research team, 'conducting research together with community members ... beyond her initial brief ... as my research work for my masters allowed' (DF7, pers.com Ana-31/10/00). She feels that the job provided 'the opportunity for the 'more' which I was looking for in education' and 'it exposed me to what is out there' (DF7, pers.com Ana-31/10/00). She feels that the link between education and science happened for her at NBI 'science somehow became alive and took on a life of its own ... science ... only really makes sense if you have the people and that is something that I came to realise at NBI' (DF7, pers.com Ana-31/10/00).

PARA 1/4 Anastelle notes that in the Paulshoek community within which she worked, there is a lot of 'poverty in the community, unemployment, young people dropping out, girls falling pregnant', the social problems which one sees in urban areas, but here 'people seemed unable to deal with it since it was new' to them (DF7, pers.com Ana-31/10/00). Her vision for the community is that they are able to sustain themselves and she was keen to work with young people in addressing issues of social development and also agricultural development, 'something over which they could take ownership and sustain themselves' (DF7, pers.com Ana-31/10/00). She feels that NBI could have responded to this with a practical approach of 'helping women to start their own gardens ... how to maintain livestock and keep crops going' and '...

drawing in community members to facilitate the development' (DF7, pers.com Ana-31/10/00). She feels that in the work schedule that she had '*... there wasn't space and time to explore the alternative ideas which she had*' (DF7, pers.com Ana-31/10/00).

PARA 1/5 Anastelle notes that while doing her B.Ed she did a module in ABET and when she came into the Paulshoek community it was at a time when improving literacy levels became an issue for members of the community (DF7, pers.com Ana-31/10/00). No teacher was present in the community to do the ABET classes and a young person in the community who had recently matriculated ran the programme (DF7, pers.com Ana-31/10/00). She then worked with this person to look at what can be done and generally plan the programme (DF7, pers.com Ana-31/10/00). She supported the programme in this way and also went into the classroom, seeing what was being done and supporting the adults in the class (DF7, pers.com Ana-31/10/00).

PARA 1/6 During the course Anastelle changed jobs and currently works for the Department of Water Affairs and Forestry (DWAF), in a community development initiative focussing on water conservation, which is part of the 20/20 vision project (DF7, pers.com Ana-31/10/00). Examples of the projects with which they are involved include, amongst others, working with female farmers in the Northern Province looking at income generating initiatives, water week and awareness raising, school competitions focusing on water conservation, etc (DF7, pers.com Ana-31/10/00). Her particular role is to assist in the training and development within the programme (DF7, pers.com Ana-31/10/00). She is also the co-ordinator of the National Environmental Education Project (NEEP) project in this directorate, involved in the income generating project working with female farmers in the Northern Province and developing a ground water pack for schools in the Northern Cape (DF7, pers.com Ana-31/10/00). Her job in the main is '... developing resources ... thinking through and implementing processes of resource materials development and providing

training to the provincial facilitators' (DF7, pers.com Ana-31/10/00). She is involved at the level of planning and actually developing the resource (DF7, pers.com Ana-31/10/00). The need for resources is often identified by the provincial facilitators using the resources and she tries as far as possible to get some input from the users during its development (DF7, pers.com Ana-31/10/00).

PARA 1/7 Anastelle got to know about the course when the brochure was pasted up on the notice board at NBI (DF7, pers.com Ana-31/10/00). The part in the brochure that was of significance to her was the *'... focus on understanding what environmental education is and the part of developing resources'* and she knew that this was an area within she would like to move (DF7, pers.com Ana-31/10/00). Throughout her studies she notes that she never had a bridge between education and science and *'... saw this as a place where I could clearly understand the link'* (DF7, pers.com Ana-31/10/00). From her own academic and professional experiences she could see the link, *'... but I needed something more formal, understanding and knowing the link'* (DF7, pers.com Ana-31/10/00). She notes that through the work she was doing she was constantly exposed to concepts such as *'... environment, environmental education, and so on'* and saw the course *'... as a way of formalising what I had in mind about these concepts'* (DF7, pers.com Ana-31/10/00).

PARA 1/8 Her immediate expectations of the course was *'... to build capacity and learn about ee, to equip myself for a future career, to build important networks with people, and to walk away with practical and valuable knowledge'* (DF6, quest.). She notes that in her B.Ed there was a focus on science education and in her research there was no education at all and she was looking for a middle road to bring education and research together (DF7, pers.com Ana-14/10/99). Some of the things she was looking for in the course include *'... confidence in being an environmental educator, expertise to do things, networking with other people, building up own experience in the field, get ahead and promote my career'* (DF7, pers.com Ana-14/10/99). In her

pre course assignment she notes that she wants to contribute to the improvement of the standard of living of the community and sees the course as '*... equipping myself for the task ahead*' (DF6, ass0). She notes that the course did not quite meet her expectations since she thought that the course was going to be more practical (DF7, pers.com Ana-31/10/00). When she saw the brochure for an environmental education course '*... I thought there must be something more practical to it*' (DF7, pers.com Ana-31/10/00). She notes that during the course the policies and those things were good to know and she found developing the resource a real challenge (DF7, pers.com Ana-31/10/00). While doing the course she started questioning whether the course was really what she thought it would be, because at this time it went into more theoretical type of stimulation and '*... I thought that we would learn about certain theories or an idea and you would have to go and develop the resource around this idea*' (DF7, pers.com Ana-31/10/00).

Her operation to the role of theory in relation to practice

2. PROFESSIONAL DEVELOPMENT IN THE CONTEXT OF THE GOLD FIELDS COURSE

PARA 2/1 In describing the community context, of Paulshoek, where she works Anastelle notes that there is '*... high unemployment, relatively high settlement density, overgrazing and a skewed demographic structure ... consequently a high stocking density and greater utilization of natural resources*' (DF6, ass0). She further notes that '*... environmental conditions in Paulshoek make livestock farming a relatively marginal economic strategy*' and the sale of livestock is the sole source of income for inhabitants of this community (DF6, ass0). She notes that '*... the environment supports the main livelihood practices*' (DF6, ass 1.1) and '*... obviously has an inseparable role to play in the daily lives of inhabitants*' (DF6, ass1.2) and this '*... would not be able to continue without the environment*' (DF6, ass 1.1). She notes that '*unemployment, poverty ... facilitates the decaying relationship between the environment and its users*' (DF6, ass1.1).

PARA 2/2 In exploring a community issue of concern in this community Anastelle explores the '*... unsustainable use of natural resources in communal areas*' and poses the question of '*... whether environmental education can serve as a solution?*' (DF6, ass1.1). She notes that the problem of unsustainable utilisation of natural resources is complex and '*... an analysis of the issue should take into account the historical, socio-economic, political and ecological dimensions*' (DF6, ass1.1). As a cause of the issue she describes apartheid policies as disturbing the prior nomadic management system by forceful removals and displacing people from their land, '*... large groups of people were now forced onto a small restricted farming area ... usually highly unproductive [land]*' (DF6, ass 1.1). She further recognises poverty and unemployment as factors that further encourage the unsustainable use of natural resources (DF6, ass1.1). Further causes are overstocking and the lack of an adequate infrastructure which '*... means that people will continue to rely on the veld and its resources*' (DF6, ass 1.1). Some of the impacts discussed are '*... the removal and continuous grazing of palatable species ... and poisonous and unpalatable plants have established ... the veld is less productive*' (DF6, ass 1.1). Further invisible and long term impacts are not explored in the context of the assignment, relating to the socio-economic plight of communities in the region, though this appears to be an issue of primary concern to Anastelle, as noted in discussions (DF7, pers.com.Ana-31/10/00). In commenting on the assignment, one of the tutors suggests a further exploration of the impacts of this issue (DF6, ass1.1). In the second draft of assignment 1, Anastelle discusses some ideas under the heading of '*socio-economic impacts*' though these ideas come across as causes of the issue, '*... the community is burdened by poverty and unemployment and the greatest financial contributions are gained from pensions, welfare and remittances*' (DF6, ass 1.2). In this draft of the assignment, the initial impacts, discussed in draft 1, she includes under the heading of '*... ecological conditions*', without any further exploration of these initial ideas (DF6, ass1.2).

PARA 2/3 In assignment 2, Anastelle continues to explore the causes of the issue she has identified and talks of '*... the impacts of globalisation ... poverty and unemployment, increased population growth and disintegration of indigenous resource management strategies has had an increased impact on the local environment and its resources*' (DF6, ass2.1). Anastelle's main concern in the Paulshoek community is that '*... no real effort has been placed in channeling the research information back to the community*' (DF6, ass0). She feels that environmental education processes are important in achieving this goal of the project '*... to provide the community with research information in a way which would be both acceptable and understandable*' (DF6, ass0). She notes that '*... we hope to raise awareness that the environment in which they live is precious and their heritage*' (DF6, ass0). She feels that any programme should encourage the community to take ownership of their environment and sees environmental education as a '*... tool to highlight the potential of the environment to serve as a source of economic income*' (DF6, ass0).

PARA 2/4 Anastelle describes environmental education as '*... a means of reducing socio-economic and ecological problems and an intervention to optimise sustainability*' (DF6, ass2.1, DF7, pers.com Ana-31/10/00). She further '*... motivates for environmental education as a solution because I believe that it follows a more holistic approach in informing processes and outcomes*' (DF6, ass2.2). Here she references the O'Donoghue model which '*... encourages the integration of political, social, biophysical and economic dimension and this type of approach which ecological research generally lacks*' (DF6, ass2.1). She believes that through an environmental education programme, it is '*... vital to ... ensure socio-economic improvement ... skills development, opportunities for employment and encouraging the idea of ownership*' (DF6, ass 2.2). She feels that if '*... you want to encourage people to use things more sustainably, you have to understand why they use it the way they do and the way to do this is by interacting with the community*' (DF6, ass2.2). She sees '*... development*'

Draws on theory to recognise limitations in practice

in the community' as a priority and '*... ee is a means to this end*' (DF7, pers.com Ana-31/10/00).

PARA 2/5 The environmental education programme which she envisages for the community, and is described in assignment 2, will '*... rely heavily on the local indigenous knowledge*' (DF6, ass 2.2). She describes the aim of the programme as being '*... to share research information with the community in a way which is acceptable, uncomplicated and which will contribute to improved socio-economic conditions, greater awareness of the environment and improved natural resource management strategies that would support sustainable natural resource utilisation*' (DF6, ass 2.1). Anastelle further specifies specific objectives for the programme, amongst others, '*... to identify people's perceptions and attitudes towards natural resources and natural resource management ... to feedback research information to the community ... to ensure proper feedback mechanism to the local community ... to integrate indigenous knowledge of NRM with scientific NRM knowledge*' (DF6, ass 2.1). These objectives appear to be very broad and does not suggest ways of practical implementation in the community (DF6, ass 2.1). She describes the '*... first step to developing objectives for the environmental education programme*' as being a survey which was conducted to '*... investigate people's perceptions towards natural resource management*' (DF6, ass 2.1). Though she does not further specify how this survey was used, in practice, to inform the development of the other objectives (DF6, ass 2.1). In motivating for the principles which should underlie the environmental education programme, Anastelle notes that the programme should '*... enabl[e] empowerment through skills development, development of ownership, encouraging alternative sources of income and providing whatever support we can manage*' (DF6, ass 2.2). In working towards this principle, she notes that '*... members of the community have already been employed to assist researchers in the field ... we pay for accommodation in the cultural tourist camp when doing field research ... these are small ways of encouraging communities to take control and ownership of their own lives*' (DF6, ass

2.2). She describes her visions for the environmental education programme and notes that '*... community participation in planning and execution of the environmental information will form the basis of the new approach to bridging the gaps between scientific environmental information and local knowledge and information*' (DF6, ass 3.1). She envisions some of the activities, in an environmental education programme to include fieldtrips, school projects, workshops and PRA exercises (DF6, ass0).

PARA 2/6 In exploring the development and implementation of an environmental education programme in the Paulshoek community, Anastelle feels the need to find out from the community what it is that is important to them and then look at how to address this (DF7, pers.com Ana-31/10/00). She feels there is a '*... cry for environmental awareness*' and recognises the ABET programme as an '*... opportunity to share the research information*' (DF7, pers.com Ana- 14/10/99). In assignment 3, she describes the current approaches used in sharing information with the community and notes that this has been '*... on the basis of community and committee meetings ... never ... perceived as an environmental education process ... rather an easy and quick way of sharing information*' (DF6, ass 3.1). In describing /critiquing the existing environmental education programme, Anastelle notes that the process '*... followed a show and tell approach that is grounded in tunnel vision behaviourism*' (DF6, ass3.1). She further notes that the method of research presentation '*... via flip charts and talking certainly has a top-down upliftment approach that is expert driven*' (DF6, ass3.1).

Labels to critique practice

Separating theory and practice

PARA 2/7 In discussing the science and education relation to each other, Anastelle feels that science is very theoretical, but has a lot of practical things as well (DF7, pers.com Ana-31/10/00). Education on the other hand '*... is a lot of theory, there is practical ... but based on scientific principles*' (DF7, pers.com Ana-31/10/00). She feels that this gap is where there is a need for the two to come together (DF7, pers.com Ana-31/10/00). She sees education '*... as a process to getting the core*'

information out, how do you explain to people in a way that they understand' (DF7, pers.com Ana-31/10/00). She understands environmental education as being '*... about educating people about their surroundings, their lives and about everything that they are involved in ... is all encompassing with the overall aims to support people and educate people about environment and our interaction with the environment'*' (DF7, pers.com Ana-31/10/00).

PARA 2/8 For assignment 4, Anastelle has developed a draft framework for a funding proposal to initiate an environmental education programme in the community of Paulshoek (DF6, ass 4.1). She notes that the development of the resource started out as a question '*... how scientific information can be transferred to a community where this information in its present form did not make sense ?.. how do we make it accessible and relevant to ensure more sustainable use of resources'*' (DF6, ass4.1). She notes that through her participation in the GF course, she has come to see environmental education as a '*... tool ... to use ... as a vehicle to disseminate research information ... which could improve socio-economic and ecological conditions'*' in the Paulshoek community (DF6, ass4.1). She notes that choosing a resource that supported '*... the ideology of integrated approaches'*' was very difficult '*... to change from a tunnel visioned behaviourist, top-down approach of information collection and sharing into a liberalistic, integrated-participatory approach'*' (DF6, ass4.1).

PARA 2/9 In response to the issue which Anastelle has explored in her assignment work, she has developed a '*... resource'*' described in the assignment as '*... a draft framework for a funding proposal to initiate environmental education in a communal Namaqualand community'*' (DF6, ass4.1). The aim of this draft framework is '*... that it be utilized to guide a specific research team in developing a funding proposal for environmental education in a Namaqualand community'*' (DF6, ass 4.1). The '*... funding proposal for environmental education in Paulshoek'*' consists of an introduction, which specifies the aims of the project, as stated above (DF6, ass 4.1). This is followed by

7 'braod objectives for this project', which were developed and stated in assignment 2, and these are amongst others '*... to develop environmental education resource materials and programmes ... to provide and encourage opportunities for capacity building and empowerment ... to develop specific and relevant environmental education programmes for the different target groups, etc.*' (DF6, ass 4.1). Anastelle then specifies 5 principles which guide the project, these being '*... to improve the ability of inhabitants to better manage their resources and take into account ecological, socio-economic factors; the guidelines supporting the National Desertification Programme in Southern Africa; encourage people's ability to make decisions about the use of natural resources; improve the capacity of institutions that govern land use to do so productively and sustainably; reduce poverty and the dependence of people on scarce natural resources*' (DF6, ass 4.1). This is followed by a brief '*... background to the community*' and an overview of the '*... ecological and socio-ecological research*' undertaken by NBI (DF6, ass 4.1). Anastelle then provides a '*... rationale for the project*' where she argues for '*... environmental education ... as a means of disseminating information, which could improve socio-ecological conditions*', also noting that environmental education is seen as a '*... vehicle towards addressing environmental issues and promoting the concept of sustainable development*' (DF6, ass 4.1). Anastelle then goes on to suggest two options to be followed in developing the environmental education programme, the one being a '*... more confined process*' and the other a '*... broader participation process*' (DF6, ass 4.1). For both processes she envisages a workshop with community members to establish their needs with respect to certain information (DF6, ass 4.1). This includes questions such as '*... what ... they need ... how do they want this information provided*' (DF6, ass 4.1). Once the need is ascertained, members of the research team will attempt to respond to these requests (DF6, ass 4.1). The two processes differ in that the '*... broader consultation process*' involves drawing on '*... various other expertise*' such as '*... extension officers, curriculum developers, etc. ... to assist in the process*' (DF6, ass 4.1). Anastelle then further suggests different target groups with whom they would work in the

community and outlines different processes for working with these target groups such as '*... farmers ... select groups of farmers, set up meetings, initiate workshops, choose relevant information, include relevant expertise, develop resources*' (DF6, ass4.1). For schools '*... organise meeting with teachers, initiate workshops, plan lessons to OBE, include relevant expertise, develop resources*' and for the youth '*... organise community meetings, run needs assessment workshops, initiate development workshops, develop resources*' (DF6, ass4.1). She further outlines the different information available to be used, amongst others '*... vegetation maps, veld species identifications, rain and temperature information, water conditions and water point locations, land care information*' (DF6, ass 4.1). She lastly outlines the importance of this information by noting '*... farmers could use the information to improve the status of their animals, gain knowledge and most importantly improve their socio-economic conditions ... assist teachers to promote OBE policies in their school while conscientising learners about their surroundings*' (DF6, ass4.1). Anastelle concludes this framework with '*... research is an important tool in supporting the alleviation of unemployment and poverty ... through the environmental education process youth can be taught life skills and capacity building skills*' (DF6, ass 4.1).

para 2/10 PARA 2/10 Anastelle had subsequently left the research division at NBI. Anastelle feels that recently, prior to her leaving, in the NBI work context there was more of a shift towards a '*... process- and action oriented approach to sharing research findings with the communities, involving workshops and fieldtrips*' (DF8, obs.notes 06/05/00). She feels that she has contributed to this change and cites an example of how she questioned an approach to arranging a community meeting and was then given the chance to arrange something quite different and started by calling all of her colleagues together for a meeting (DF8, obs.notes 06/05/00).

PARA 2/11 In critiquing the work which they do in the community Anastelle notes that '*... our approach would need to move away from the scientism frame of thinking*

as the only solution to environmental problems ... a more holistic approach where the people are considered just as important as the environment and not in isolation' (DF6, ass1.2). In assignment 2, she further notes that previous programmes were '*... not successful because it considered the ecological and social aspects in isolation'* (DF6, ass 2.1). '*... research has been conducted in a vacuum ... lack of transparency and integration has generally been the order of the day'* (DF6, asss 2.2). She further motivates for environmental education programmes which are '*... holistic'* in approach '*... encouraging people orientated solutions to unsustainable natural resource management'* (DF6, ass2.1).

PARA 2/12 In describing the existing environmental education programme, Anastelle notes that the research team has reported environmental information on the basis of community and committee meetings, which '*... has never been perceived as an environmental education process but ... as a quick and easy way of sharing information'* (DF6, ass 3.1). She similarly notes some of the practical difficulties '*... such as speaking the local language, voice levels and inadequate public speaking skills'* and the challenges facing community members, such as not being able to read or write, hear well or understand the concepts and information, '*... which the researchers tried hard to explain'* (DF6, ass 3.1). She feels that '*... right now we are telling people not to do certain things without understanding why they do it that way'* (DF7, pers.com Ana-31/10/00).

PARA 2/13 Throughout the course Anastelle takes on a questioning approach, in assignment work as well as in tutorial discussions. The topic to assignment 1, is phrased as a question '*... can environmental education serve as a solution to unsustainable natural resource management'* (DF6, ass 1.1). In tutorial sessions she raised the questions, eg '*... is social justice possible in a democratic value-driven system?*' (DF8, obs.notes 06/11/99) and '*... where are we in our approach to ee?*' (DF8, obs.notes 20/01/00).

PARA 2/14 Anastelle found the writing of assignment 1 an easy task and notes that she spent a lot of time thinking about the issue and talking to members of the research team about it (DF6, ass 1.2). She feels that *'... the final product ... directed my thinking ... the challenge will be implementation [of] the environmental education projects in the community'* (DF6, ass 1.2). Anastelle notes that she found assignment 2 a struggle and valued the tutorial discussions around the assignment (DF8, obs.notes 28/11/99). She further notes that she found the process of writing assignment 2 an interesting one in that she was *'... able to identify the strengths and weaknesses of the project proposal and to make recommendations'* (DF6, ass 2.1). Anastelle felt strongly about sharing assignments as a way of sharing perspectives and helping her to understand things better (DF8, obs.notes 09/03/00).

PARA 2/15 Anastelle found the combination of people on the course, generally, the most significant aspect of the course (DF7, pers.com Ana-31/10/00). She notes that she realised that *'... is an entity which basically has a life of its own ... it has people who all work together'* (DF7, pers.com Ana-31/10/00). She notes that she found the expertise with which people come most impressive *'... people with different backgrounds who are able to find common ground'* (DF7, pers.com Ana-31/10/00).

PARA 2/16 She feels that in their group (the Western Cape tutorial group) *'... there was a strong emphasis on teachers and a lot of discussion was directed at them and education in schools'* (DF7, pers.com Ana-31/10/00). She feels that for *'... someone outside of the school context I found that a bit difficult'* and so found it difficult to interact with some of the participants in the group. (DF7, pers.com Ana-31/10/00).

PARA 2/17 Anastelle felt strongly about more use of the course materials during tutorials, so that she could know more, and understand environmental education processes clearly, when talking with her colleagues at NBI (DF8, obs.notes 09/03/00). Anastelle appears to have expected to be told exactly what

environmental education is and what constitutes sound environmental education practices (DF8, obs. notes 09/03/00).

Limited interaction with course materials.

PARA 2/18 Anastelle does not appear to have worked much with her course file. Very few of the course readings are referenced and very few of the course materials appear to be worked with (DF6, cf).

might be the result of her orientation to theory + conceptual engagement with texts

PARA 2/19 In discussing the causes of the issue of unsustainable use of NR in assignment 1, Anastelle draws on the theoretical ideas in the course materials, in noting that '*... this change in socio-economic and ecological conditions of the area is also prove that the modernisation process has not skipped this rural community*' (DF6, ass 1.2). She notes that '*... the modernisation process with its modernistic ideologies of scientism and developmentalism has resulted in communities having to adapt and change their ways without the necessary infrastructural systems in place to support them in dealing with these changes*' (DF6, ass1.2). Anastelle's assignments appear to be written from a very theoretical perspective, and appears to lack the integration to the practical work context. In this light Wendy comments that '*... she is well able to use the jargon of ee and make it sound plausible and convincing ... she struggled to connect what she was saying theoretically with practical implementation*' (DF6, C1). For example she states the aims of the broad project in assignment 2 as being '*... to analyse the dynamic relationship between rangeland state and rural livelihoods and to identify ... policy options and interventions that will optimise sustainability, the welfare of the range communities while maintaining rangeland productivity and ecological diversity and integrity*' (DF6, ass 2.1). She then notes that '*... the project thus embraces the nine principles of sustainable living in the quest to understanding and improving present conditions*' without explicitly stating how these aims encompass the principles referred to here (DF6, ass 2.1). Further, in assignment 2, Anastelle notes various principles which underlie the environmental education programme in her work context, and lists these from the course materials '*... should be interdisciplinary*

in its approach, drawing on the specific content of each discipline in making possible a holistic and balanced perspective, should focus on current and potential environmental situations while taking into account the historical perspective, is not neutral but is value-based ... is an act of social transformation' (DF6, ass 2.1). She however does not describe these principles in direct relation to the aims and objectives of the programme which she envisages (DF6, ass2.1).

*Lack of
Integration*

PARA 2/20 In describing /critiquing the existing environmental education programme, Anastelle notes that the process '*... followed a show and tell approach that is grounded in tunnel vision behaviourism'* (DF6, ass3.1). She further notes that the method of research presentation '*... via flip charts and talking certainly has a top-down upliftment approach that is expert driven'* (DF6, ass3.1). She describes this behaviouristic approach as being '*... supported by positivism, ... equated to awareness/knowledge + attitude change = behaviour change'*' (DF6, ass3.1). In describing the household survey conducted in the community, Anastelle feels that this is '*... a combination of behaviourism and more liberal humanistic ideology ... allowing community members to voice their opinions and views and ideas about natural resources and resource management'* (DF6, ass 3.1). Though the questions were developed by the researchers, no suggestions came from community members with respect to important questions asked (DF6, ass3.1). She feels that a more '*... liberalistic and integration development and conservation'*, the Earth Summit (1992) referenced here, was used in the questionnaire by allowing participants to state their views and '*... to consider this information in our further preparation of a dynamic environmental education programme'* (DF6, ass 3.1). She further describes this change in thinking '*... the thinking trends which we now consider is parallel shifts from top-down (exclusive) to PRA, PLA and training for transformation ideology (inclusive)*' (DF6, ass3.1). She further feels that '*... striking a balance is a major challenge since all the different methods and approaches has their strengths and weaknesses and place in achieving objectives'*' (DF6, ass 3.1).

PARA 2/21 In motivating for an envisaged environmental education programme, Anastelle references the Rio Earth Summit of 1992 '*... as the vehicle towards addressing environmental issues and promoting the concept of sustainable development*' (DF6, ass 4.1). She further notes that the ee programme will be '*grounded in a transparent, integrative and participatory approach*' (DF6, ass 4.1). The theoretical ideas are not discussed in direct relation to practice in the assignment work and it appears to lack the integration to practice (DF6, ass 4.1).

PARA 2/22 In commenting on doing assignment 1 Anastelle feels that the assignment required a '*... description of the issue ... didn't need the complication of bringing in the 'isms'*' (DF8, obs.notes 06/11/99), referring to some of the theoretical ideas contained in the course materials. She further notes that she found it very difficult to relate practice to theory and also to articulate ideas originating in a scientific context and discussing these in the context of environmental education. (DF8, obs.notes 20/01/00).

*difficulty with practice
not consistent with
her vision for integrated
approaches*

PARA 2/23 Anastelle notes that what she has learnt through the course is that '*... no idea or process is cast in stone and that one should be flexible to include changes along the way*' (DF6, ass 4.1). Anastelle feels that the two things she learnt most from the course is discipline and thinking about things in a different way (DF7, pers.com Ana-31/10/00). '*... it is not just a matter of coming up with an idea and putting something down on paper ... it is a process you need to go through ... the challenge for me was the shift in thinking about things in a very scientific way and not looking at all the unnecessary detail ... now looking at all this detail and making sense of it*' (DF7, pers.com Ana-31/10/00). She notes that she has applied some of this new perspective in her planning for the capacity building workshops in her current job (DF7, pers.com Ana-31/10/00). She started the workshop with establishing '*... what are your aims, identifying objectives and then the processes*

which you have to go through and then the evaluation ... planning using the action learning model' (DF7, pers.com Ana-31/10/00).

APPENDIX TWELVE

ASSIGNMENTS FOR THE GENERAL COURSE

Appendix 12.1

Assignment 1

Choose one or two key environmental issues that concern you or to which your EE project or organisation is responding. Analyse the environmental issue/s in terms of:

- its nature (i.e. describe the issue),
- its effects, and
- the underlying causes of the issue/s.

Length: 3 - 4 pages handwritten or 2 - 3 pages typed

Due date: 21 October

As with all assignments, draw on your own experience and make links with the readings in the file (or elsewhere). Good readings to begin with are the *Enviro Facts* and Yeld's book *Caring for the Earth: South Africa*. Go back to the section of your file titled *Writing Assignments: Some Guidelines*. Note the stages recommended for assignment writing.

ASSESSMENT CRITERIA

Appendix 12.2

Assignment II

In assignment I we dealt with an environmental issue. In this assignment we look at environmental education as a developing response to that particular issue. Be sure to make this link in assignment II.

Briefly describe any EE project or programme of your choice (preferably your current work). Briefly describe what issue/s you are responding to in this project/programme (you can link this to assignment 1).

Outline any aims and objectives of the EE project or programme. Describe how and why these aims and objectives were developed. Describe key principles which guide the project or programme. Try to make use of some of the international principles of EE (in Theme II) and describe how they may be relevant to your project or programme. Use examples from your project or programme (where relevant).

In Theme II we described how changes in thinking over time have influenced the development of aims, objectives and principles of EE. Comment how these changes in thinking may have (or may still) influence the aims, objectives and principles of your programme or project.

Length : 3 - 4 handwritten pages or 2 - 3 typed pages.
Due date :

This assignment provides an opportunity for us to think carefully about the work that we do. If, on reflection, you find that your project does not have a clear aim, for example, mention this in your assignment. You can suggest what you think an appropriate aim might be. You might want to discuss this with your colleagues and report the discussion in your assignment. (It is worth noting that aims are often clarified over time.)

To provide some substance (or body) for this assignment, you will need to provide examples from your project. For example, when you mention a principle that guides your project, give an example of how it effects the work you do. Constantly try to make the links between your work and your reading, thinking and talking.

ASSESSMENT CRITERIA

Appendix 12.3

Assignment III

Part 1: (Written assignment) *Try to work on this part of the assignment before you start the next part, the group assignment, as your ideas from this part can be used in the group assignment.*

Briefly describe your own environmental education project or programme (see Assignment 1 or 2). Give a detailed description of the different environmental education processes and methods which you use in the project or programme. Use real-life examples to explain what you do. Explain how and why you use these particular methods and processes with reference to the following:

- changes in educational ideas (or theories)
- trends in education, development and evaluation
- trends in EE

Part 2: (Group Assignment)

Within your regional group, work as a group (or smaller groups) to make a collage of your EE projects. This should be a synthesis or pulling together of all the projects to illustrate the range of diverse EE processes which might be used by different participants in your group. Highlight key features of each example, describing the educational, development and/or evaluation ideas and trends which seem to be influencing the EE processes in the different projects.

Indicate both the strengths and weaknesses of the ideas informing the projects, and provide some ideas on how these EE processes may be changed or re-shaped to be more meaningful in context.

This assignment will be a description of EE projects (what, who, where). However, the emphasis is on the **why** and on looking back from the here-and-now to identify key features of your work which may be informed and influenced by trends and powerful ideas. These explanations will therefore deal with the assumptions which inform the work we do. In other words, these explanations emphasise the educational, development and evaluation ideas in our work. Assignment III therefore extends from Assignments I and II. It is not only a description of projects, but an informed and critical commentary on the projects presented. Use of the Core Text and selected readings may enable you to provide a more useful and insightful comments on your work (please reference these in your written assignment).

Due date/s:

Assignment IV

Appendix 12.4

Part 1:

Develop or re-develop an environmental education programme or material resource.

Part 2:

1. Describe the programme/resource (for example, what does it look like, what is the content.) Include here the aim or purpose of the programme/resource. *Content*
2. Describe the development of the programme or resource (to help you with this you should keep a journal or diary of happenings during the development of the resource - you will not be able to write about and reflect on the development process (over time) without such a record.) This journal or diary should be submitted to your tutor together with your file at the end of the course.
3. Justify, or explain why the programme/resource was developed in this way. (This should deal with the process of developing the resource or programme. This should include a description of how the resource/programme development process is reflective of educational ideas and trends in EE, and trends or concepts in curriculum, materials and programme development. The description should also reflect how evaluation is dealt with in the development process.)
4. Justify, or explain why the programme/resource has its particular form and content (this section should deal with the 'finished' resource or the 'product').
5. How will the programme or resource be used? *Content*
6. Comment on the 5 points above. In other words, in light of your experience, and learning on the course, what are your views on the programme/resource (the 'finished product') and how it was developed (the 'process'). This comment may include your views on how you would do it differently next time.

Due date :

Length : 6 - 10 handwritten pages, or 4 - 8 typed pages

Part 3: Present the programme/resource to your regional group and at the final national workshop.

Submit two copies of the resources/ programme documentation and a short summary with your presentation.

ASSESSMENT CRITERIA

ASSESSMENT CRITERIA

APPENDIX THIRTEEN

ASSIGNMENTS FOR THE INDUSTRY COURSE

Appendix 13.1

Assignment 1

Analyse and describe an environmental issue or risk to which your EE project or organisation is responding. Analyse the issue in terms of:

- its nature (i.e. describe the issue)
- its effects (or impacts)
- the underlying causes of the issue

Use available information in your work place or from other sources (eg. EIA reports).

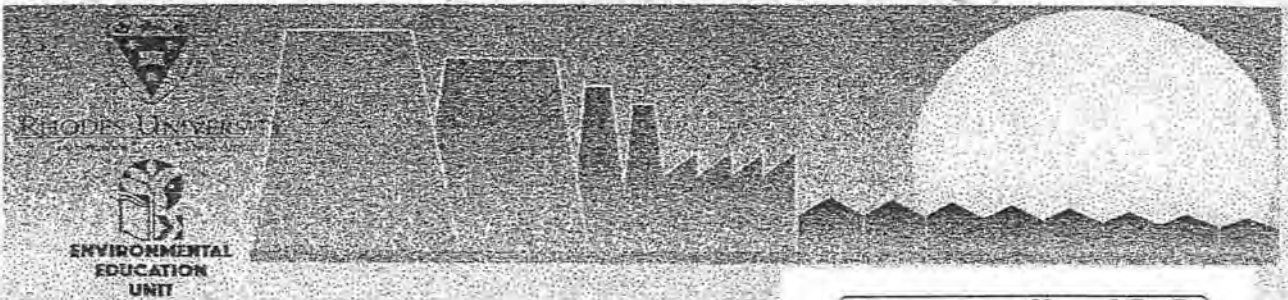
Length: 3-4 pages handwritten or 2-3 pages typed

Due Date: (for final draft) First draft is due at your first tutorial.

As with all assignments, draw on your own experience and make links with the readings in the file (or elsewhere). Go through the orientations to the readings - this should help you identify specific readings which might be useful to you. Ask your tutor if you are looking for specific information (we might be able to help you).

Go back to the section of your file titled "Writing Assignments: Some Guidelines". Note the stages recommended for assignment writing.

Assessment Criteria



Appendix 13.2

Assignment 2

PART 1:

Describe the *status quo* of environmental management processes in your company or organisation (or a company or organisation you are familiar with).

Draw on the Theme III Core Text, Case Studies and readings to highlight potential strengths and weaknesses of the environmental management processes or environmental management system you are describing.

Describe the way in which education and training is approached within the environmental management system or environmental management processes. If possible indicate how environmental management processes might influence the work you do as an environmental educator / trainer.

Reflect critically on the nature of the education and training (which you have described) by using the two sets of International Principles for Environmental Education (reading 3.30).

(4-6 pages)

PART 2:

Refer to your pre-course assignment, Assignment 1 and Assignment 2 (part 1). Decide on a particular course or programme you may wish to develop or re-develop for use in your work place. Briefly note how this course or programme might be responding to issues or risks of relevance to the work you do, and how this course or programme might be shaped by environmental management processes or systems.

(1-2 pages)

Due Date:

As with all assignments, draw on your own experience and make links with the readings in the file or elsewhere.

Appendix 13.3

Assignment 3

How

Part 1:

Develop or re-develop an environmental education and training course, programme or resource for use in your workplace. The course, programme or resource should be developed in an Outcomes-Based format. Where possible and appropriate you should indicate:

- The intended qualification or possible unit standard framework for the course, programme or resource.
 - The competencies that the course, programme or resource intends to develop (practical, foundational and / or reflexive).
 - The specific outcomes and assessment criteria that you will have in mind when working with the course, programme or resource.
- a) Describe how the course, programme or resource will be responding to issue/s or risk/s of relevance to your workplace (Describe the issue/s or risk/s briefly) (see Assignment 1).
- b) Describe how the course, programme or resource relates to / forms part of environmental management processes in your organisation or the organisation you are working with (see Assignment 2).
- c) Explain your choice of environmental education methods in the course, programme or resource by drawing on the Theme 4 Core Text and readings. Indicate what your choice of methods reflect about your understanding of learning. Comment on this in the light of trends towards competence development within the NQF.
- d) Describe HOW and WHY you developed the course, programme and resource in a particular way (for example: Did you involve others, did you choose a specific format for a specific reason, does your course form part of a broader programme etc.)

Length: 4-5 pages of written work (typed)
The course, programme or resource (to be handed in)

Due Date:

Part 2:

Present your course, programme or resource at the final workshop on 24/25 June 1999 for peer assessment and review. Draw on the written assignment (points a-d above) to guide your presentation at the final workshop.

Assessment Criteria	Range Statements

APPENDIX FOURTEEN

EXAMPLE OF THE CORE TEXTS FROM THE GENERAL COURSE

THEME II

Core Text

Environmental Education: An Emerging Response within the Environmental Crisis

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ENVIRONMENTAL EDUCATION: AN EMERGING RESPONSE WITHIN THE ENVIRONMENTAL CRISIS

Introduction

In Theme I we studied the idea of 'environment' and the nature of the environmental crisis. We suggested that the dominant global world view, which we named as modernism, contributes to the environmental crisis. We noted how, over time, and all over the world, there have been a number of recommended responses to the crisis (Table 1.2 Landmark Events). And we introduced some of the more recent responses to the environmental crisis in South Africa. Environmental education (EE) is a key response recommended by almost all of these national and international landmark events, policies and documents.

The ideas covered in Theme I are the departure point for Theme II - just as one level of step in a staircase is built on the step beneath it. Some of the ideas which we introduced in Theme I will be carried forward into Theme II. For example, the understanding of how the environmental crisis was shaped over time, and how the environmental crisis came to be understood by people over time was a key idea in Theme I. In Theme II we take this idea further, and try to understand how people's ideas about environmental education were shaped over time, and how they came to change and be seen in different ways. We try to illustrate the changing nature of environmental education by using the word 'emerging' in the title of this Theme.

The word 'emerging' indicates ongoing change.

In Theme II the focus is on environmental education, and on the different ways in which education has responded to the environmental crisis. Internationally there has been a growing emphasis on environmental education, and many guidelines have been produced on how people should understand it (see Table 1.2). In this theme we will investigate how some of these key guidelines were shaped by the ideas of the time and the institutions in which they were developed.

We need to take note of these guidelines. One reason is that they are often quoted in the mission statements or policy documents of organisations or governments. Furthermore, we need to consider international ideas on environmental education, because they may help us to understand our own work better by reflecting on these ideas and how they relate to our own practice.

In Theme II we look at:

- some international definitions of EE and the idea of defining a social process such as EE;
- some ideas on the aims of EE;
- ideas on the objectives of EE; and,
- proposed principles for EE.

By studying these ideas we see that there are different approaches (or orientations) to environmental education. We are able to see how these ideas are influenced by the people who developed them, the time during which they were developed and by their institutional location. You may also be able to see that the idea of doing environmental education according to set definitions, aims or goals, and objectives, has within it aspects of modernistic thinking.

Defining Environmental Education

Here we make at least two points. Firstly, there are different definitions which reflect different orientations of EE. They also reflect institutional perspectives on EE. Secondly, a once-and-for-all definition of EE is difficult to describe, and may perhaps not be that useful at all.

To many people, EE is a new idea. They ask "What is EE?". Usually they want a universal definition. People often think that if something can be defined, then it is easy to understand and easy to implement. This view can be very simplistic as it is not always appropriate to reduce EE to a 'fixed thing' to be implemented.

*Has anyone asked you
"What is EE?"*

Activity 2.1

How would you answer if someone asked you "What is EE?"

Working with others to develop a deeper understanding of the environment, assess its effects, and our role in that process, and the skills to respond to them.

*Defining
the role*

In Theme I we discussed the interconnected nature of the environment and environmental issues. Because of the broad nature of 'environment' and the inter-connected nature of environmental issues, environmental educators often find it difficult to draw a line between what counts as EE and what does not count as EE. This difficulty will always be with us, because of the complex nature of the crisis to which we are responding. Activity 1.4 was a group discussion exploring ways of dealing with this difficulty.

Looking back, we can see how many authors and organisations have struggled to define environmental education. As the environmental crisis became more widely noticed, international organisations tried to take the lead in defining environmental education. Their aim was to develop international frameworks to guide people's practice in environmental education. Possibly the most well known of the attempts to define environmental education internationally is the IUCN definition which was developed in 1971.

*Refer to Table 1.2 to
identify the key
international events
which took place in the
early 1970's, at the time
when the IUCN
definition was developed.*

Through the institutionalisation of environmental education, ideas about environmental education started to become 'official' through the defining of definitions and principles. These attempts were meant to assist people to clarify their ideas about environmental education. As we can see from the three definitions below, the defining of environmental education has historically helped people to clarify ideas and understandings, only to be challenged and changed as new understandings develop.

The IUCN, in 1971, defined environmental education as:

The process of recognising values and clarifying concepts in order to develop skills and attitudes necessary to understand and appreciate the interrelatedness among man [sic], his culture and his biophysical surroundings. Environmental education also entails practice in decision making and self-formulation of a code of behaviour about issues concerning environmental quality.

See Core Text I to reflect on the changes in people's thinking about 'environment'.

The IUCN is a global scientific institution which aims to offer internationally relevant, all encapsulating and clearly delineated solutions to the environmental crisis. The language used in this definition and other IUCN documents at the time, reflect rational, linear, developmental ways of thinking about environmental education. At the time this definition was described, environments and environmental problems were mainly associated with biophysical problems.

At about the same time, in 1975, Martin started to grapple with some of the changing understandings of environment. His definition argues that:

... environmental education does not ultimately have validity unless it also involves education to change the human environment for the better by understanding on the one hand the political processes by which this can be done as 'participating citizens'; and on the other hand, as noted by conservationists and other environmentalists, by acquiring an environmental ethic and a knowledge of the ecological basis of life, on which value judgements about the environment can be based.

Martin started to challenge the IUCN perspectives, which were very conservation-based. He started to recognise the complexity of environmental issues, and the social nature of the environmental crisis. In his definition, we see an emphasis on the political dimension of environmental education, and on ethics and values, which reflects the influences of the values education movement (Caduto 1983) in education at the time. His definition recognises some of the complexities and problems in the assumptions the IUCN made about changing knowledge, attitudes and values.

Read the Environments and Methods booklet to see how different understandings of environment have shaped different ideas of environmental education. See Theme III for a discussion on the influence of values education in EE.

In attempting to choose one definition which would be applicable for all environmental education practices, the IUCN definition became abstracted and was not necessarily useful to a wide range of diverse environmental education processes, arising in many different situations of risk.

In 1991, Huckle attempted to re-shape the definition of environmental education to be more reality-based (rather than abstracted) with a strong emphasis on socially critical educational processes:

Education for the environment should be a shared speculation with pupils on those forms of technology and social organisation which can enable people to live in harmony with one another and with the natural world.

We can see a strong emphasis in his definition on the way in which education should take place, as a "...shared speculation with pupils", and on the social context in which environmental education takes place. This reflects Huckle's role as an educator (compared to the IUCN definition, developed by scientists). His definition was influenced by critical social theory which aims to address power imbalances in social and educational situations.

These are just three of many definitions. We have chosen them because they show, among other things, that there are different and developing ways of understanding and approaching EE.

*Read **Environments and Methods** and **Core Text III** to see how environmental education processes were influenced by changes in educational thinking.*

Critical social theory is based on the idea that we need to take a critical look at social structures and systems (see Theme III).

*Read the 1998 EECI **Enabling Document** to see how environmental education has been described.*

Activity 2.2

Look at the above definitions. Consider the view that each of these definitions have on:

- interactions between people and their environments,
- the importance of knowledge and understanding,
- the problems underlying the environmental crisis,
- the recommended responses to the problem, and
- the agents responsible for putting these recommendations into practice i.e. who should respond.

If one looks carefully at the language of the above definitions, it seems that the IUCN definition viewed the problem as a lack of knowledge, poor decision making skills and an inappropriate 'code' of behaviour among individuals. The proposed solution was to recognise the 'right' values, to practice decision making and to change behaviour through (informal) rules i.e. follow the right code.

A code means a collection of laws

Although this is not clear from the definition (see also the World Conservation Strategy developed with the help of the IUCN), the IUCN seems to see the agents who need to develop and implement solutions, as individuals ('man' as individual). As a scientific body, it also emphasised the role of scientists developing solutions which others should then implement.

Looking at Martin's definition, it seems that he also thought that we need to develop a better understanding of the environment on which to base our value judgements. Martin went further, however, by emphasising that the environment should be changed by citizens who need to understand political processes. This definition thus recognises the role of politics in environmental problems and responses, which the IUCN definition did not mention. Martin saw solutions being developed by both participating citizens and experts.

Politics relates to policy, power and policing.

In Huckle's definition there is an even greater emphasis on the role of social structures in environmental problems and responses, and no mention of individual behaviour or values. Huckle believes that social systems and technology are the main areas to consider in responding to the environmental crisis. Furthermore, he thinks that teachers and learners should work together in responding to the environmental crisis.

See the reading in Theme III from 'Reaching Out' by Huckle (1995).

Activity 2.3

Above we asked you for your definition of EE. Did you find that task easy? How did your definition differ from the three in the box? Discuss your definition with others in a small group. How do you differ from one another? Do you think that your own definition would always be appropriate? Do you think that any one definition would always be appropriate?

In our experience, we have found that we can describe EE in a particular situation or context, especially if we do so together with those involved in the same situation. However, we think that no one definition would always be appropriate for all contexts. Also, in practice, people seldom do EE according to definitions. However, we can better understand our EE practice by looking at where different definitions have come from and how they have been shaped. What is important to note is that definitions seem to be useful to clarify our thinking and our EE practices, but this thinking can be challenged on an ongoing basis.

Consider the difference between defining and describing.

Aims, Objectives and Principles

In the following sections we will be talking about aims, goals, objectives, principles and values. To understand what is meant by these, consider the analogy of a soccer or hockey game. The **aim** or **goal** (we use these terms to mean the same thing) of the game is to score a goal. The **objectives** can be seen as smaller aims - they are the steps one has to take to reach the goal. A team may decide on the following objectives: to get the ball from the centre-forward to the wing and back to the centre-forward before trying to shoot a goal - their ultimate aim.

A sports game has certain **principles** which guide the game. For example, it is a principle to be courteous to the other team and not to argue with the referee. The players of the game also hold certain **values** - they treasure the physical exercise, the competition and the sportsmanship. These values are their reasons for doing it.

Aims in Environmental Education

Activity 2.4

Individually, and then in small groups, discuss "What do you think is the aim or aims in EE?"

As with the defining of environmental education, a number of international organisations have tried to define a set of aims for environmental education. The *World Conservation Strategy* (IUCN, UNEP, WWF 1980) stated that "the behavior of entire societies towards the biosphere must be transformed". Internationally, the aim in EE has often been stated in terms of behaviour change towards what Hungerford and Volk (1990) have described as "environmentally responsible behaviour". UNESCO (UNESCO-UNEP 1993) sees "environmentally responsible citizens" as the aim in EE. The Grand Plan of behaviour change towards the Big Idea of environmentally responsible behaviour sounds good.

However, who has the ability and the right to determine what such behaviour involves? Who would you trust to decide what environmentally responsible behaviour means? Government advisors? Scientists? Economists? Anti-poaching or anti-pollution units? The Wildlife and Environment Society? The Church? Do any of these groups have the full and complete picture from which to prescribe how others should behave?

Does your organisation have a set of aims for environmental education?

*Read page 23 & 24 of the 1993 EEPI booklet (O'Donoghue) called **The environment, development and environmental education** to see how aims in environmental education in South Africa have changed.*

Activity 2.5

Work as a small group. Imagine the government has asked you to make a recommendation for a new White Paper to guide environmental education. Your task is to reach consensus in your small group and spell out "environmentally responsible behaviour" in one paragraph. The government wants your description to be widely applicable.

Now compare your paragraph with those of other smaller groups. Find a few paragraphs that differ from yours. Do you think the other groups would be happy to behave according to your description? If not, how would you overcome the problem?

A White Paper is a guide for the formulation of governmental policy.

We may see responding to the environmental crisis as building a house against a storm. One needs many hands, and the people who are to live in that house have a very important say about what they would need. In addition, they will need the advice from different kinds of experts. The house would also have to be built according to the terrain and the prevailing weather.

It may be that environmentally responsible behaviour can only be defined in specific contexts. If you are uncertain of the aim in EE, work it out in the situation in which you are working (environmental issue/s or risks), with the people you are working with (affected by the issue/s or risks).

The metaphor below will give you some idea of how you could think about aims in your own environmental education practice.

A metaphor for EE

Imagine you and your co-workers are crossing a river on a narrow bridge made of ropes. You can hardly see the other side, as the river is wide and a storm is brewing. A strong wind blows. The bridge is swaying in the wind and also with every movement your group makes. You clearly know where you are going - to the other side. Yet because of the swaying of the bridge, you are uncertain of every step of the way. You have to constantly adapt to the swaying of the bridge. This does not take you off course. It does not make you stop moving. With your eye on the dim other side, your aim, you keep moving.

This story is a metaphor (i.e. a "word-picture") for doing EE. The aim in EE is to reach the other side of the river. What would the side we are moving away from be? What is the storm? And the bridge? Environmental educators know what they want (sustainable living in a healthy environment) although they cannot always see it clearly. Because of the complex and ever-changing nature of our situations (and we contribute to those changes) we are often unsure, from moment to moment, of the steps to take. Yet within those situations, we can decide, with others, how best to act in response to the environmental problems or risks we recognise.

A metaphor is an imaginative way of describing something by referring to something else which has the qualities that you are trying to explore. We can use metaphor to see where we are and what we are doing, and open up new ways of gaining better perspectives. We can use metaphor as a 'tool' to describe and understand better what we are doing.

We often learn through grappling with, and describing the uncertainties that worry us in our work.

Objectives in Environmental Education

In an effort to give environmental educators some certainty about what they should be doing, UNESCO has drawn up objectives - steps towards 'environmentally responsible behaviour' - for EE:

UNESCO's categories of environmental education objectives are:

- **Awareness**
to help social groups and individuals acquire an awareness and sensitivity to the total environment and its allied problems.
- **Knowledge:**
to help social groups and individuals gain a variety of experiences in, and acquire a basic understanding of, the environment and its associated problems.
- **Attitudes:**
to help social groups and individuals acquire a set of values and feelings of concern for the environment and the motivation for actively participating in environmental improvement and protection.
- **Skills:**
to help social groups and individuals acquire the skills for identifying and solving environmental problems.
- **Participation:**
to provide social groups and individuals with an opportunity to be actively involved at all levels in working toward resolution of environmental problems.

UNESCO - UNEP 1978

These objectives are widely quoted, internationally and also in South Africa. UNESCO's (and other international organisations') attempts to define environmental education, and define aims and objectives for environmental education have been widely criticised for their assumptions of rationalistic, deterministic, objectives-based view of change. They have also been criticised for having instrumentalist roots which reflect environmentalism of the rational scientific variety. More recent views recognise that environmental problems are a complex mix of socio-historical trends and events. This understanding has given rise to the idea that human society undergoes continuous reconstruction and that environmental education involves diverse processes of problem solving and change. A set of pre-defined objectives are therefore not likely to be applicable or useful in these diverse settings, and may not even be useful in a particular setting.

Consult Table 1.2 to find out what key landmark events took place at the time that these objectives were written (1978). Refer also to the discussion in this Theme II on definitions.

See Theme I for an explanation of these modernist ideas. Remember that in Theme I we made the point that features of modernism such as determinism, rationalism, scientism may contribute to the environmental crisis.

Activity 2.6

Give an example of an activity or methods which develops:

- only awareness (no knowledge, attitudes, skills or participation)
- only knowledge (no awareness, attitudes, skills or participation)
- only attitudes (no knowledge, skills or participation)
- only participation

Study the UNESCO objectives and discuss the following question in small groups:

- Do you think it is useful to make a distinction between these objectives? Why/why not?

What would you consider to be appropriate objectives for your work?
Discuss your ideas with members of a small group.

We think that the UNESCO objectives are useful to help us think of the range of activities involved in EE. However, it seems that every learning situation or teaching activity would more-or-less address all of these objectives, and that the distinction between them is more artificial than real. The distinctions between awareness, knowledge, skills etc. may have been drawn to make it easier for people who wanted to measure the effectiveness of their programmes. They do not really reflect our experience of how we come to develop better ways of responding to environmental issues.

I disagree - much EE focuses on the first three. These objectives are a useful reminder of the importance of skills and participation.

But I still don't see why skills and participation are important?

**Principles in Environmental Education**

In this section we explore sets of internationally produced principles in EE, and what they mean. Look out for two things: firstly, the principles are quite similar, but also different in some ways. Like the definitions above, the principles originated in different institutional settings at different times. These differences can therefore be related to the times and contexts within which people wrote them. Secondly, look for what you may learn about your own work by exploring the meaning of these principles.

Think about the discussion on definitions above when you review the two sets of principles.

The first set of principles to be covered here is the Tbilisi Principles. They were adopted at the Tbilisi Inter-Governmental Conference held in Tbilisi, Russia in 1977 (see Table 1.2). The second set of principles is less well-known. These principles were developed in 1992 by the International NGO Forum at the meeting of NGO's which ran parallel to the government meetings at the United Nations Conference on Environment and Development (UNCED) in Rio (see Table 1.2).

TABLE 2.1 TBILISI PRINCIPLES

Guiding principles for effective environmental education adopted at the Tbilisi Inter-Governmental Conference on EE held in Tbilisi, Russia in 1977.

Environmental Education should:

1. consider the environment in its totality - natural and built, technological and social (economic, political, cultural - historical, moral, aesthetic);
2. be a continuous lifelong process, beginning at the pre-school level and continuing through all formal and non-formal stages;
3. be interdisciplinary in its approach, drawing on the specific content of each discipline in making possible a holistic and balanced perspective;
4. examine major environmental issues from local, national, regional and international points of view so that students receive insights into environmental conditions in other geographical areas;
5. focus on current and potential environmental situations while taking into account the historical perspective;
6. promote the value and necessity of local, national and international cooperation in the prevention and solution of environmental problems;
7. explicitly consider environmental aspects in plans for development and growth;
8. enable learners to have a role in planning their learning experiences and provide an opportunity for making decisions and accepting their consequences;
9. relate environmental sensitivity, knowledge, problem-solving skills and values clarification to every age, but with special emphasis on environmental sensitivity to the learner's own community in early years;
10. help learners discover the symptoms and real causes of environmental problems;
11. emphasise the complexity of environmental problems and thus the need to develop critical thinking and problem-solving skills;
12. utilise diverse learning environments and a broad array of educational approaches to teaching/learning about and from the environment with due stress on practical activities and first-hand experience.

UNESCO-UNEP 1978

TABLE 2.2: SOME PRINCIPLES OF EE FOR EQUITABLE AND SUSTAINABLE SOCIETIES

1. Education is the right of all; we are all learners and educators.
2. Environmental education, whether formal, non-formal or informal, should be grounded in critical and innovative thinking in any place or time, promoting the transformation and construction of society.
3. Environmental education is both individual and collective. It aims to develop local and global citizenship with respect for self-determination and the sovereignty of nations.
4. Environmental education is not neutral but is value-based. It is an act for social transformation.
5. Environmental education must involve a holistic approach and thus an inter-disciplinary focus in the relation between human beings, nature and the universe.
6. Environmental education must stimulate solidarity, equality, and respect for human rights involving democratic strategies and an open climate of cultural interchange.
7. Environmental education should treat critical global issues, their causes and inter-relationship in a systemic approach and within their social and historical contexts. Fundamental issues in relation to development and the environment, such as population, health, peace, human rights, democracy, hunger, degradation of flora and fauna, should be perceived in this manner.
8. Environmental education must facilitate equal partnerships in the processes of decision-making at all levels and stages.
9. Environmental education must recover, recognise, respect, reflect and utilise indigenous history and local cultures, as well as promote cultural, linguistic and ecological diversity. This implies acknowledging the historical perspective of native peoples as a way to change ethnocentric approaches, as well as the encouragement of bilingual education.
10. Environmental education should empower all peoples and promote opportunities for grassroots democratic change and participation. This means that communities must regain control of their own destinies.
11. Environmental education values all different forms of knowledge. Knowledge is diverse, cumulative and socially produced and should not be patented or monopolized.
12. Environmental education must be designed to enable people to manage conflicts in just and humane ways.
13. Environmental education must stimulate dialogue and cooperation among individuals and institutions in order to create new lifestyles which are based on meeting everyone's basic needs regardless of ethnic, gender, age, religious, class, physical or mental differences.
14. Environmental education requires a democratisation of the mass media and its commitment to the interests of all sectors of society. Communication is an inalienable right and the mass media must be transformed into one of the main channels of education, not only by disseminating information on an egalitarian basis, but also through the exchange of means, values and experiences.
15. Environmental education must integrate knowledge, skills, values, attitudes and actions. It should convert every opportunity into an educational experience for sustainable societies.
16. Education must help develop an ethical awareness of all forms of life with which humans share this planet, respect all life cycles and impose limits on humans' exploitation of other forms of life.

*International Council for Adult Education, at UNCED, Rio de Janeiro
(1992)*

Activity 2.7

Work in small groups. Every participant should have a copy of the Tbilisi Principles for EE (table 2.1) and the Principles of EE for Equitable and Sustainable Societies (table 2.2). Start with one or other set of principles. Each participant should read through one principle. Each participant (or anyone else) offers an explanation of the principle. When discussing the principles consider these questions: *What does it mean?*

What is the relevance of the principle for our work in environmental education?

Move on to the next principle until you have worked through all the principles in one set. Then proceed to do the same for the other set.

What do you notice about the two sets of principles?

This activity will assist you to prepare for assignment 2 where you are expected to explain how these principles may be of relevance to your work.

Do you or your organisation work with a set of principles which guide your EE practice? Do you find them useful? Reflect on this question when you are working on assignment 2.

Just as there are differences between the IUCN definition and Huckle's definition on EE (see page 5&6), there are some differences between these two sets of principles. How do you think the development of the Tbilisi principles were influenced by the fact that they were developed at an inter-governmental gathering in the 1970's? Are you able to identify what kinds of changes in thinking in environmental education influenced the second set of principles?

The Tbilisi Principles for EE are still widely used today. Do you know of any formal documents which quote or refer to the Tbilisi principles? They are popular, possibly because they reflect a broad and very neutral stance on environmental issues. Few people will find fault with them.

The UNCED NGO Principles on EE for Equitable and Sustainable Societies take a more critical view of current socio-ecological conditions. You will notice that they see EE as "not neutral, but value-based" and "an act for social transformation". They also emphasise the need for equity and human rights. Like Huckle's definition of EE, they are 'socially critical', more specific about certain issues and less conservative - they introduce the idea of a 'new social order' and emphasise the role of EE in **social transformation** (that is deep, radical change) more explicitly.

Fien (1993) argues that we need to acknowledge values much more strongly. He described a set of "core values" from *Caring for the Earth* (1991), which reflect the historical shift towards recognising the role of human rights and democracy in matters of the environment. Fien (1993:64) calls these Core Democratic Values for a Sustainable Society. Here social justice and ecological sustainability are seen as two sides of the same coin.

The Department of Environmental Affairs and Tourism are currently working on a discussion document towards a White Paper on Environmental Education. Would you select principles from these international guidelines? Which principles would you favour and why? Which ones would you leave out?

Compare this with the pictures of 'environment' and 'environmental crisis' we explored in Theme 1.

Does your EE work support an orientation to EE which sees social transformation as important?

TABLE 2.3 CORE DEMOCRATIC VALUES FOR A SUSTAINABLE SOCIETY

**People and People:
Social Justice**

- * Human Rights
- * Basic human needs
- * Participation
- * Inter-generational equity

**People and Nature:
Ecological Sustainability**

- * Interdependence
- * Biodiversity
- * Living lightly on the Earth
- * Inter-species equity

Discuss these values. Do you think they are of relevance to the work you do? Does your work reflect any of these values? Can you describe how? Reflect on this question for assignment 2.

Historical developments in our thinking about EE

Irwin (1990) wrote a useful paper on historical developments within our understanding of EE. His paper includes a discussion on how the IUCN definition has been useful to clarify EE in South Africa. He also argued that some of the shifts in thinking on solutions to the environmental crisis, including EE, have come about through the broadening of the debate in EE into Africa and India. A more recent paper by Janse van Rensburg (1998) describes how some of these international shifts in thinking about EE have influenced the development of diverse environmental education processes in South Africa. She argues that ongoing clarification and engagement with ideas about our practices may enable us to develop new ways of doing environmental education that will take us beyond of our current understanding. These two papers clearly illustrate how international thinking in environmental education may be useful to our practice, but also that our practice may also contribute new ideas to international thinking in environmental education.

Some of the more recent research work which is being developed in South Africa around indigenous knowledge systems provides us with a good example of how knowledge arising in and from dialogue where past and present are intermeshed, brings about understandings which help to re-orient the nature of environmental education processes.

Some would say that a broader and perhaps more productive understanding of EE has come about through the interactions between the understandings of environmental activists, scientists, developers and educators. From the insights in the above mentioned articles, we can see that there appears to be a shift towards including the understandings of ordinary people in an inclusive process of co-constructing responses to environmental problems. In Theme III we will explore different EE methods and processes, and how they reflect this trend of broadening the knowledge base and re-orientation in EE processes in an ongoing way.

Read the EEPI (1993) booklet by O'Donoghue for an exploration of trends and key ideas in EE.

Read the papers by Irwin (1990) and Janse van Rensburg (1998).

Read the extract from the Draft discussion Document towards a White Paper on EE to see how current international trends may influence environmental education.

Read the papers by Ekins and Masuku van Damme on 'Knowledge' and 'Indigenous Knowledge within EE processes' for a broader perspective on new conceptions of knowledge and how these help to re-orient EE processes.

Summary of Theme II

In this theme we introduced you to some of the orienting ideas in EE which were, and are being, developed internationally in response to the environmental crisis. We shared ideas on defining EE and the difficulties that people experience in accepting one final definition in EE. We also shared our understanding of the historical and institutional influences which have shaped some of the definitions which are widely used and we pointed out some of the limitations of accepting any one definition as the 'right' one.

Thereafter, we introduced you to the idea of having aims in environmental education. We introduced you to some of the internationally defined aims for environmental education, and once again, raised some of the difficulties of merely adopting a set of aims out of context. We looked at some of the internationally developed objectives for EE and raised questions about seeing these objectives in isolation. We also encouraged you to consider these aims and objectives in the light of your own work, with the aim of assisting you to consider the relevance of aims and objectives in your work.

We introduced you to two well-known sets of principles which have been internationally adopted in environmental education. We asked you to consider the relevance of these principles for your own work. We also briefly looked at one of the many sets of values which may underpin EE processes.

Through this overview of some of the international developments in thinking about environmental education, we tried to illustrate the changing nature of thinking about environmental education. We tried to indicate that definitions, aims, objectives and principles are useful to clarify environmental education processes at certain times, but they invariably are challenged as people develop new understandings about environmental education. We finally introduced you to some of the developments in environmental education in South Africa, showing how these developments have drawn on the international ideas in environmental education, but are also contributing new ideas about environmental education processes. We drew your attention to one of the more significant contributions which South Africa is making to the clarification of environmental education processes internationally - the exploration of the role of indigenous knowledge systems in environmental education.

Assignment 2 will help you to grapple further with the ideas introduced here, within the contexts of the EE that you are doing or intending to do.

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Theme 1

Orientation to the Readings

Note:

These readings have been reproduced for education and research purposes and may not be used in any other way

APPENDIX FIFTEEN

EXAMPLE OF ORIENTATION TO READINGS FROM THE INDUSTRY COURSE

Orientation to the readings:

Theme 1

NOTE: THESE READINGS HAVE BEEN REPRODUCED FOR EDUCATION AND RESEARCH PURPOSES AND MAY NOT BE USED IN ANY OTHER WAY

The readings have been selected to provide additional information to the Core Text. The orientations below are summaries which ought to guide your reading on the course.

Comments / Notes on the readings

Reading 1.1

NGO Forum. 1997. *Information Booklet on the National Qualifications Framework (NQF)*.

This is a useful booklet to use if you still need to come to grips with the different structures and terminology of the NQF. It introduces all the NQF structures in an easy-to-read manner. It also explains the different functions of the different NQF structures and raises some issues relating to the NQF from the perspective of non-governmental organisations. This is compulsory reading if you are not yet familiar with the NQF.

Reading 1.2

Outcomes-based education and training (picture story).

From: *Understanding the National Qualifications Framework: A Guide to Lifelong Learning* 1996. EIC / IEB / Heinemann.)

This little 'picture story' explains what specific outcomes and critical cross field outcomes (essential outcomes) are and how they are used in learning programmes.

Reading 1.3

Finalisation of Policy and Implementation of the Strategy.

From: Department of Labour. March 1997. *Green Paper: Skills Development Strategy for Economic and Employment Growth in South Africa*. Pretoria.

This reading provides an insight into the intended results of the National Skills Development Strategy and provides insight into the process which is to be followed in implementing this strategy. With the imminent passing of the National Skills Bill, this process is about to be implemented. This provides some insight into the current shifts in the training sector.

Reading 1.4.

Newspaper Article:

Richardson, E. 1998. SA Business can't ignore environment much longer. *Weekend Post (Business Supplement)*. October 3, 1998.

This newspaper article provides an up-to-date perspective on the pressures which industry faces from a combination of new laws, greater public awareness and market forces. It also makes the point that good environmental practice in business makes good economic sense.

Reading 1.5**Newspaper article:**

Smith, T. 1998. Some companies have picked up the slack ahead of compulsory training. *Reconstruct. Sunday Independent Supplement. September 6, 1998, p 5.*

This newspaper article provides some insight into some of the ways in which industry and business are responding to the changes in the training environment.

Reading 1.6

Wals, A., van der Leij, T. 1997. Alternatives to National Standards for Environmental Education: Process-Based Quality Assessment. *Canadian Journal of Environmental Education, Spring 1997.*

This paper presents a critique of an outcomes-based, national standards driven orientation to environmental education. It makes the point that OBE models of change are deterministic and may narrow learning opportunities and may not enable responsive environmental learning. It argues for a process-orientation to establishing 'standards' in environmental education, and emphasises the need to focus on the quality of the learning process.

APPENDIX SIXTEEN

EXAMPLE OF TUTORS' ASSESSMENT COMMENTS

DRAFT 1 – ASSIGNMENT 3

CATHY COOK

**RHODES UNIVERSITY CERTIFICATE/GOLDFIELDS
PARTICIPATORY COURSE IN EE**

9/3/2000

EE METHODS AND PROCESSES IN MY WORK**MY EDUCATION AND WORKING EXPERIENCE: INFLUENCES**

You haven't referred to this in the discussion of your programme. Has this background shaped your choices in anyway? If so, how & why?

I went to a private girls school, which although was a Christian National Education school, teachers had more freedom to deviate from the curriculum and to experiment. I qualified as a Geography teacher after school and went on to teach. My first school was a liberal co-ed school and I was lucky to work with some very innovative colleagues. I was given freedom to develop resources and I was supported. I never suffered from "action paralysis". This was an exciting time of experimentation and adventure. I then went overseas to England where I taught, but I was seen as an outsider and I had to look in, while the experts carried on doing things the way they had always done them. This was an interesting time and I learnt a lot. I returned to SA and taught at a boys school for a short time. Here my opinions were not respected and being a woman meant that what I had to say, in this instance did not count. Noise in the classroom of any sort was seen to be undermining discipline and fieldtrips were a bind to organise and thought to be a waste of precious academic time. Then I moved on to my present school, where I am Head of Geography and I enjoy freedom to develop new ideas. Now I have no one else to blame for what is being taught or how it is being taught, I have to come up with the programme. My own education and the schools in which I have taught have definitely influenced the way I teach today. My earliest teaching years were some of the happiest times where I was a participant and not a spectator. It is important for me to remember this.

MATRIC GEOGRAPHY FIELDTRIP 1999 - WHAT, HOW AND WHY

The programme that I will be discussing will be a Matric Geography fieldtrip from 1999. Fieldtrips have to fit into the curriculum and should not exceed one school day, according to departmental regulations. They should not just be fun days out of the classroom, but rather broaden and maximise the learning experience in the field and make the theoretical knowledge alive and practical. This Matric fieldtrip tries to raise environmental awareness of the local environment and environmental issues. This fits into the Ecology section of the syllabus. Conservation is a key component,

however the textbook is outdated and deals with the issue in a gloomy way. Species extinction and pollution are there, but only the problem and there is no progression to solutions and success stories. This negative view is "overwhelming, creating a sense of action paralysis". (O'Donoghue, Janse van Rensburg) and does not lead to a change in attitude or lifestyle of the learner. My fieldtrip is a response to this and tries to show matriculants two successful conservation projects, the Cheetah Outreach programme and the Boulders Penguin reserve at Simonstown.

We started the day with a lecture and slides on the cheetah programme. A lecture tries to tell the audience everything they think you may wish to know and for that reason there are seldom any questions asked. The learners were passive receivers of information "about" the environment. This was followed by each learner touching the cheetah, which had a profound effect, it became real. This can be seen as experiential. Although the lecture was "expert" driven it meant that a lot of information could be passed on in a short period of time. Another important aspect of the Cheetah programme is farmer education.

→ can you elaborate on this? Did it form part of your fieldtrip what for did it take?

We then moved on to the Penguin colony at Boulders Beach, Simonstown. This is a managed project where man and the penguin are trying to live together. This part of the trip was more experiential because we were actually there where the penguins live. The conservation officer gave us a short lecture and then learners enjoyed observing the penguins in their habitat. This was education "in" the environment. Both parts so far only involve pseudo-participation from the learners. This is fine because of the short time spent on each activity, the learners did not become bored or frustrated. There was an important aspect of time management because of the many activities. Learners were enthusiastic and looked forward to the next adventure.

The final stop was Strandfontein landfill site to learn about the scientific aspect of waste management. This was reality and the less pretty part of the fieldtrip. Unfortunately it was a blustery day and we ended spending most of the time in the bus. Mr Niewoudt, "the garbage undertaker", talked us through the process of waste disposal. Unexpectedly the site turned out to be fascinating, not smelly and full of surprises. In retrospect after we had completed the day, I realise that we could have spent the whole day at the landfill site and broadened the issue to include the political, biophysical, economic and social, which would be using the "socially critical approach". This would have resulted in a more "holistic view of the environment as a totality of the interdependent relationship between natural and social systems." (Huckle, 1995) All the elements were there, however we ran out of time. At the landfill site there was a wetland where they were busy filming "Boesman and Lena", but it was full of pelicans and storks. Water quality could have been tested here. We could have carried a waste audit in 1mx1m. On the site

what aspect of this would we order it s.c approach and why do you say so? is apart from the sentence that follows.

Would the activity in itself have reflected an action research approach? Consider how it would have been done to reflect this kind of approach. Does an EIA necessarily lead to action?

this para that educational ideas can you see?

on you entry the educational idea relating to this thought

there are a group of people called "pickers" who are contracted to pick certain waste for recycling companies. They were very friendly and would have been interesting to interview. The next day in the Cape Times there was an article about them, which made me feel that the trip was relevant and up to date. I had hoped that the shock of seeing the waste that learners would be encouraged to recycle more household waste. The NIMBY principal applies here, because if it is "Not in my backyard", it is fine. We could also have done an impact assessment of the site, which would be using the action research method. I do not think that the trip changed behaviour, but it was food for thought. Very often the outcomes with teenagers are not immediate, but the seed was planted. There was a safety aspect to consider with the learners at the landfill site.

do you think this relevant here if so, try to elaborate to reflect its relevance.

Because of the timing of the trip at the end of the term, there was not enough time for reflexive evaluation. All learners had to write a written account of the days event. In many ways it was a "show and tell" trip. I as the educator decided where we should go and it was planned by me. The written reports were of a pathetic standard because I think that learners had not bought into the trip and issues were not explored fully. I needed to include an action research aspect so that learners could construct meaning. I need to consider more carefully effective evaluation after the trip by the learners. This is definitely an area I need to develop in my teaching.

would it necessarily change the education one takes

add this application and how?

now? and why?

When planning the trip one has to consider the outcomes. These should be communicated to the learners before the trip. I often fail to do this. The idea of the outcomes should be to "transform society". (Lotz, 1997) This is the philosophy behind Curriculum 2005. My field trip should enlighten learners about how to lead a more sustainable lifestyle. The Matric trip had all the aspects of "Active learning", dialogue, encounter and reflection, but all these could be explored further. There is certainly an element of "earth-love" in the programme. I hope that learners will have stories to tell of their experiences. This can be tapped in to later in future lessons and years and the diversity of the stories is what makes it so interesting. Gough said "the universe is made of stories, not atoms." (Gough, 1993:615) Personal stories of the same outing relate to the socio-historical context of the individual.

This section of a paragraph is not coming thru clearly in the context of the assignment.

didn't say before there was insufficient time for this?

The Cheetah and Penguin conservation project are both sustainable and learners can also see other job opportunities. All aspects could be used in a cross-curricular approach to teaching, however due to poor educator communication this was not explored. Specific outcomes were identified, but there were many open outcomes, like socialisation and time-management. All three visits on the day emphasised our need to be concerned about "environmental quality". (Huckle, 1995)

Cathy, your description of the pgm has come through very clearly. I have raised quite a few questions in the 2nd part, mostly trying to prompt the 'why' and also some for clarity in the context of the assignment. I hope you don't find it too overwhelming. In the beginning try to use the 'labels' for

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SELF-ASSESSMENT OF MY EE TEACHING PROCESSES

My teaching still has a strong "Behaviourist" methodology, but I think that I am slowly progressing to education "for" the environment. I need to change from being a neutral facilitator to an active mediator and I must try to include a community development component. In the past I used to use a lot of worksheets. This guided questioning proved to be ineffective. I then tried purely "earth-love" trips where the learners came along for a joy ride and I hoped that the beauty of nature would change attitudes and behaviour. Recently I have tried to combine the old and new methods that I have used, and the followup has been a written assignment. This has also not been as effective as it could have been. With OBE (Outcomes Based Education) I realise that I will have to clearly communicate the outcomes to learners before we go out on a trip and I must try to ensure that these will aim to transform society. To date my trips have definitely included education "about" and "in" the environment, but the "for" has to be developed further. By making this change I should be on the way to achieving "environmentally literate and active" learners, which was the "issue" that I addressed in Assignment 1. Greater learner participation is needed and this will be the basis for my Assignment 4 project. I aim to get the learners to develop a programme for "World Environment Week". This "interactive challenge of learning and planning together should be followed by action-taking to bring about change." (O'Donoghue, Janse van Rensburg)

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4. Environments and Methods
Share-Net - Draft November 1995
R. O'Donoghue and E. Janse van Rensburg

This is by far the most difficult of assignments, but your foundation is strongly laid here. You just need to explore a bit more of the WHY you do things the way you do and also WHY do you regard it as a certain approach.

Good luck.

Glenda

more below
I find it that you use the 'labels' here. Try to use it in the text to.

↓ This is an interesting derived. I'd like to encourage you to include it in the text of the assignment, possibly as a conclusion. Sorry it is part. When I saw 'self-assessment', just like all learners I didn't read further, so I thought it was the self-reflection at the end. So ignore my comments here.