CASES OF RECONTEXTUALISING THE ENVIRONMENTAL DISCOURSE IN THE NATIONAL CURRICULUM STATEMENT (R-9)

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ABSTRACT

With an intention of opening a vantage point on the story of how curriculum is actually created, this study follows the recontextualising of the environmental discourse of the National Curriculum Statement (R-9) in three case sites. These are: Grade seven Department of Education training material developed to introduce educators to the NCS (R-9), Delta Environmental Centre an environmental education non-governmental organisation, a rural primary school situated south of Durban. Using elements of the Bernstein's (1990) framework of pedagogic discourse, the study traces how the environmental discourse was de-located from the field of production and relocated into the pedagogic practice of each case. In trying to follow the continuity, changes and discontinuities in the official [environmental] discourse as it is recontextualised, the study utilises Bernstein's conceptual constructs of selective appropriation and ideological transformation. These constructs of selective appropriation and ideological transformation enabled me to 'look into' each case and get a perspective of how to explain the recontextualising processes.

The study acknowledged that discourses are shaped and steered by historical, political and economic realities and begins by tracing the genesis of the environmental discourse within formal curriculum policy in South Africa. This socio-historical review highlights the main factors and happenings that shaped the present curriculum discourse and its production as official policy discourse.

The study highlighted that within each case the recontextualising story is unique but some clear patterns emerged as factors that impacted on recontextualising processes. These were the role of history and context, knowledge and experience of the discourse, ideology and emphasis, and the depth with which the discourse was engaged. The discussion of these factors gave valuable insights into the recontextualising of curriculum discourses.

The study comments on the need to clarify the environmental focus in the Learning Areas and to actualise this into practice so that the discourse becomes an integral part of teaching, learning and assessment. The study also highlights the need for professional development opportunities that will enable educators to clarify the nature and focus of the environmental discourse in the NCS (R-9), and its articulation in Learning Area in context. In particular, the environment and social justice relationships appear to require greater clarity of focus and interpretation in recontextualising processes. There also appears to be a need to develop educators' foundational knowledge of environmental issues to strengthen the recontextualising of this discourse.

DEDICATION

This thesis is dedicated to Dad, who inspired the start of this research by teaching me the power of knowledge but never made the end.

ACKNOWLEDGEMENTS

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CHAPTER 1: OVERVIEW OF THE STUDY

1.1   BROADER CONTEXT OF STUDY

Curriculum transformation in South Africa has been intimately linked to the broader goals of social transformation in post-apartheid South Africa. This has had wide ranging implications for policy development and implementation in the past 10 years of South African democracy. In line with the environmental goals embedded within the South African Constitution (see section 2.2.2.2), the environmental focus in the NCS (R-9) is articulated as one of the foundational curriculum principles and through the articulation of this principle, the environmental focus has become an integral part of all eight Learning Areas in the NCS (R-9) (see section 2.2.2.4). This focus sets a clear patterning framework for future environmental education processes. It represents a significant shift in environmental education curriculum work, particularly the uncoupling of the notion of environmental education as a 'thing' in its own right, to the foregrounding of an environmental focus in national curriculum policy and Learning Areas (Lotz-Sisitka, 2002). The National Environmental Education Project for the General Education and Training Band (NEEP-GET), situated within the National Department of Education and working with other environmental education partners, has, over the past four years, supported the articulation of an environmental focus in all Learning Areas in the NCS (R-9) (NEEP-GET, 2004). This study is thus framed during a time of curriculum transition.

1.2   MY ROLE AS AN ENVIRONMENTAL EDUCATOR

I have previously worked in an environmental education non-governmental organisation (NGO) supporting teacher education. More recently I have worked within the NEEP-GET[1] project in a provincial department and since 2005 in the National Department of Education. I have, in this role, been involved in the processes of policy revision and have supported the articulation of the environmental focus within Learning Areas. From this experience, I have developed a keen interest in trying to illustrate and understand how this environmental focus in the Learning Areas is being appropriated and developed further. I also have an interest in how the Department of Education and other environmental education organisations are responding to the emergence of an environmental discourse in curriculum policy. Furthermore my interest extends to how this environmental focus is being interpreted and

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[1] The National Environmental Education Project for the General Education and Training band (grade R-9) see section 2.

translated into appropriate classroom pedagogy, as this is significant to both policy development and teacher professional development work.

In the context of this work, I realised that there were diverse transformations of the official policy discourse taking place in different contexts: NGOs, provincial education departments and within the National DoE's training processes (amongst others).

1.3   FRAMING OF THIS STUDY: SEARCHING FOR A RESEARCHABLE QUESTION

Drawing on my experiences in teacher professional development and policy interpretation work, I sought a way of researching the transformations that occur in policy discourse. These interests led me to the work of Basil Bernstein (an educational sociologist). A reading of his work helped me to understand the phenomenon of how knowledge and policy 'texts' move from one arena to another. Bernstein's (1990, 2000) work on recontextualisation provides a useful theoretical lens to see how forms of knowledge, in this case official curriculum documents are transformed into pedagogic communication. Lotz-Sisitka (2004) writes that Bernstein's theoretical frameworks provide insight into the rules and procedures via which knowledge (in this case 'new' social knowledge on environment – which was not part of the South African curriculum until 1996) is converted into classroom talk, curricula and other forms of educational support (e.g. materials). Bernstein's (1990, 2000) ideas provide a set of concepts/ criteria/ principles, which help us describe the macro and micro structuring of knowledge (Parker, 2004; Singh, 2002).

Bernstein (*ibid*) distinguished three fields, which I will try to capture in my study. The research thus encompasses a:

- study of the recontextualising process of the official pedagogic discourse (OPD) at the field of production (National Department of Education as the Official Recontextualising Field (ORF);
- study of the recontextualising process in the field of recontextualisation (Delta Environmental Centre as the Pedagogic Recontextualising Field (PRF); and
- a study of the recontextualising process at the field of reproduction (Mashiwase Primary as the Pedagogic Discourse of Reproduction).

This study was thus framed to tell three different recontextualising stories as these emerge from three different sites. To enable a more in-depth interpretation of the recontextualising processes in these sites, the study drew on Bernstein's concepts, in particular, I chose to focus on the de-location and relocation of the discourse within each case using Bernstein's

constructs of ideological transformation and selective appropriation which he outlines as being inherent in recontextualising processes (see section 2.2.1).

1.4   RESEARCH QUESTION AND GOALS

Based on the interest in this research described above, the research was framed with the following research question: How are environmental discourses within the National Curriculum Statement (R-9) recontextualised?

The goals of the research are to:

- Investigate use of, and changes to environmental discourse, within training programme preparation in the Official Recontextualising Field (ORF) (National Department of Education training materials case study);
- Investigate use of, and changes to environmental discourse, in teacher training workshop in the Pedagogic Recontextualising Field (PRF), an NGO case study; and
- Investigate use of, and changes to environmental discourse, in the field of reproduction (case study of selected school lessons in one school).

With a view to informing:

- Future environmental education professional development and curriculum work;
- My practice within the extension of the NEEP-GET project, which is aimed at institutionalising the environmental discourses within the practice of the National Curriculum Unit; and
- The National Department of Education by sharing insight into how the environmental discourse in the NCS (R-9) is being recontextualised and used in the field.

1.5   CONTEXT OF THE RESEARCH SITES

As mentioned above, this research aimed to investigate cases of recontextualising processes in three different fields. These included:

1.5.1   NCS (R-9) Grade seven training material: The ORF

Prior to 1994, South Africa had 19 racially defined education departments, which was merged into one National Department of Education and nine Provincial Departments after 1994 (Kraak, 1999). The National Department's core responsibility is policy formulation and training of provincial officials. The National Department was responsible for the official

pedagogic discourse (OPD) which is the NCS (R-9) policy. Since 2003, training has been organised by the National DoE to support implementation of the NCS (R-9) in schools. In 2004-2005 the Teacher Development Directorate and National Curriculum Directorate in the National Department of Education, developed training material to train and provide support to provincial curriculum structures for the rollout of the Grade 7 NCS (R-9). The manuals provided the official guide for provinces in determining their implementation and training strategy. These guides could be used selectively by the provinces, or could be used in their entirety, for further training of provincial officials, who then train up to 40 000 teachers per year (pers comm. Joshua, 2005). These training materials formed the focus of case one, which looked at recontextualising of the environmental discourse in the ORF (as discussed in section.4.3 in more depth).

1.5.2 Delta Environmental Centre: The PRF

Delta Environmental Centre (DEC) is an independent, completely autonomous organisation founded in 1975. DEC is housed within a converted sewage works building, situated in a 104 hectare municipal park (Delta Park) north of Johannesburg. DEC is an environmental education NGO, which has a long history of centre-based environmental education work providing professional development for teachers to integrate environmental issues into curriculum policy. DEC currently runs different professional development workshops for teachers in Gauteng, North West and Limpopo provinces.

DEC's mission is to 'operate as an educational institution of public character' and its vision is to 'enable people to improve the quality of their environment by promoting the management and sustainability of all resources through innovative education and training programmes and consultation' (Delta Environmental Centre Background, 2005).

DEC has been engaged in teacher training programmes that have a unique approach. The DEC staff work very closely with the entire staff of the project schools instead of offering workshops to a selected or to nominated groups of teachers from a larger number of schools. This approach has enabled the DEC staff to establish a sound working relationship, based on mutual trust, with these groups. DEC staff also engage schools in selecting and sustaining environmental projects, that are action orientated. They aim to ensure that these projects have strong, meaningful links to curriculum and classroom-based work (Delta Environmental Centre Review, 2005). Some of the professional development activities at DEC formed the focus of case two, which constituted a case in the PRF.

1.5.3 Mashiwase Primary: The field of Reproduction

Mashiwase is a school in Umbumbulu, south of Durban. Umbumbulu is a rural area with no access to electricity and running water. In describing his local environment the educator explained that it was "very beautiful and green, smoke-free and noise free but it's very far away with no access and no access to Information Technology, there are many unemployed people and high levels of formal illiteracy" (C3InT). The area faces high levels of HIV infections, faction fighting – tribal versus 'newcomers', low literacy levels with 17.2% having no formal schooling and 24.3% with schooling levels below Grade 6. There are high levels of unemployment with only 7.8% of the population full time employed and 2.8% informally employed (Durban Metro Report, 2000 as cited in Ramsarup, 2004). The community thus faces high levels of unemployment and consequently poverty is a huge problem. The school is set high on the hills, very far from any main access roads. There are eight teachers and approximately 350 learners in the school starting from grade 1. The school fee is R70 per annum and presently, less than 20% of learners are able to pay (pers comm. Khomo, 2005). Some lessons offered at this school formed the focus of case three, which constituted a case in the field of reproduction.

1.6 CLARIFICATION OF KEY TERMS USED IN THIS THESIS

This section will clarify some of the terminology used in this thesis.

1.6.1 Interpretation of discourse within this study

Drawing on Gilbert (1992), and Fairclough (1992), Heck (2003) explains discourse as the 'systems of meaning that we ascribe to texts'. There are three distinct ways meaning can be ascribed to texts, all of which are integral to this study. They are:

- Review a piece of text that is read to identify the different discourses as evidenced by the words used;
- Analyse the processes through which the text is developed and interpreted to examine the development of particular words ideas/images; and
- Review the social and historical location of the production and use of the text and the regulated practice that takes place within particular social situations.

Fairclough (1992, as cited by Heck 2003).

These three aspects of discourse: - a piece of text, a discursive practice and a social practice - are all integral to this study and shape the way the idea of environmental education discourse is used and examined within this study. It should also be noted here

that this study adopts a sociological approach to analysing discourse (after Bernstein 1990, 2000).

1.6.2 Recontextualisation

Drawing on the Bernstein's (1990, 2000) framework, recontextualising within the context of this study seeks to explain the transformation and the embedding of an official pedagogic discourse within a discourse of social practice (professional development and classroom practice).

1.6.3 Appropriation

The assimilation of concepts into a governing framework, assimilating new ideas into schema People use these schemas to organise their current knowledge and provide a framework for future understanding (http://en.wikipedia.org/wiki). Bernstein uses this concept more sociologically and explains social appropriations that occur as a result of ideological interests and associated transformations.

1.6.4 Ideology

Johnson (1995), describes ideology as a set of cultural beliefs, values and attitudes that underlie and thereby to some degree justify and legitimate either the status quo or a movement to change it. Ideology can thus be seen as a linked set of ideas and beliefs that we use to guide / frame our discursive practice, which often manifests as organising structures.

1.7   OVERVIEW OF CHAPTERS

Chapter 1 introduces the study. It outlines the broader context within which this research has been framed and explores the interests and questions from which the study evolved. It introduces the research question and goals and introduces some key concepts used in this study. It also introduces and outlines the contexts of the three cases of recontextualising that are examined in this study.

Chapter 2 introduces Bernstein's model of pedagogic discourse, which constitutes the theoretical vantage point that this study has drawn on. It outlines the socio-historical genesis of the environmental discourse within formal curriculum policy in South Africa and the roles played by stakeholders active within the official and pedagogic recontextualising fields explaining how this interaction of stakeholders in these two fields led to an environmental

discourse being defined as part of the OPD in South Africa in the NCS (R-9). It also outlines some of the lessons and early experiences within these recontextualising fields.

Chapter 3 discusses the overall design, methodological approaches and data generation techniques used within each case study. It clarifies how and why I have framed this study within an interpretive orientation to research. It also discusses how the data generation was managed within each case study and how the data was analysed. It provides insights into how I managed to uphold a sound research ethic and how I reflexively evaluated the trustworthiness of this study.

Chapter 4 describes the emerging recontextualising processes within the three studies. Through highlighting evidence of selective appropriation and ideological transformation within each case I try to follow the continuity, changes and discontinuities in the official discourse, as it is recontextualised in the three different fields (the ORF, the PRF and the field of reproduction).

Chapter 5 presents a discussion of the findings presented in chapter four by examining the recontextualising processes within each case using four themes: context, ideology and emphasis, knowledge and experience and depth of engagement with the discourse. These themes provide a more in-depth insight into the recontextualising of environmental discourse in South Africa's NCS (R-9) implementation process.

Chapter 6 reflects on the research process and presents a concluding summary of the study. It provides some tentative recommendations for each case and reflects on the methodological framework used in the study, providing methodological recommendations for others working to undertake similar forms of research.

1.8   NOTE TO THE READER

This study does not intend to provide a critique of policy or policy interpretation practices. It does not intend to insinuate or propose that there is, or could ever be linear interpretations of policy but it rather attempts to describe how different providers (DoE and NGOs) and teachers appropriate and use the environmental education discourse in relation to the official pedagogic discourse (as this has been framed in socio-historical context). This, I believe, may provide valuable insights for further environmental education policy implementation processes.

Being an environmental educator I have kept my analysis rooted in the field of environmental education. The Bernstein framework was used to complement my conceptual tools and it provided a useful lens to view and interpret the cases in this study. It must be stressed however that this half-thesis makes no attempt to critique the Bernstein framework or to use it to undertake in-depth critiques of the sociological messages embedded in the recontextualising processes. Rather than being focused on an in-depth Bernsteinian exploration of pedagogic discourse, it simply uses some of his concepts as conceptual tools to analyse how environmental education policy is being appropriated. The use of these concepts should therefore be viewed within the scope of this study, which is a half thesis at masters level. During the course of the study I have come to realise the full potential of these concepts for educational and curriculum research, but have not pursued their full application as analysis tools here.

CHAPTER TWO: DEVELOPMENT OF ENVIRONMENTAL DISCOURSE WITHIN THE CURRICULUM POLICY PROCESS IN SOUTH AFRICA

2.1 INTRODUCTION

In this chapter, I will review how the environmental discourse in the National Curriculum Statement (NCS R-9) came to be constituted as it is (as official pedagogic discourse (OPD) in Bernsteinian terms). The chapter will outline how the environmental focus within curriculum has been shaped through changing curriculum policy processes in South Africa. It will attempt to highlight some of the shaping influences, milestones and key discourses that have constituted and shaped this focus within the NCS (R-9).

This socio-historical review will enable a closer, more critical analysis of the development of the NCS (R-9) and in particular the first principle and its articulation in the eight Learning Areas. Understanding the historical constituting of the discourse will provide perspective for interpreting the appropriation and use of this discourse within different recontextualising practices (see chapter 5).

The socio-historical review of the emergence of an environmental discourse in the NCS (R-9) also incorporates an acknowledgement of the broader socio-historical happenings in South Africa and how these complex transformation processes inadvertently shaped the emerging curriculum development processes of the time.

2.2 EMERGENCE OF AN ENVIRONMENTAL FOCUS AS INTEGRAL TO THE OPD IN SOUTH AFRICA

This section will trace the development and happenings within the South African environmental education community and the emerging presence of an environmental focus within formal curriculum policy, or the defining of an environmental focus as part of the Official Pedagogic Discourse (Bernstein, 1990, 2000) in South Africa.

To begin with, I first discuss the theoretical framework of this study, to provide the context of interpretation that informs and shapes this study. I then go on to discuss the genesis of the environmental discourse in the OPD.

2.2.1 Theoretical framework: Recontextualising – modeling of the construction of a pedagogic discourse

Apple (2003) highlights that there is no simplistic linear model of policy formation, distribution and implementation. Ketlhoilwe (2005) in a similar vein, underlines that policy is not simply received and implemented but rather that it is, subjected to interpretation and then 'recreation'. These ideas are supported by Bowe, Ball and Gold (1996 as cited by Kethoilwe, 2005), who observe that 'practitioners do not confront policy texts as naïve readers, they come with history, with experience with values and purposes of their own and they have vested interests in the meaning of policy … policy writers therefore cannot control the meanings of their text'. Linking these ideas to national curricula, Apple (2003) writes that the national curriculum is 'not so much being implemented' in schools as being 'recreated', not so much 'reproduced' as 'produced'. This study seeks a deeper insight into these processes and draws on the work of Bernstein, an educational sociologist, who provides some tools, to understand how an official policy discourse is converted into classroom practice or into pedagogic discourse.

Ensor (2004:2) indicates that Bernstein provides us with insights into how 'dominant ideologies at the macro-level translate to pedagogic discourse at the meso-level and pedagogic practice at the micro level'.

Parker (2004:7) reflects that Bernstein's concepts of the 'pedagogic device provides a way of describing the internal construction of any pedagogic communication of knowledge through three hierarchical and interrelated sets of rules':

- Distributive rules which regulate access to different forms of knowledge; they establish who gets access to what knowledge;
- Recontextualising rules which construct the 'what and how' of pedagogic discourse; and
- Evaluative rules which construct pedagogic practice, the criteria to be transmitted and acquired (*ibid*, 2004).

Ensor (2004:3 citing Apple, 2002) highlights that these rules specify the 'transmission of suitable contents under time and context, and perform the significant function of monitoring the adequate realisation of the pedagogic discourse'.

These rules operate over three fields each of which have their own 'rules of access, privilege and special interest':

- The *field of production* where the new knowledge discourses are generated;
- The *field of recontextualisation* where discourses appropriated from the field of production are recontextualised, simplified and transformed into a new pedagogic discourse; and
- The *field of reproduction* where recontextualised discourses are transformed a second time for general consumption, where pedagogy and curriculum are actually enacted in schools (Apple, 2003; Parker, 2004).

Bernstein (2000:116) further suggests that the process of recontextualising entails a principle of **de-location** – which involves *selective appropriation* of a discourse from the field of production, and a principle of **relocation** of that discourse as a legitimate discourse within the recontextualising field. Bernstein (*ibid*) further suggests that in the processes of de- and re-location, the original discourse can undergo *ideological transformation* according to the play of the specialised interests in the recontextualising field.

Bernstein's model of pedagogic discourse helps to illustrate the multiple and complex relations which intervene in the production and reproduction of pedagogic discourse in the various fields (Neves & Morais, 2001). To get an overall perspective of Bernstein's theory, I introduce the model developed by Bernstein in 2000 and adapted by Neves and Morais (2001).

The model (Figure 1.1) shows that the production of official pedagogic discourse is the result of complex relationships, in the generative and recontextualising levels of general regulative discourse. General regulative discourse (GRD) comprises the 'dominant principles of a society' and is generated as a result of the influences '… between the State field and the fields of production (physical resources) and symbolic control (discursive resources)' (Neves & Morais, 2001: 225). The model highlights that official pedagogic discourse, although influenced greatly by the dominant principles of society is however also subject to a recontextualising process. 'In this recontextualising process, two fields intervene directly - the *official recontextualising field*, which is directly controlled by the State, and the *pedagogic recontextualising field*' (Neves & Morais, 2001: 225-226). The fields of economy and symbolic control influence them both and their main activity is the definition of the *what and the how* of pedagogic discourse (*ibid*). The model further illustrates that when pedagogic discourses produced at the level of the official and pedagogic recontextualising fields are incorporated and developed into pedagogy at the transmission level, they can still undergo a

recontextualising process, which is influenced by the specific context of each school, community context, and the pedagogic practices of the teacher (*ibid*). In this way, the discourse reproduced in schools and classrooms is influenced by the relationships (school-community; teacher–learner), which characterise its specific transmission contexts (Neves & Morais, 2001: 225-226). The model also illustrates that the production and reproduction of pedagogic discourse involves an extremely dynamic process (ibid).
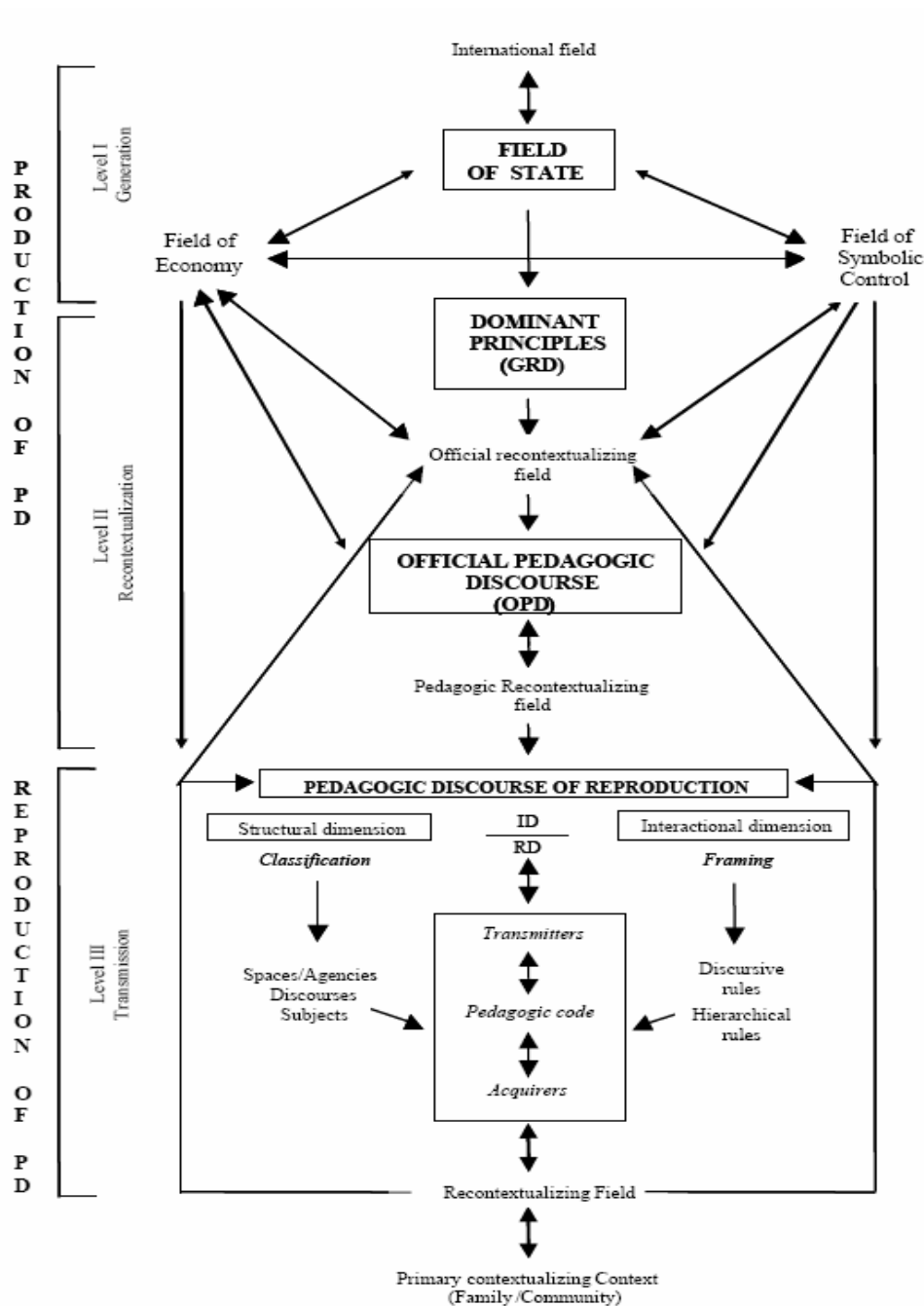
FIGURE 2.1: Bernstein's model of pedagogic discourse (1986, adapted by Neves & Morais, 2001)

Neves (2002), in applying Bernstein's ideas to the Portuguese education system, explains that the text of any curriculum represents the official pedagogic discourse (OPD) produced in the official recontextualising field (by the Ministry of Education) and is the result of multiple influences from state, symbolic control and economy together with international influences (see section 2.2.2). The text is subjected to recontextualising processes in the pedagogic recontextualising field when it is used, for example in the in the construction of textbooks or in professional development programmes. It is then further transformed through the pedagogic discourse of reproduction (PDR). Both the curriculum text (OPD), the textbook or professional development text (PDR) are recontextualised in the reproduction context, at the level of the teacher's pedagogic practice in the classroom.

Using Bernstein's ideas at the micro level in a classroom, Morais (2002:1) highlights that Bernstein's theory has provided concepts to define 'learning in social contexts and the interactions which occur in them, that may be used to create those where children are active learners'.

Reflecting on Bernstein's ideas within a South African context of Mathematics Teacher Education, Parker (2004:8) highlights that in 'each arena ideological struggles take place as different agents and agencies attempt to dominate the distribution, recontextualisation and evaluation of pedagogic discourse at different levels of the system'. The pedagogic device as outlined by Bernstein (1990) thus generates a 'symbolic ruler of consciousness', the question becomes thus; whose ruler, what consciousness? Drawing on this, Parker (2004:9) asks, does the state control the pedagogic device through the policy they generate; or do the various institutions, textbook writers or NGOs that train teachers? What is the relationship between the state and these providers? Who are the recontextualisers and what are the principles operating for the selection and transformation of knowledge for teaching and learning? Parker's questions are key questions pertinent to an understanding of how curriculum policy is appropriated, developed and recontextualised.

A schools curriculum and pedagogy are considered message systems and with evaluation practices they constitute the structure and processes of school knowledge transmission and practice (Sadovnik, 2001). Thus Bernstein's analysis of pedagogic practice looked at the process and content of what occurs inside schools (*ibid*).

Sadovnik (2001) highlights that Bernstein's theoretical approach has been labelled Durkheimian, neo-Marxist and structuralist. He (ibid) also quotes Harker and May's (1993) criticism that Bernstein's structuralism denies human agency. I acknowledge these critiques but believe that the tools Bernstein provides could provide some valuable insights and

opportunities to study curriculum and opens a vantage point on the story of the official construction of a discourse during a time of educational change.

2.2.2   Genesis of an environmental focus in Official Pedagogic Discourse

In this section I explore the location and development of the environmental discourse as it emerged within the Official Pedagogic Discourse (OPD).

2.2.2.1 Early education and environmental policy changes (1990-1994)

The period from 1990 to 1994 marked a significant political period in South Africa's history, as the country was in a process of transition to a new democratic dispensation, post apartheid. The following section explores some of the dominant environmental ideologies that marked this period.

- ***Understanding environmental discourses within Apartheid education***

The following extract from Khan's study on 'Reconstructing the history of South African Environmentalism, 1910-1990' illustrates a view of environment prevalent during the apartheid era:

> For most of the twentieth century, the dominant conservation paradigm in South Africa has been based on an approach bequeathed by the late nineteenth century, i.e. a wildlife – centered, preservationist approach which appealed almost exclusively to the affluent, educated mainly white minority. Single species campaigns, such as the 'save the Rhino' campaign, promoted by the mainstream environmental movement in the midst of black poverty have added to a widely held perception among black communities, that conservationists rate the needs of wild animals above those of the poor *(*Khan, n.d.).

The above extract highlights the dominant discourse as being predominantly conservation orientated, with a strong intent to preserve and conserve species, with little recognition of people and their needs. It also highlights the absence of social justice in the environmental discourse of the time.

Khan's ideas are similarly reflected by Mamphele Ramphele, who, in reflecting on South Africa's past writes:

> Historically the approach to ecological concerns was fragmented and conservative reflecting the interests of the privileged white sector of South African society. Government and non-government organizations were largely concerned with establishing and maintaining nature parks and saving endangered species, such as the rhinoceros. Little attention was paid to the negative impact of conservation programmes on poor blacks living in the affected areas (Ramphele, 1991:6).

The booming conservation movement started to have an influence on school curricula and O' Donoghue (1996) notes that as early as 1943 there was talk of introducing conservation into formal education through a schools week, followed by interest in soil erosion in the 1950s and a conservation syllabus by 1953. By 1957 schools focusing on wilderness trails started to develop (O' Donoghue, 1996:210).

This booming conservation movement was further developed into a trend later known as 'earth love education' in the mid 1980s. This represented a spiritualising turn in conservation education closely linked to the prevailing Christian National Education ideology of the time (O' Donoghue, 1996).

- ***The early 1990s –A political shift***

The early 1990s were marked with radical political change in South Africa, with the unbanning of the ANC and SACP[2] in February 1990 and with this, the political landscape in South Africa changed. Khan (n.d.) asserts that this created political space for organisations to broaden their horizons beyond anti-apartheid politics, which precipitated a major shift in political attitudes and perceptions of the environment. Ramphele (1991) also acknowledged the shift in the early 1990s to a more 'people-centred, participatory approach to ecological concerns, and 'green politics'… which sees people and environment as intimately connected making its way onto the central political arena' (Ramphele, 1991: 7-12).

Lotz (1996) in citing Ramphele (1991) highlights that environmental education in South Africa thus emerged as a response to unique and complex socio-ecological, socio-economic and socio-political environmental issues caused by both modernism and '…its delinquent cousin Apartheid…' (O' Donoghue as cited by Lotz, 1996:33).

- ***The broader education discourse: A changing discourse in a time of change***

McKay and Rom (1992, citing Alexander 1990) highlight that the ideals of People's Education was very dominant within 'the non-state sector' in the pre liberation years within South Africa. The vision of this approach within South Africa espoused political and educational aims contrary to those generated by the apartheid regime. The implicit aims involved more than just deracialising South African society and included organising a system of education that 'frees' learners from any type of subordination and prepares them to participate in a democratic society as critical, active citizens. The need to eliminate capitalist social relations and capitalist norms of competition and individualism in favour of people's power was also a very dominant ideology within the movement (McKay & Rom, 1992).

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[2] ANC –African National Congress; SACP – South African Communist Party

In the early curriculum debates, the dominant discourse in the framing of education within the 'new' South Africa, espoused both educational and political aims.

2.2.2.2 Establishing the nature of the environmental discourse in the OPD (1994-1996)

As a new fledgling democracy the period 1994 – 1996 marked an era of political change, that saw the emergence of new policies and practices that captured the country's vision of creating a 'new' democratic South African society. The following section explores some of the emergent policies and legislation and tries to capture how they shaped the unfolding environmental discourse.

- *The Reconstruction and Development Programme*

In 1994, the Reconstruction and Development Programme (RDP) of the ANC outlined their commitment to environmental issues by committing the new democratic government to 'ensure that all South African citizens, present and future have the right to a decent quality of life through sustainable use of resources' (ANC, 1994: 40).

The outlined strategies in the RDP highlight policy revision; new legislation; rethinking of development strategies; more focus on community participation in environmental decision-making and 'environmental education programmes to rekindle our people's love for the land, to increase environmental consciousness amongst youth, to coordinate environmental education with education policy at all levels and to empower communities to act on environmental issues' (ANC, 1994: 40).

- *The Constitution*

When the new South African Constitution was adopted in February 1997 it linked environmental issues to human rights and social responsibilities. Giving recognition to all citizens right to an environment that is not detrimental to their health or well being, the Constitution thus signalled a national commitment to environmental action as quoted in the *Bill of Rights* in the new Constitution, Chapter Two, Section 24 (RSA, 1996:11)

> Everyone has the right:
>
> (a) to an environment that is not harmful to their health or well-being; and
> (b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that
>
> (i) prevent pollution and ecological degradation;
>
> (ii) promote conservation; and

(iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

These developments signal an emerging political will to focus on environmental issues within the fledgling democracy and the changing policies of the country.

- *CONNEP*

In May 1995 a comprehensive consultative process, known as the Consultative National Environmental Policy Process (CONNEP) was launched. At a national conference (CONNEP I), in August 1995, a participatory process for drawing up a new environmental policy was decided upon. As a result of this, a discussion document entitled '*Towards a New Environmental Policy for South Africa*' was released in April 1996 for public comment. Following provincial participation, the Green Paper on a New Environmental Policy for South Africa was released in October 1996. A second national conference (CONNEPP II) was held in January 1997, at which stakeholders were given an opportunity to present their views on the Green Paper (Summary Brief, White Paper on Environmental Management Policy for South Africa, n.d.). These views and other public comments on the Green Paper informed the drawing up of a White Paper, which outlined the government's vision for environmental management. This vision was 'one of a society in harmony with its environment' (RSA, 1997:16).

> Adopting a coordinated and integrated approach to sustainable development, the new vision sought to address: the quality of peoples lives; equitable access to land and natural resources; the integration of economic development, social justice and environmental sustainability; the sustainable use of social, cultural and natural resources, and public participation in environmental governance (Summary Brief, White Paper on Environmental Management Policy for South Africa, n.d.:1).

The CONNEP process which served as an umbrella participatory policymaking process, was arguably one of the 'most open and accessible policy-making initiatives that the new government has undertaken' (McDonald, n.d: 6) and thus has had a significant influence on the shaping of environmental policy.

- *The National Environmental Management Act (NEMA)*

The CONNEP process culminated in the promulgation of the National Environmental Management Act (Act 107 of 1998) (RSA, 1999). The National Environmental Management Act (NEMA) was passed in January 1998 and was the statute that guided decision-making and administration for all subsequent environmental legislation. Central to its character is the concept of cooperative environmental governance (RSA, 1998:11-12). In keeping with Section 24 of the Constitution NEMA places people and their needs (physical, psychological and developmental, cultural and social) at the forefront of environmental management (RSA,

1998: 6). The application of Integrated Environmental Management is also central to this Act. General development (both public and private) must be sustainable from environmental, economic and social perspectives and pursue the concepts of equitable access to environmental resources (University of Western Cape, n.d.).

Legislative initiatives such as these illustrate the extent to which environmental thinking moved from its previously narrow, racially based and conservation orientated focus to one which links ecology to the socio-economic welfare of the nation as a whole – 'no small accomplishment in a country where environmental issues were simply not on the political agenda less than a decade ago' (MacDonald, n.d: 5).

- *National Education Policy Initiative*

Lotz–Sisitka (2002) highlights that a key player in the mass democratic movement for change in the early 1990s was the National Education Coordinating Committee (NECC), a national body representing teachers, parents, and students. The NECC initiated the National Education Policy Initiative (NEPI), which ran from December 1990 to August 1992, with the aim of interrogating policy options for education to inform the various processes in the domain of policy consideration, and to build policy capacity. NEPI was launched at the time when the country was in an interregnum; it operated within a value framework derived from the ideals of the democratic movement and its vision of 'People's Education' (see section 2.2.1.3.) The value framework encompassed principles of non-racism; non–sexism; a unitary system; democracy and redress. These values underpinned all the work of NEPI, and formed the core of the curriculum recommendations made for the curriculum development process (NEPI, 1992: 3; NEPI, 1993: 7).

- *EEPI – the policy discourse*

In 1991, the Department of Environmental Affairs, a key stakeholder in the environmental community with other members of the environmental education community, represented by the Environmental Education Association of Southern Africa (EEASA) were concerned that Education Departments had not embarked on any active involvement in environmental education. Some of the problems identified at the time include:

- Education departments did not really understand the concept of environmental education;
- A misconception of what environmental education implies in practice as officials saw environmental education as a bush experience;
- Education Department officials lack a holistic view of environment;
- Education Departments saw environmental education as a separate entity; and
- In some departments environmental education was not part of policy at all (Clacherty, 1993a: 3).

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The Environmental Education Policy Initiative (EEPI), comprising a collaborative group of environmental education, government and civil society stakeholders was born out of the 1992 Environmental Education Association of Southern Africa (EEASA) conference, in response to the need for a more proactive lobbying role during the emerging processes of change and curriculum development (EEASA 1992, as cited by Clacherty, 1993b).

The EEPI adopted a 'participatory process orientation' (Clacherty, 1993, Appendix 15) that involved people in all provinces and drew on international experience in environmental education, feeding into a national workshop in Brits (Dikhololo) in August 1993, that deliberated the incorporation of environmental education into formal curriculum. The Dikhololo workshop thus became a milestone event in South African environmental education (Clacherty, 1993a:8).

From their deliberations, the EEPI process highlighted four possible policy options for environmental education within formal education:

- Environmental education as local, problem solving curriculum action;
- Environmental education as an integrated approach to environmental education (an environmental perspective within separate subjects);
- Environmental education as separate subjects; and
- Environmental education as a component within subjects (EEPI, 1995:2-3).

These options, although they were not ultimately adopted as is, represented a significant deliberation process. They, for the first time, illustrated examples and ideas of how environmental education could be adopted into formal curriculum. The examples, cited in the policy options booklet, highlighted some crucial questions for curriculum task committees to deliberate. Some examples include:

- How is social justice an environmental issue;
- What constitutes the relationship between people/society and natural resources, including the implication of this for sustainable living;
- How political, social and economic decisions affect the environment we live in and its ability to support an acceptable quality of life for all of our people (EEPI, 1995:8).

These questions highlight that the view of environment proposed within the EEPI was a holistic one that viewed environment very broadly, as 'interactions among the socio-cultural milieu, living things and life support systems (people and history in nature), all of which have brought about the modern world we experience and the issues that it presents us (socio-ecological)' as illustrated in the booklet '*Environment, Development and Environmental Education*' released by EEPI in 1993 which explores some of the key ideas and trends in

environmental education (O' Donoghue,1993:17). This booklet (*ibid*) highlights some of the 'changing perspectives' prevalent at the time notably:

- A move from targeted messages from scientific experts to a more collaborative approach, where policy and curriculum initiatives allow teachers and pupils to make choices, take responsibility and engage in local environmental action taking;
- A move from wildlife /nature experiences to policy and curriculum initiatives which allow more active learning situations which engage learners in encounter, dialogue and reflection; and
- A move from 'conservation of natural resources to sustainability and social justice,' where policy and curriculum initiatives address environmental problem solving; social justice and a change to more sustainable living.

The above document also noted that the 'way policy and curriculum initiatives go about placing the environment at the centre of education reconstruction will be crucial' (EEPI, 1993:26). It recommended 'meaningful contexts' drawn from local and global socio-ecological contexts that allow learners to engage in active learning processes of encounter, dialogue and reflection as a curriculum approach for environmental education (EEPI, 1993). The book, with its analysis of trends and changing perspectives, thus became a significant catalyst in challenging the practice and approach of the environmental education community (EEPI, 1993; Lotz-Sisitka, 2002).

A significant outcome of the EEPI process was the resolution adopted at the NECC conference in 1993, which stated that, 'the curriculum will develop the understanding, values and skills necessary for sustainable development and an environment that ensures healthy living' (Clacherty, 1993: Appendix 17).

The adoption of this resolution illustrates a large shift from the problems with education departments discussed above and highlights an emergence of an integrated approach to environment embedded within the formal policy processes.

Lotz-Sisitka (2002) highlights that this clause was reproduced in the ANC policy framework for education and training in 1994, leading to a principle in the 1995 White Paper on Education and Training, which gave significant impetus to further environmental education curriculum development work. This principle reads:

> …environmental education, involving an interdisciplinary integrated and active approach to learning, must be a vital element of all levels and programmes of the

education and training system, in order to create environmentally literate and active citizens and ensure that all South Africans, present and future, enjoy a decent quality of life through the sustainable use of resources (RSA, 1995:18).

Some of the key elements of the discourse at this time is greater support for social justice perspectives, a broader view of environment, and the emergence of contextual approaches focusing on learners making decisions, engaging in dialogue and taking action in local contexts. This signals a move away from a more dominant conservation based discourse, prior to 1994 (EEPI, 1993).

By this time, environmental educators had established themselves as official stakeholders in the curriculum development process and had institutionalised a role for environment within the formal curriculum development process.

2.2.2.3 A cross curricular discourse for environment in/as OPD (1996-2000)

Within education, 1996 saw the launch of an Outcome Based Approach in South Africa, and in early 1997 C2005 was launched. This section traces the role of the environmental discourse within the newly launched post apartheid, South African curriculum.

- *EECI - the OBE discourse*

In early 1996 with the shifting focus of the curriculum movement to an Outcomes Based model, the Environmental Education Curriculum Initiative (EECI) was born out the EEPI process (Lotz-Sisitka, 2002). The aim of the EECI was to contribute to national curriculum development processes through the inclusion of environmental concerns (EECI, n.d.).

Proactive lobbying and structured interventions from the EECI led to the defining of a number of Learning Area Specific Outcomes that were environmentally focused. This heralded a momentous victory for the environmental education lobby, which had laboured extensively to secure a place for environment in the national curriculum. In a feature in the Environmental Justice Networking Forum newsletter the 'victories' were outlined to the broader environmental community who had long supported CONNEP, the EEPI and EECI lobby process. This highlights the involvement of a broad sector of environmental stakeholders that had contributed to the curriculum process. Some of the mentioned environmental foci from the national curriculum listed in the newsletter include:

- A focus in Human and Social Science called 'Environment, resources and development';
- a focus in Natural Science called Life and Living – including issues of diversity and sustainability and interrelationships as a key focus between people and environments;

- In Life Orientation environmental awareness had been highlighted (Lotz, 1996).

The role of environmental justice organisations, as part of the curriculum lobby group, is very significant, as their messages and key ideas have had a shaping influence on the curriculum movement.

> Environmental discourse in South Africa has undergone dramatic change in the 1990s…Organizations like the Environmental Justice Networking Forum (EJNF) have made the links between poverty and ecology an environmental priority in the country and important gains have been made on a wide range of environmental fronts (McDonald, n.d.:1).

- ***The launch of C2005 – illustrating the role of environment***

When C2005 was released, environment featured as one of six phase organisers, which were intended to act as integration features for all grades in all Learning Areas. The phase organisers could help to provide the focus and context for designing teaching and learning processes. Application of the phase organiser 'environment' could also enable many different environmental education processes in different learning programmes (Lotz, Tselane & Wagiet,1998).

Environment was also strongly embedded in some of the Specific Outcomes for example, in Human and Social Science outcomes were included such as:

- Make sound judgements about the development, utilisation and management of natural resources;
- demonstrate an understanding of the interrelationships between society and the natural environment; and
- address social and environmental issues in order to promote development and social justice.

And in Natural Science:

- Demonstrate an understanding of how scientific knowledge and skills contributes to the management, development and utilisation of natural and other resources (DoE, 1997).

Lotz–Sisitka (2002) indicates that this was significant to the dominant environmental education curriculum development discourse, as environmental educators were no longer trying to get environmental education included in the curriculum, environment was there and the task was to interpret it within the context of the curriculum policy.

A study of examples, illustrating environment within C2005, depicts a dominant cross curricula discourse, one where environment was used to organise learning activities and outcomes across different Learning Areas. The example in the *Enviroteach* magazine

'Environmental Education across the curriculum' (du Toit & Olivier, 1997:7) is illustrated in Figure 2.2 below:
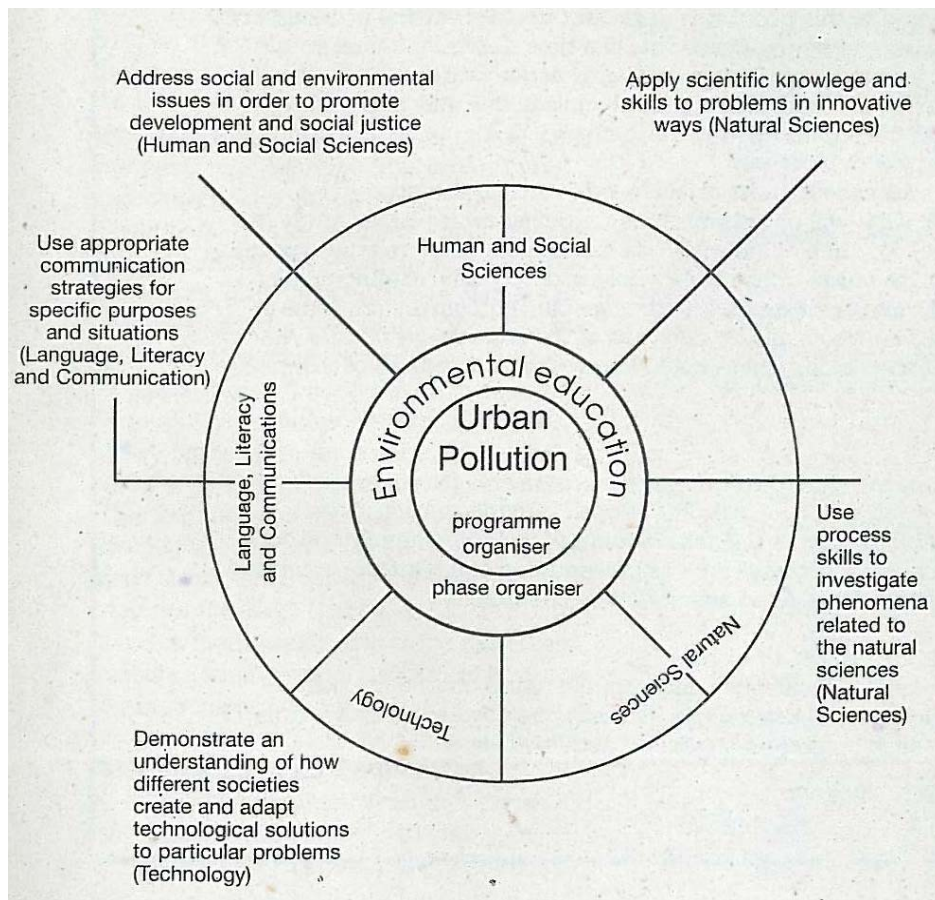
FIGURE 2.2: 'Environmental education across the curriculum' (Du Toit & Olivier, 1997:7)

The example shows Urban Pollution being used as a programme organiser (topic) and environment as the phase organiser, which means that a teacher would teach urban pollution using an environmental 'lens'/focus. This focus would then help teachers' select appropriate outcomes from different Learning Areas.

The example suggests the following outcomes:

- **Natural Sciences**: Apply scientific knowledge and skills to problems in innovative ways. Use process skills to investigate phenomena related to the Natural Sciences.
- **Technology**: 'Demonstrate an understanding of how different societies create and adapt technological solutions to particular problems'.
- **Social Science**: Address social and environmental issues in order to promote development and social justice.

Within this framework teachers would develop teaching and learning activities to enable learners to gain competence in the chosen outcomes. The example thus illustrates how environment was used as an organiser for cross-curricula teaching (across three Learning Areas) and where environmental content is integrated into a learning programme.

The EECI played a crucial recontextualising role in supporting the interpretation and implementation of C2005, and produced an enabling document, which was intended to influence learning programme development, '*Enabling Environmental Education as a cross curricula concern in outcomes based Learning Programmes'* (Janse van Rensburg & Lotz, 1998). This document explored each Learning Area and clarified an environmental approach within the Learning Area. The booklet explores the specific outcomes in each Learning Area how they could be interpreted and contextualised to bring out the environmental focus using different models of learning programme development. The booklet was a useful guide to the environmental education community as well as educators as it assisted them to interpret and '*enviromentalise*' the Specific Outcome.

Some examples illustrated in the EECI booklet include:

- **Economic Management Sciences**:

  SO3: Demonstrate the principles of supply and demand and the practices of production.

  Suggested environmental interpretations:

  Understand concepts of renewable and non – renewable resources in terms of supply and demand; investigate how different economic practice could influence resource utilisation.

- **Life Orientation**

  SO7: Demonstrate the values and attitudes necessary fro a healthy and balanced lifestyle

  Suggested environmental interpretations:

  Understanding how lifestyles are influences by values, and how lifestyles impact on the environment

  (Janse van Rensburg & Lotz, 1998: 22-27)

The above examples illustrate the rich opportunities for integrating environment within C2005.

Lotz–Sisitka (2002) highlights that the outcomes were broad and open–ended and designed to enable local, critical contextual action in school–community contexts. At the time the environmental education community focused their efforts on school-based curriculum development processes using this framework. The EECI Update (August 1999) reported some examples of school based environmental education work across the country including, Hottentots Holland High School; Balvenie Primary and Islamia College. These examples showed schools conducting an audit of their schools, formulating environmental policy statements and using these as curricula contexts for teaching. This reflects an integrationist approach to curriculum development using 'environment as the context' illustrative of a strong cross-curricula discourse.

2.2.2.4 Environment as integral to the Learning Areas – embedded in OPD (2000-present)

This section explores the review of C2005 and the implications of this on the emerging environmental discourse. It highlights the experiences and lessons of the NEEP-GET pilot research and how this process influenced the shaping of the discourse within the revised NCS (R-9).

- *The streamlining of C2005*

The 2000 Curriculum Review highlighted that C2005 was 'strong on integration and weak on conceptual coherence or progression' (Chisholm *et al.*, 2000) and thus recommended that phase organisers be dropped, of which environment was one. However a significant mandate was given by the Council of Education Ministers to the review team undertaking the revising and streamlining of the curriculum, to emphasise environmental education (NEEP-GET, 2001a:2). This necessitated a refocusing and rethinking of how environment would be represented within curriculum.

- *An emerging environmental discourse where environment is integral to Learning Area*

Heeding the challenges posed by the integration across the curriculum approach (see section 2.3.1) to environment, the NEEP-GET Pilot Research (see section 2.3.1) highlighted that the incorporation of environment into the curriculum was vital for meaningful environmental learning and that this included two dimensions, notably:

- Further clarification of the environmental focus in each Learning Area;
- Development of learning support material and units of work which draw on and apply the environmental focus in different Learning Areas, when addressing environmental issues, risks and concerns in local contexts (Lotz-Sisitka & Raven, 2001:101).

The above illustrates a significant shift in the environmental discourse, where environment is 'embedded' or integral to the actual Learning Area content. Drawing on experience in the NEEP-GET pilot research project, the Environmental Education Curriculum Initiative (see section 2.2.3.1.) and the Learning for Sustainability pilot project (see section 2.4.1), a document was developed by the NEEP–GET (see section 2.4.2) to inform the incorporation of an environmental focus in the development of the National Curriculum Statement (NEEP-GET, 2001b).

This NEEP-GET document notes that the development of curriculum statements relevant to environmental learning should be informed by a consideration of:

- The national policy context which explains the scope and significance of the environmental issues formal education has undertaken to address;
- The nature, range and complexity of environmental concerns which General Education and Training should respond to;
- What it means to be 'environmentally literate, competent and committed' and what environmental learning is therefore about; and
- How 'environment' (defined broadly and in depth) is integral to each particular Learning Area.   (NEEP-GET, 2001b)

It also highlights the environmental focus in each Learning Area and suggests potential Learning Outcomes for the environmental focus in each Learning Area.

Based on its main brief to ensure environmental learning is integrated throughout the curriculum for General Education and Training, NEEP-GET facilitated public comment on the NCS (R-9) with a focus on how environment was represented in all Learning Areas in the NCS (R-9). To inform their process, a national workshop was held with prominent Human Rights and Environmental Educators, which helped to jointly clarify the relationship between human rights, a healthy environment and social justice, which could be consistently used in all Learning Areas (NEEP-GET, 2001a:3).

The report also highlights that the extensive public comment of the environmental education community, was framed on the understanding that environmental education within the revised curriculum '*is best approached as a **sensitising and strengthening focus** (not an add on) within each Learning Area'* (NEEP-GET 2001a:3 my emphasis).

- ***The NCS (R-9): A revised curriculum***
The NCS (R-9) notes that:

> The curriculum can play a vital role in creating awareness of the relationship between human rights, a healthy environment, social justice and inclusivity[3] … **all Learning Area Statements** reflect the principles and practices of social justice, respect for the environment and human rights, as defined in the Constitution (DoE, 2002a: 9 my emphasis).

This highlights that environment in the NCS (R-9) is articulated through the first principle illustrated above which is an underlying principle of the curriculum and through the articulation of this principle; environment becomes an integral part of all eight Learning Areas. There are explicit Learning Outcomes and Assessment Standards that articulate the environmental focus in each Learning Area as illustrated in the table below:

Table 2.1: Illustrating the environmental focus within the Learning Areas (NEEP-GET, 2005a:8)

Learning Area	Environmental Focus
Social Science	Emphasizes learners' abilities to identify and analyse a range of environment and development issues
Natural Science	Emphasizes the importance of biodiversity and life support systems
EMS	Emphasizes sustainable development and growth, and calls for approaches to reduce waste and product resources
Arts and Culture	Considers the importance of cultural and natural heritage
Technology	Emphasizes the importance of environmentally friendly designs and encourages learners to investigate technological impacts on the environment.
Life Orientation	Emphasizes environmental health, and makes links between human health and environmental health risks (e.g. water pollution)
Languages	Develops critical literacy skills needed to analyse and address environmental issues and risks
Mathematics	Develops numeracy skills needed to analyse and address environmental issues and risks

The NEEP–GET Project succeeded in strengthening the environmental focus within the South African curriculum policy framework, thus having a significant policy impact (NEEP-GET, 2005a). This focus set a clear patterning framework for future environmental education processes, and represented a significant shift in education curriculum work, particularly the uncoupling of the notion of environmental education as a 'thing' in its own right to the

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[3] This is a foundational principle of the NCS(R-9) and in common practice I referred to it as the first principle.

foregrounding of environment in national curriculum policy (Lotz-Sisitka, 2002). These developments also illustrate the shift that has taken place from seeing environment as a peripheral or marginal issue in the curriculum, to seeing environment as a key focus in educational policy (*ibid*). Using Bernstein's framework described in section 2.2.1, we see that an environmental discourse reflecting the new social and democratic principles of post-apartheid society, is now firmly part of the official Pedagogic Discourse in South Africa.

With these developments a shifting focus in the environmental curriculum discourse (part of the OPD) is visible, from environment being integrated across the Learning Areas to a focus on environment being *integral* to each Learning Area. The NEEP-GET noted that 'an approach to curriculum which emphasizes environment as integral to different Learning Areas has the potential to ensure better quality integration' (NEEP-GET, 2005 b:8).

2.3   LESSONS FROM EARLY RECONTEXTUALISING EXPERIENCES

This section explores the recontextualising experiences of the Learning for Sustainability (LfS) and NEEP projects as two critical agents within the PRF.

2.3.1   Exploring C2005 implementation challenges - Learning for Sustainability and NEEP pilot research

The Learning for Sustainability project (LfS) established in 1997 as a pilot project in teacher professional development, was conducted from within two provincial departments in South Africa. The project aimed to support the implementation of the environmental focus within newly defined formal education curricula. The project piloted an environmental education curriculum development process and a professional development model, which it envisaged would contribute to education transformation and through this process make a contribution to more sustainable living patterns and a healthy environment (du Toit & Squazzin, 2000).

Informed by educational theory that influenced the frameworks of C2005 and the Norms and Standards for Educators policy (DoE, 2000), the LfS project structured its programme on ideas such as learner-centred education; constructivism; critical pedagogy and becoming reflective practitioners. The project could thus be seen as a 'testing ground for the application of contemporary education theory' (Janse van Rensburg, 2000:1). Recognising the socially constructed nature of environmental issues the LfS project therefore adopted a contextually located orientation drawing on socially critical and constructivist theory (Lotz-Sisitka & Janse van Rensburg, 1999).

The project utilised many innovative methodologies such as photo narratives of environments which participating teachers used to clarify and explore their perceptions of context, and encouraged them to critically question appearances and taken for granted practices in local environments. The storyline methodology was used as a means to enable teachers 'to gain a better understanding of environmental issues and risks, and to gain deeper insight into conflicts of interest that arise around environmental issues' (Lotz-Sisitka & Olivier, 2000:86). 'Teachers were encouraged to draw on these contextual explorations in different ways to develop their learning programmes' (Lotz-Sisitka & Olivier, 2000:87).

The assumption was that through interrogation of context teachers could develop a broader understanding of environment (*ibid*: 7). The project supported the perspective that narrow approaches to environmental education, which view environment in terms of biophysical processes, are not adequate to solve complex environmental problems (*ibid*: 9; Lotz-Sisitka, 1999).

Observations reflected in the Formative Monitoring Report (Janse van Rensburg & Lotz, 1999), illustrate that most teachers in the project were competently integrating environmental issues in their learning programme design. Teachers also seemed to have developed a sophisticated understanding of 'environment' and were showing some evidence of a critical understanding of environmental issues (Lotz & Janse van Rensburg, 1999:28). The evaluators noted '… there is a need for increased sophistication in the interpretation of programme organisers and the phase organiser and the relationship between the two. Recognising this, the project tried to develop a framework to scaffold teachers to reflect on their interpretation of environment within the context of Learning Programme Unit design' (ibid: 29).

Du Toit's (1998) reflection (as cited by Lotz 1999:12) highlights that – while the pictures provide a starting point, that starting point is often played out as a superficial content driven engagement with the issue, based on teachers' school/text book knowledge and technicist expectations of educational processes.

The research within the LfS project also raised many pertinent issues and experiences, which were significant to future environmental education curriculum work. These include:

- Despite various activities of exploring context, teachers identified and worked with familiar issues e.g. water, waste; and they reverted back to a biophysical interpretation of environmental issues when they developed learning programmes;

- Teachers struggled to make concrete links back to their learners' context and teachers where unable to explain why the issues used in learning programmes were relevant in that context;
- Despite a theoretical understanding of a holistic view of environment, teachers could identify issues but could not explore them as environmental issues beyond the 'superficial and familiar', which indicated a 'lack of deeper knowledge of environmental issues and ... a lack of clarity of how environmental issues relate to Learning Area knowledge'.

Thus despite the input of the project, the design of environmental activities did not further the aims of the Learning Area (Lotz & Janse van Rensburg, 1999; Lotz-Sisitka & Olivier 2000:84).

From a careful study of the environment work within EECI and LfS, it is evident that despite several intensive, innovative initiatives to foster more open-ended, contextually responsive learning processes, very little innovative work went beyond the professional development settings, so it never really materialised as school based curriculum development interactions. Where curriculum design and interpretation was attempted in classrooms the changes were often superficial (Lotz-Sisitka, 2002:108).

The above challenges illustrate that despite huge strides in policy revision and small 'pockets of innovation' in random individual schools, there was little significant change in the practice of environmental learning in classrooms on a broad scale.

These observations were verified in the NEEP-GET pilot research (Lotz-Sisitka & Raven 2001), where teachers, in adopting the integration across the curriculum approach to environment lost 'clear focus on environment in the Learning Area and tended to mis–interpret the Learning Area focus when working with environmental issues or themes, which lead to activities with little or no substance or focus' (Lotz Sisitka & Raven, 2001: 68). Olivitt (2005) notes that without concretely linking activities to the Learning Outcomes and understanding why the curriculum links were being made, and how they related to the learning programmes' environmental focus, the curriculum work still promotes the idea that environmental activities occur 'outside of' the regular curriculum (Olivitt, 2005:22).

These findings were also supported by research from various other educationists outside the environmental education community. Reflecting on the broader curriculum implementation process, Malcolm (1999:110), was one of many that sounded early alarm bells, warning that Outcomes Based Education (OBE) was a high-risk voyage of faith 'in a country where

teachers have a low knowledge base (in relation to what is required)'. Jansen (1999) argued that OBE is based on flawed assumptions about what happens inside schools, how classrooms are organised and what type of teachers exist with the system.

Lotz-Sisitka (2002:13) drawing on Harley and Parker (1999:195) outlined what they described as a 'mis-match between policy and society'. South African schools and society were historically organized primarily on the basis of mechanical solidarity whereas the transformation process (Constitution and C2005) reflects a desired unfamiliar organizational framework of organic solidarity. This analysis helps to illuminate the difficulties experienced by educators in localized interpretations of curriculum (*ibid*). The strong participatory tendency in the fledgling democracy, fuelled by critical ideology prominent in environment education failed to empower teachers as curriculum developers (*ibid*). Harley and Wedekind (2003) shed further light on this issue with their notion of discontinuity, which plagued previously disadvantaged schools – discontinuity between their previous practice, their symbolic capital and the embedded vision of the new curriculum.

The Review Committee established by the Minister to review the curriculum in 2000 captured these and other challenges:

> The combination of changes occurring at an extraordinary pace exerted severe pressure on the system. Implementation was not always carefully thought through, properly piloted or resourced and enormous stresses and strains were consequently placed on already over-burdened principals and teachers in widely divergent educational contexts (Chisholm *et al.*, 2000).

2.3.2. The Formation of NEEP-GET

2.3.2.1 NEEP-GET's role in streamlining National Policy

In a parallel process to the curriculum rollout, the Ministry of Education established the National Environmental Education Project for General Education and Training (NEEP-GET) in 2000 to strengthen environmental learning in the South African curriculum. A key objective of the project was to build capacity for environmental learning in the South African education system. The project worked with curriculum support staff (subject advisors / teaching and learning facilitators), with teachers and with partners involved in supporting environmental learning in schools (NEEP-GET, 2004b:1).

As a first task the NEEP-GET pilot research was thus undertaken to contribute to the re-orientation of environmental education (see section 2.2.4.2) within the context of the changing curriculum (Lotz-Sistika & Raven, 2001). The project also took the responsibility of

facilitating public comment on the NCS in all nine provinces with a focus on Environment as integral to all Learning Areas. A national workshop of prominent environmental educators and human rights practitioners also formed part of this public comment process (NEEP-GET, 2001a:3).

The above points highlight the role partners and other practitioners played in commenting on and thus shaping the national curriculum policy.

2.3.2.2 Lessons learnt from NEEP-GET

The NEEP-GET project found that it was not enough to have an environmental focus in the Learning Areas, initiatives were needed to support curriculum staff and teachers to 'make sense of' and to 'apply' this focus in their day to day curriculum work (NEEP-GET, 2005a:8). 'Making sense of' illustrates a 'need to support educators to develop foundational knowledge of environmental issues and risks' as educators often 'resort to old knowledge' when working with environmental issues (NEEP-GET, 2005b: 7). This lack of foundational knowledge on environmental issues also impacted on the scope and depth of outcome interpretation and ultimately the Learning Outcomes of learners. (NEEP-GET, 2005b: 9). These can be linked to recommendations from Mbambisa (2005:119) who stated that 'subject advisors do not appear to be confident in dealing with environmental issues, and it seems that more effort is needed to unpack the environmental focus in the Learning Areas with subject advisors and teachers'. The NEEP-GET project also found that, to develop a complex holistic understanding of environment, educators needed support to understand environmental issues and risks (from local, national and global perspectives), and from within the human rights /social justice framework (NEEP-GET, 2005b: 5).

Within the NEEP-GET project and the National Department training (foundation and intermediate phase) it was observed that there was an inclination to fragment the first principle with a 'tendency to treat them as separate principles rather than more emphasis being placed on the **relationship** between human rights, social justice and a healthy environment' (NEEP-GET, 2005b: 5).

The project found that a focus on an understanding of the principle statement alone does not 'enable learning actions in school/community contexts'. The principle needs to be articulated in lesson plans, through interpreting the principle statement in the context of the Learning Outcomes, learning context and assessment standards (NEEP-GET, 2005b: 5).

The project highlighted that an in-depth focus on teaching and learning processes, learner–centred classroom practices and opportunities to explore methods was essential for any change in teaching practice to occur (NEEP-GET, 2005b: 8).

Evidence in the project also highlighted that using school environmental policies assisted schools to clarify school and community priorities for environmental learning; make school community links; establish links between whole school development and curriculum implementation; and assisted with development of relevant, contextually situated learning programmes.

2.3.2.3 Recommendations from NEEP-GET

From the extensive experiences of the NEEP-GET project many relevant recommendations were made which can inform future curriculum work such as:

- Strengthening understandings of environmental issues, 'much effort needs to go into strengthening interpretations and understandings of the environmental focus in the different Learning Areas at provincial and national levels ... in the ongoing NCS (R-9) training programmes and follow-up teacher development and materials development programmes' (NEEP-GET, 2005c: 9);
- Environmental learning is a new dimension (new knowledge area) of curriculum work for teachers, and the environmental focus within the Learning Areas needs to be further supported in teacher development programmes. Strategies to ensure that learners are not exposed to superficial and repetitive interpretations of environmental issues and trends are needed (NEEP-GET, 2005c:13). Thus the recommended starting point should be 'Learning Area in context' (NEEP-GET, 2005b: 4);
- Curriculum interpretation guideline documents can be utilised to strengthen a more in-depth understanding of the environmental focus in the Learning Areas within the Learning Area committees and within teacher development programmes.

These recontextualising processes (in LfS and NEEP-GET) have identified a number of key issues associated with the way in which discourse produced in the ORF is being appropriated, transformed and recontextualised in the PRF and in the field of reproduction. They also reveal that recontextualising new discourses is not a simple matter.

2.4   THE INTENDED CURRICULUM AND THE REAL CURRICULUM

Although significant progress has been made in implementing the country's new agenda's for cultural and social transformation in the curriculum at a structural and policy level, Lotz-Sisitka notes that the:

> … process of enabling associated changes in schools and classrooms has not been without its problems, as many teachers have still not received adequate orientation to the curriculum, and few subject advisors and trainers have had experience of addressing environment and development issues in any depth. This directly affects the quality of the learning experiences of learners, and the learning outcomes themselves (Lotz-Sisitka, 2005:2).

'The disjuncture between the objectives and aspirations for learners embedded in the 'intended' curriculum (as stated in educational policy) and the 'real' curriculum (as experienced by teachers and learners) is high on the agenda of educational researchers and practitioners' (Lotz-Sisitka, 2005:3). These findings were supported by research undertaken by the Mpumalanga Secondary Science Initiative (MSSI) which raised concerns for the alignment of policy and practice and argued that learners performance will be little affected in relation to the intended curriculum policy if what happens in classrooms (real curriculum) is poorly aligned with the intended policy (Hattingh, Rogan, Aldous, Howie & Venter, 2005:23). They also emphasise that the alignment between the intended and the real curriculum needs to be carefully considered when engaging in recontextualising processes such as designing lessons and assessment.

2.5   CONCLUSION

To fully understand the broad overview of the context within which research has been set; this chapter has outlined the historicity of the environmental discourse with National Curriculum in South Africa. This socio-historical review has enabled a reflection of the contextual influences on the emerging environmental discourse and its production in the ORF.

From earlier processes of lobbying for environmental discourse to become part of the OPD in the ORF, a shift is visible in discourse from the policy development arena to the policy implementation arena. Various recontextualising processes have emerged in response to the introduction of a new discourse in the OPD. Efforts appear to have focussed heavily on professional development of educators and on engagement with lesson planning and pedagogy with the new national curriculum, which has recently been revised. The curriculum

revision reveals that discourses (such as the environmental discourse) in the OPD are not necessarily fixed or stable, but that they can shift and change.

This study is trying to seek a deeper understanding of the dynamics of recontextualising the (changed) environmental discourse that has emerged over a ten year period as being integral to the OPD. To understand how these policy interpretations (recontextualising processes) unfold, I have focused on three cases within this study.

In the next chapter I discuss the methodology of the study in more depth.

CHAPTER 3: RESEARCH DESIGN DECISIONS

3.1   INTRODUCTION

Drawing from the purpose of this research (see section 1.4), this chapter acts as a bridge between the theoretical discussions of the previous chapter and the findings emanating from this research. It thus outlines the research design decisions that were made to guide the conceptualisation and design of a research process for studying the recontextualising of the environmental discourse in the NCS (R-9). Within this chapter, I will outline the research methodology and processes used to generate data relevant to the research focus, its aim and goals. Reflections on the data generation process, the process of data analysis, interpretation and the considerations around issues of validity and trustworthiness are also discussed in this chapter.

3.2   RESEARCH METHODOLOGY

The research methodology guiding this study is framed by an interpretive orientation to research, which recognises the importance of people's subjective experiences and its sensitivity to context (Terre Blanche & Kelly 1990, as cited by Rousseau 2003). Taking this further Janse van Rensberg (2001b) highlights that interpretivist researchers are interested in the meaning that people make of phenomena and they regard people as agents who take meaningful, reflective actions. She also elaborates that drawing on a Hegelian view, interpretive researchers believe meaning (and therefore knowledge) is constructed by individuals in interaction with each other.

As the key underlying intention in this research is to understand how practitioners are using and interpreting the environmental discourse within the NCS (R-9), it can be strongly linked to Stevenson's (2004) definition of interpretive studies, in which he highlights that interpretive studies enable in-depth information to be revealed about a specific context as well as the intentions and processes surrounding, for example, the implementation of an innovative policy change (Stevenson, 2004:43). Connole (1998) highlights that the interpretive perspective places primary emphasis on the process of understanding and from this the researcher can identify patterns of meaning.

In framing this study to seek understanding of how pedagogic discourse is actually created I acknowledge Cohen, Manion and Morrison (2000:22) who note that:

- Situations are fluid and changing rather than fixed and events are richly affected by context;
- There are multiple interpretations of events and situations; and
- Reality is multi-layered and complex.

Recognising these complexities, I have tried to share my interpretations with research participants and have tried to use multiple sources of data within each case to enable a more realistic, holistic perspective of emerging discursive practice (see section 3. 7).

In seeking to understand the meanings people ascribe to the environmental discourse in the NCS (R-9) within the three different case sites (see section 1.5), this research intends to inform future environmental education professional development and curriculum work and inform practice within the National Department of Education regarding the implementation of the NCS (R-9). I thus see a strong link with the research intention and the interpretive orientation. In line with an interpretive orientation the research intention also displays a practical knowledge interest as described by Cohen *et al.* (2000) and Habermas (1972 as cited in Grundy 1987:14).

The practical knowledge interest in this study is to develop a 'deeper understanding' of interpretations of the environmental discourse in the NCS (R-9) through interactions with participants and active data generation within the three cases. Cohen *et al.*, (2000:29) link Habermas's practical knowledge interest to interpretivism as the research methodology seeks to 'clarify, understand and interpret' situations within contexts.

Bernstein (1974 as cited by Cohen *et al.*, 2000), cautions that the very process whereby one interprets and defines a situation is itself a product of the circumstance in which one is placed. An important factor to consider in research is the power of others to impose their own definitions of situations upon participants. Stevenson (2004) further cautions that as interpretive researchers also decide what parts of the particular stories will be told their own personal experiences and understandings shape the study in important ways. I acknowledge these warnings and have tried to be very thorough and have built validity checks into the study (see section 3.7) but have also consciously tried not to impose my personal views and interests on the participants, on the data analysis or in the presentation of findings.

3.3 DESCRIPTION OF THE RESEARCH METHOD: CASE STUDY APPROACH

A case study is an ideal methodology when a holistic in-depth investigation is needed (Feagin, Orum & Sjoberg, 1991 as cited by Tellis, 1997:1). Taking this further, Yin (1994:13) outlines that a case study is 'an empirical enquiry that investigates a contemporary phenomenon within its real life context, especially when the boundaries between phenomenon and context are not too clearly defined'. This makes the people, the place and the time essential components of the research as it seeks to uncover real contextual conditions within which phenomenon play out. The case study approach thus allows the researcher to 'go deep', to learn what works and what does not so that they are able to answer questions about how and why (Corcoran ,Walker & Wals 2004:10). As this method enables rich descriptive information to be generated that provides insight into how policy was being recontextualised it was appropriate for this study.

Stenhouse (1985, as cited by Cohen *et al.* 2000), identified four types of case studies, ethnographic, action research, evaluative and educational, while Bassey (1999), identified three types, theory seeking, story telling and picture drawing and evaluative case studies. Drawing from the intention of this study it is constructed as an educational case study closely aligned with Bassey's story telling and picture drawing case study type, which is interested in narrative stories and descriptive accounts of educational events (Bassey, 1999). Stenhouse 1985 (as cited by Corcoran *et al.,* 2004:11), also emphasised that an educational case study should 'seek to enrich an understanding of educational action', which can be directly linked to the intentions of this research (see section 1.4).

Stevenson (2004:46) highlights that findings from case study research can serve as heuristics or analytical constructs that can assist researchers in grasping descriptive and explanatory elements of their work. Furthermore he expands that interpretivist researchers acknowledge that these constructs are based solely on the data and evidence derived from their studied cases, and that they cannot make generalizations to other settings. Thus the boundaries of case study research are set in a time and place. Through providing rich descriptions, researchers could enable 'transferability' of findings dependent on context and purpose (Lincoln & Guba, 1985 as cited by Stevenson 2004:46).

3.4 DATA GENERATION TECHNIQUES

The decisions on data generation techniques were made with a focus on the research goals as shown in the table below:

Table 3.1: Research goals and data generation techniques

RESEARCH GOAL	DATA GENERATION TECHNIQUES
Investigate use and changes to environmental discourse within teacher training programme preparation in ORF (National Gr7 Training).	This was investigated through analysis of Learning Area statements, document analysis of 3 sets of Grade 7 training materials; interviews with three Learning Area specialists
Investigate use and changes to environmental discourse in teacher training workshop in PRF (NGO).	This was investigated through a focus group interview with education staff at Delta Environmental Centre, analysis of their school based training material and resources and observation of a teacher workshop.
Investigate use and changes to environmental discourse in field of reproduction (school lesson).	Observation of two lessons at a school, interview with the educator and analysis of lesson plan and learners work for observed lessons.

Preliminary data analysis was undertaken soon after data from each source was generated; this informed the process for the successive data generation processes. This facilitated a process of continuous progressive focussing during the research process.

In the next section I will provide a more in-depth discussion on the use of the different data generation techniques utilised in this research.

3.4.1   Focus group interviews

A focus group interview is a form of group interview (Cohen *et al.*, 2000), where participants are selected because they have certain relevance to the topic of the research (Kreuger & Casey, 2000). In this research I conducted one focus group interview within Case 2.

At Delta Environmental Centre there are five staff members that work with teacher development, I therefore decided to interview them as a focus group, so I could generate diverse perspectives and varied experiences on DEC's teacher training programme. Morgan (1998) as cited by Cohen *et al.*, (2000:288) suggests between four to twelve as an appropriate number for a focus group.

I acknowledged Kreuger and Casey's (2000) caution that grouping people that regularly interact and work together may inhibit disclosure. However within this focus group the

questions and topic of the research was not sensitive and involved what participants thought about curriculum policy and how the policy was influencing their collective work as a teacher development team. As these were not contentious issues, I did not foresee a problem and used the team as a focus group. To encourage discussion and critical thought I e-mailed people some guideline questions beforehand (see Annexure A), as one can enable disclosure when people feel comfortable and the environment is permissive and non-judgmental (Kreuger & Casey, 2000) (see Annexure B for analytic memo detailing some of the discussion).

Kreuger and Casey (2000:11) highlight that 'focus groups present a more natural environment than that of an individual interview because participants are influencing and influenced by others – just as they are in life'.

3.4.2 Observation

Drawing from the qualitative paradigm that this research is framed within, my observations were framed as naturalistic observations, done in their natural context (Rhodes University, 2004). Observation data allows the researcher to gather 'live data from live situations' (Cohen & Manion, 2000:305). It allows the researcher to enter and understand a situation that is being described. Observation data permits the researcher to understand to an extent not entirely possible using only the insights of others obtained through interviews (Patton, 2002).

In case 1, I intended to be a 'participant as observer', as this formed part of my work task (Cohen *et al.*, 2000), it was, however, extremely difficult to continuously play the role as researcher within the process as I had to continuously focus on managing the tasks and work, thus I was unable to document the process as intended. My role as participant within the process still provided vital insights and contextual knowledge that have assisted me to have an 'insiders perspective' (Rhodes University, 2004) when I interpret and analyse data that was generated from the document analysis of the training material.

In case 2 and 3 I had less extensive contact with the group and played a role as 'observer-as-participant' (Cohen *et al.*, 2000) although observing played a role as participant during groupwork. In case 2, I observed a teacher workshop. Although the workshop was one in a series of four, the rest of which I unfortunately could not attend due to time constraints, the workshop observation helped to give me deeper insights into the work that DEC is doing. My observation was focused on the trainer, what she said, what she did, the activities she had planned and her materials.

In case 3, I had intended to observe a lesson from a school that attended the Delta workshop, I reconsidered this and instead chose a school that knew me, and where I already had a relationship with the teachers as I felt that in a short study such as this it was not possible for me to develop trusting relationships with the teacher. Thus, I chose Mashiwase Primary in Umbumbulu. I observed two Technology lessons in the same teacher's grade six classroom as I felt this gave me better continuity and the learners were used to me so I was less of an obtrusive influence in the classroom. One lesson involved learners in the classroom planning and designing, and gave me the opportunity to see how the teacher and learners function together, and the second lesson involved learners independently working outside the classroom actively involved in making the brooms they had designed. Thus, the two lessons showed the teacher playing different roles. As my observation focused on the teacher, what he was saying, doing, how he had structured activities, what resources he was using in his lesson, it was useful to see him in different roles. I also video–taped the lessons to support my observations (See Annexure C for observation notes).

3.4.3   Document analysis

As this study focused on the meanings ascribed to texts, document analysis formed a part of the data generation process. My work position gave me access to most of the documents I utilised, which were all 'primary sources of information' (Irwin, 2001). Primary sources are documents that are original to the issue being researched, and have direct physical relationship with the events being studied (Cohen & Manion, 2004:161). Working with primary sources also helps to provide contextual information, which is essential to establish meaning in qualitative research (Irwin, 2001).   Irwin (2001) highlights that when using documents for research, two important things to consider are whether they are trustworthy (authentic) and accurate. As the documents I used were primary sources within each case, this was not a concern for me.

I used the analysis of the NCS (R-9) documents as a tool to plan the interviews and observations in the study and to get a deeper understanding of what the environmental discourse within the RNCS is, which guided the rest of the study.

In case 1, I analysed the national training documents for the Grade 7 training. I had originally intended to analyse the complete training pack, but when completed the manual was 1200 pages as it contained a generic section, an assessment section and sections on each Learning Area. It was impossible for me to analyse the complete manual and I thus decided to focus on two Learning Areas: Technology and Life Orientation and the Generic section, which provided the overview to the training and curriculum (See Annexure D). This analysis

provided valuable insights, which I then used to frame the interviews with Learning Area coordinators.

In case 2, I analysed the workshop file (minutes, handouts and reflection of staff) from DEC, which gave me further insights into the aspects that were discussed during the focus group interview (see Annexure B). Due to the wide spectrum of DEC's work I chose to focus on one individual teacher trainer, and all the school visits and workshops that he had done over a six month period with five schools. Using the reports, I tried to reconstruct the sequence of the progressive meetings analysing the processes each school went through, how their training programme was conceptualised and how DEC was working with the environmental discourse in the curriculum within their work with each school (see Annexure E).

In case 3, I analysed the teacher's lesson plan and some of the learners' work, this provided deeper insight into the lesson observations and the teacher's thoughts and intentionality in framing the lesson. It provided important insight into how the teacher interpreted the Learning Outcomes and how he made links with other Learning Areas and content.

3.4.4 Semi – structured interviews

I opted to utilise semi-structured interviews, 'where a schedule is prepared but is sufficiently open-ended to enable contents to be re-ordered' (Cohen & Manion, 2004:146). Semi-structured interviews enable participants to project their own ways of defining the world. It permits flexibility rather than fixity of sequence of discussions and it also enables participants to raise and pursue issues and matters that might not have been included in a structured schedule (Denzin, 1970 & Silverman, 1993 as cited by Cohen *et al.,* 2000).

Thus in constructing my interview schedule I used mainly open-ended items, which supplied a frame of reference for respondents' answers but put minimum restraint on the answers and their expressions (see Annexure F). Open-ended items also allow for probing, finding out more about what the respondent believes and allow for unanticipated answers or responses (Rhodes University, 2004).

Wengraf (2001:8), highlights that we can use interviews to learn more about the discourse which is the 'mode of talk', and thus learn more about interviewees 'discursive production and performances'.

In Case 1, the interviews were used to deepen the document analysis, and provide further insights into factors that affect the recontextualising within the National Grade 7 Training. I

conducted three interviews with people who had worked as writers during the development of the training materials that were analysed (see Annexure G). It was very difficult to question interviewees directly about their Learning Area materials, as these were products they had worked on or contributed to. I thus had to be very sensitive when asking critical questions. The interviews provided important insight into the discursive practice of staff within the ORF.

In Case 3, the interviews were utilised to deepen the observations of the teacher's lesson, it thus provided further insights into the teacher's intentionality and how he thought about and framed his teaching within his Learning Area (see Annexure H).

3.5   ORGANISATION OF THE DATA

Due to the scope of this study, very careful data management was necessary. The collection of data was thus 'tightly defined, structured and researcher driven' as advised by Huberman and Miles (1994:429).

Organisation of data is an integral part of data analysis (Arksey & Knight 1999), with the three case studies in this research, it was essential that it be systematically and coherently organised to avoid the data being 'miscoded, mislabelled, mis-liked and mislaid' (Wolfe 1992 as cited by Huberman & Miles 1994).

I kept three separate case files and all data related to each case was correctly filed.

In Case 1, the insights and thoughts derived from the document analysis of the training materials were captured in analytic memos (see Annexure D). The interviews were transcribed from the raw data and kept in computer files (see Annexure G).

In Case 2, the focus group interview audiotapes were catalogued accordingly and these were carefully transcribed. Interview transcripts were stored in computer files (see Annexure B). Observation notes and workshop handouts were studied and kept in the Case 2 file. The insights from the document analysis of the workshop file were captured in analytic memos (see Annexure E).

In Case 3, observation notes (see Annexure C) were reviewed with a watching of the videotape of the teachers' lesson and a summary was then typed up. The transcripts of the teacher interview were typed and kept in computer files (see Annexure H).

A carefully structured storage and retrieval system made the organisation of data within this study a manageable task.

3.6   DATA ANALYSIS

Analysis within all three cases followed a 'within case analysis' approach that 'focused on two levels of understanding, description and explanation' of what was going on within each case story (Huberman & Miles 1994:432).

The interpretation of data and analysis categories within this study was framed using Bernstein's framework of pedagogic discourse (see section 2.2.1.). Within this study, I used Bernstein's framework as a conceptual construct to try to understand how the environmental discourse in the NCS (R-9) is de-located from the field of production and relocated in the recontextualising field. In this process, Bernstein (2000) suggests that the discourse undergoes selective appropriation as it is de-located and in the re-location the original discourse can undergo ideological transformation (see section 2.2.1. for full discussion). In trying to analyse the data and follow the continuity, changes and discontinuities in the discourse, I used evidence of *selective appropriation* and evidence of *ideological transformation* as two *a priori* categories to start the analysis process. Using these two *a priori* categories as a frame, I attempted to code all data within each data source in the three cases. I decided to keep the data sources separate to highlight clearly the discursive practice emerging within each data source. However, during the analysis process other sub categories emerged from the data and the analysis process was modified accordingly. Thus the data analysis followed a *guided analysis* (see figure 3.1) approach to data interpretation.

Hypothesis Generating	⟵───────────────⟶		Hypothesis testing
Grounded Analysis	**Negotiated Analysis**	**Guided Analysis**	**A Priori Analysis**
Categories and analysis emerge from the data with minimal *a priori* expectation	Categories and analysis developed by the researcher with the input of the participants	Categories developed *a priori*: subsequent analysis guided and categories modified through interaction with the data.	Categories determined in advance of the data collection: analysis according to those categories

FIGURE 3.1: Approaches to analysis (adapted from Freeman (1986) as cited in Samuel, 2002)

This approach allowed me to use the two *a priori* categories (see above) and allowed for emerging sub-categories during the process, which were also coded. The table below illustrates this first layer of data analysis:

Table 3.2: A summary of a priori categories and emerging sub categories

Case	Data source	Selective Appropriation	Ideological Transformation
Grade 7 Training Material in the ORF	**The Texts**	**Sub-categories**: ▪ Stating elements of policy discourse without meaningful engagement ▪ Narrowing of the Official Policy Discourse ▪ Gap between what is said and done	No specific sub categories
	The Interviews	No specific sub categories	No specific sub categories
DEC EE NGO working in the PRF	**Focus Group Interview**	**Sub-categories** ▪ Interpretations of how environment is represented in policy ▪ Approaches to working with the NCS (R-9) policy ▪ Broad whole school approach to environment in teacher training ▪ Challenges to the pedagogising of environment with curriculum within teacher training programme	No specific sub categories
	Workshop file	No specific sub categories	No specific sub categories
	Workshop Observation	No specific sub categories	
School (Field of reproduction)	**Classroom observation**	No specific sub categories	
	Analysis of lesson plan and learners work	No specific sub categories	
	Interview with educator	No specific sub categories	

As can be seen in table 3.2. above, the data sources were kept separately within each case. During the analysis process, the data sources were coded, marked and filed. The table 3.3.below, is a summary of the codes used within each case:

Table 3.3: A summary of the codes used and their explanations

CASE	CODE	EXPLANATION	DATES
1	C1In1	Case 1, interview 1	15 September 2005
	C1In2	Case 1, interview 2	27 September 2005
	C1In3	Case 1, interview 3	27 September 2005
2	FP1, P2, FP3, FP4	Focus group participants 1,2,3,4.	11 August 2005
	WRt1	Workshop report Phumula	
	WRt2	Workshop report Realabhola	
	WRt3	Workshop report Sonqobo	
	WRt4	Workshop report Shukumani	
	WRt5	Workshop report Rondebult	
	WR1	Workshop resource, Ecological footprint questionnaire	
	WR2	Workshop resource, Environmental Learning Assessment sheet	
	WR3	Workshop resource, energy audit	
	WR4	Workshop resource, Learning Area tables	
	WR5	Workshop resource, Project planning sheet	
	C2LO	Case 2, lesson observation	20-21September 2005
3	C3InT	Case 3, interview teacher	23 September 2005
	LWL1, LWL2	Learners' work lesson 1 and 2	
	ObL1, ObL2	Lesson observation, lesson 1 and 2	
	C3LP	Case 3, lesson plan	

To assist with the processing and management of the data, a set of analytic memos was developed. These are listed below in table 3.4.

Table 3.4: A summary of the analytic memos developed

Analytic Memo	Topic
Analytic memo 1	Recontextualising the environmental discourse in Technology
Analytic memo 2	Recontextualising the environmental discourse in Life Orientation
Analytic memo 3	Recontextualising the environmental discourse in Generic material
Analytic memo 4	Recontextualising the environmental discourse in DEC focus group interview
Analytic memo 5	Recontextualising the environmental discourse in DEC workshop file.

3.7   VALIDITY AND TRUSTWORTHINESS

Within this research I used, 'methodological coherence' as an important verification strategy to 'ensure congruence between the research question and the components of the method'. This 'demands that the question match the method, which matches the data and the analytic procedures' (Morse, Barret, Mayan, Olson and Spiers 2002:12). As this research focused on how discourse was being recontextualised, the chosen methods tried to ensure that the environmental discourse was represented in textual practice, discursive practice and social practice over the scope of methods chosen so that it could adequately answer the research question.

I acknowledge the privileged role the researcher has within interpretive research, as meaning is the basis of data and the integrity of findings depend on the social, linguistic and cognitive skills of the researcher (Connole, 1998). Therefore, in each case site I tried to use methodological triangulation by using multiple techniques (interviews; document analysis, observations) to generate more than one form of data so that I was able to gauge a more holistic picture of discursive practice. Lynch (1996 as cited by Murray, 2004) describes triangulating as gathering, reconciling, and explaining of data from several sources and /or from different data gathering techniques.

Drawing on Maxwell's (1992:285) categorisation of five types of validity, descriptive, interpretive, theoretical, generalizability, and evaluative validity. I applied descriptive validity by ensuring that I always provided factual, accurate descriptions of all data. During all fieldwork I tried to 'record as accurately as possible and in precisely their words' (Wolcott

1990, as cited by Maxwell, 1992:286). Informed by Maxwell's ideas on interpretive validity, I endeavoured to capture data that reflects the 'participants' perspectives, and is … derived to a substantial extent from the participants own language, … as interpretative accounts are grounded in the language of the people studied' (Maxwell, 1992:289). Maxwell's idea of interpretive validity can be closely linked to Geertz (1973 as cited by Cohen *et al.*, 2000:137) and his account of 'thick description of the contextualised behaviours'.

3.8   RESEARCH ETHICS

Drawing on Bassey's (1999:74) construct of respect for democracy; respect for truth; and respect for persons as three key area of research ethics I framed my ethical considerations for this study.

In the three cases consent was sought and access negotiated at different levels. In Case 1, consent was sought from senior management to utilise training documents in research. However during the production of the documents provincial writers were unaware that the completed training documents would be analysed. Information was sought and dedicated time set with each coordinator that was interviewed. In Case 2, consent was sought from management of DEC and I met with all staff that were going to participate in the research beforehand to explain the research, purpose and aims. Thus, all participants at all times were aware of the full scope of the research. I also, after meeting to brief them, e-mailed them suggested questions for the focus group interview. After interview transcriptions and preliminary analysis of workshop material, I again communicated with DEC staff to clarify and check my interpretations. In Case 3, permission was sought telephonically from senior provincial management to conduct research at school level. Permission was sought from the school principal and I made a preliminary trip to the school to explain and discuss with the educator all aspects of the research and arrange for the lesson observations to be video taped. After completing the analysis of data from the observations, I again clarified details with the educator telephonically. Thus, I endeavoured to treat all research participants fairly, with respect and honesty. I negotiated access and ensured that participants were clear and sure about the research process.

3.9   REFLECTIONS ON METHODS USED

Throughout the design of this study, I was fully aware of the limited scope of this study, and I tried to make some reflective choices to manage the scope of the study, one of which was to limit the extent of the analysis in certain ways while covering the three case sites. I am fully aware that each case individually could have served as an in-depth case study presenting

more opportunity for prolonged long-term critical engagement. I, however, decided to explore the methodology, in particular the use of some of Bernstein's concepts over the three fields (see section 2.2.1) to enable a more comprehensive picture of the potential of this type of analysis for curriculum research in environmental education, which I believe could be pursued in larger studies of this nature. I see this research enterprise as part of a seeking of 'new tools' for doing curriculum research in environmental education in South Africa.

My decision to keep data sources separate, although done with the intention of being true to the actual discursive practice within each source, was cumbersome to work with and on reflection, could have reduced the opportunity for triangulation.

3.10   CONCLUSION

Moving from a research curiosity, to framing a study is always a frantic journey. In trying to capture the journey, this chapter has outlined the research design decisions that were made in this study. Framed within an interpretative orientation, it highlights the methods chosen within each case study, and the unfolding research process within each study. The next chapter reports on some of the emerging findings within the three case stories.

CHAPTER 4: STORIES OF RECONTEXTUALISATION

4.1   INTRODUCTION

Cleo Cherryholmes (1993) wrote that research findings tell stories. This chapter presents the findings and tells three recontextualising stories, showing how a discourse is appropriated and transferred in three different educational sites.

The chapter begins by presenting a brief content analysis of the environmental discourse in the ORF as examined in the Overview and two Learning Areas Statements of the NCS (R-9), (DoE, 2002a,b,c). Using Bernstein's framework (see section 2.2.1.) as a conceptual construct, I examined the recontextualisation of the environmental discourse through following the de-location and relocation of the discourse from the field of production to the recontextualising field. Through this process of tracing the continuity, changes and discontinuities in the discourse, I identified how the discourse was selectively appropriated from the field of production and how the discourse was ideologically transformed within the recontextualising field. These appropriations and ideological transformations were then used as conceptual constructs to frame each case story.

To allow for a detailed reporting of the evidence of selective appropriation and ideological transformation of the environmental discourse, I report each of the data sources separately.

4.2   ORF: THE DISCOURSE IN THE NCS (R-9) TEXTS

The starting point for this research was an analysis of the National Curriculum Statement (NCS) (R-9) policy documents. This analysis focused on the Life Orientation and Technology Learning Area Statements and the Overview Statements of the NCS (R-9), (DoE, 2002a,b, c). The analysis of the NCS (R-9) curriculum statements helped me to clarify and identify the environmental discourse within the NCS (R-9) to guide interpretation in the rest of the study.

4.2.1   The NCS (R-9) Overview Statement

Aligning itself to the Constitution, the NCS (R-9) aims to '…establish a society based on democratic values, social justice and fundamental human rights' (DoE, 2002a:9). This is encapsulated further in the vision of the curriculum, which shows a '…life-long learner with a respect for the environment and the ability to participate in society as a critical and active citizen' (DoE, 2002a:9). To attain this vision, one of the foundational principles of the NCS (R-9) states, that the curriculum will '… play a vital role in creating awareness of *the*

relationship between human rights, a healthy environment, social justice and inclusivity'[4] (DoE, 2002a:9 my emphasis). It also highlights that the NCS (R-9) has '… tried to ensure that all Learning Area Statements reflect the principles and practices of social justice, respect for the environment and human rights as defined in the Constitution' (DoE, 2002a:9). Thus at a policy level the environmental discourse in the orientation to the NCS reflects a strong human rights, social justice and sustainability focus which accords with the values of the Constitution and the values in the 'Values in Education Manifesto' of the National Department of Education (DoE, 2001b).

4.2.2 The Life Orientation Learning Area Statement

The Life Orientation Learning Area Statement reflects a focus on environment in its introduction to the Learning Area. In articulating the purpose and unique features of the Learning Area, the statement highlights that it: 'Enables learners to make informed, morally responsible and accountable decisions about their health and the environment', and it '…enables learners to make informed decisions about personal, community and environmental health promotion' (DoE, 2002b:4). This reflects an environmental discourse that seeks a holistic approach to the development of the learner as an individual within a society, capable of making informed decisions, knowing their rights and individual and social responsibilities.

A careful analysis of the Learning Outcomes and Assessment Standards gives a clearer indication of the minimum requirements expected for learner achievement in Life Orientation. Within Learning Outcome 1, which is the 'Health Promotion' Learning Outcome, some of the assessment standards learners are expected to achieve competence in are:

- Evaluate actions to address an environmental health problem;
- Plan an action in which laws and policies for protecting environmental health are applied to address an environmental health issue;
- Shows evidence of informed, responsible decision making about health and safety; and
- Develop and implement an environmental health programme (DoE, 2002b:40-41).

This reflects a strong discourse that focuses specifically on making informed decisions about personal health, community health and environmental health. This is indicative of a broader objective for learners to develop an awareness that a healthy environment supports better human health and well-being.

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[4] The foundational principle of the NCS(R-9) is colloquially referred to as the first principle.

4.2.3 The Technology Learning Area Statement

In introducing the Technology Learning Area, the Technology Learning Area Statement highlights that environmental factors should be taken into account when designing and developing technological solutions. The intention is for learners to develop responsibility and to be aware of the negative impact of technological designs on the environment and people. In developing awareness of their responsibilities within society, 'Learners explore both the positive and negative impacts of Technology on their political, social, economical and biophysical environment' (DoE, 2002c: 5).

Within Learning Outcome 1, learners investigate the environmental situation and the people concerned within the relevant context in their initial investigations; in their design specification, learners consider the environment where the product will be used or made and the impact of the product on the environment in the long and short term (DoE, 2002c:34-38).

Within Learning Outcome 3, seen as the core environmental Learning Outcome, learners are required to: 'Recognise and identify the impact of technological developments on the quality of people's lives and on the environment in which they live, and suggest strategies for reducing any undesirable effects' (DoE, 2002c:51).

This reflects a strong discourse of a technologically literate learner who is responsible and aware of community and environmental impact in *all* phases of their technology projects. The problem-solving orientation of Technology is also significantly linked to the action competence required by 'environmentally active' learners.

4.3 CASE ONE: RECONTEXTUALISING OF THE CURRICULUM DISCOURSE AT THE LEVEL OF NATIONAL TRAINING (GRADE 7)

In this section, I will outline how I tried to trace the environmental discourse within the grade seven training material, and report the evidence of selective appropriation and ideological transformation within the discourse.

4.3.1 Evidence of selective appropriation

I approach this section by firstly reporting on the analysis of the training materials. I then report separately on the interview data. This is done because the data sources are so different, and they provide distinct insights into recontextualising processes.

4.3.1.1 Document Analysis: The discourse in Grade 7 training materials within the ORF

Using the environmental discourse from the Learning Area as a frame of reference, I analysed the training materials produced for the Grade 7 training of provincial staff. I tried to see how the environmental discourse was relocated within the materials, how it had been appropriated and tried to follow the continuity, changes and discontinuities in the official (policy) environmental discourse as it was recontextualised within the Grade 7 training materials.

- *Stating elements of policy discourse without meaningful engagement*

In relocating the official policy environmental discourse (OPD), there were some instances where elements of the environmental discourse was repeated and just restated. In the Generic section of the training materials, participants were just given 'catch all' questions such as: 'how does the inter-relatedness of the principles link to sustainable development?'; 'how do the RNCS principles and the values embedded within them, support the development of a more socially and environmentally responsible society' (DoE, 2005c:8). These questions were presented with no instructions on how they could be meaningfully dealt with to enable a deeper understanding of the principles, no possible answers were given and no scaffolding for understanding the term sustainable development was provided, hence they become almost empty questions (AM3). In the Technology training material, three very broad questions are posed to participants in the introduction about considering environmental contexts and issues (DoE, 2005a:35) these, however, are not followed through or analysed in any way as the activity proceeds. They become questions on paper, which require no participant engagement (AM1). Similarly in the Life Orientation training material, in the activity on unpacking the Assessment Standards and Learning Outcomes, when responding to the question on 'what is the focus of the outcome', the given response is a reproduction of a Grade 7 Assessment Standard. Again there is no meaningful engagement with the Learning Outcome. The texts are characterised by a repetition of parts of the official pedagogic discourse. Further on in this activity, in response to a question: 'What does the Assessment Standard require the learner to do; to know and to value', the response given is again a reproduction of a Grade 7 Assessment Standard, and again there was no meaningful engagement of the environmental discourse, with only a reproducing of some fragmented elements visible (AM2). A similar occurrence is seen in the Generic section of the training material, when unpacking the NCS (R-9) principles, participants are asked to match principles and appropriate features of the principle. The features of the first principle given in the training materials are repetitions of elements of the discussion from the

Overview Statements (AM 3). This does not allow for extended engagement with the first principle, and merely engages educators in a fairly simplistic matching exercise involving a matching of fragmented statements drawn randomly from the Overview Statement (DoE, 2005c:1415)as shown in the extract below:

Learning Outcome	Headings	Assessment Standard			Principles of RNCS
		Skill (Doing word)	Knowledge & concepts (what you should know when you do)	Values & attitudes (Descriptor)	
3. Technology, society and the environment. The learner will be able to demonstrate an understanding of the interrelationships between science, Technology, society and the environment.	1. Bias in Technology	Express Explain	Opinions	How certain groups of society might be favoured or disadvantaged by given products Environmental responsibility Social responsibility	1.Social Goals: Social justice, healthy environment, human rights and Inclusivity.

Activity Reponses extracted from Technology Facilitators guide (DoE, 2005a:10)

Within the Technology training material, (DoE, 2005a:15-16) when unpacking the skills, values, and knowledge embedded within the Learning Outcomes (see extract above), the responses given for linking the curriculum principles with Learning Outcome 3, constitutes a reproduction of the official discourse of the first principle, there is no attempt to relate the first Principle to Learning Outcome 3 within the Technology Learning Area (AM1). Although social and environmental responsibilities are listed as values, there are no links made to knowledge or skills (DoE, 2005a:10). They are just stated as values with no actual pedagogisising of these values in terms of knowledge and skills within the Technology Learning Area (AM1). Further on in the Technology training material, (DOE, 2005a: 41), an Assessment Standard relating to environment, is transformed and listed as content with no clarification of this content while the context is listed as 'pollution'. When de-locating the official environmental policy discourse and relocating it within training activities the discursive practice in the training material shows evidence of a somewhat uncritical and unchanged reproduction of parts/elements of the official policy discourse without allowing for meaning making opportunities within the context of the Learning Areas.

- *Narrowing of the official policy discourse*

In the process of de-locating and relocating the environmental discourse, the analysis also showed evidence of narrowing of the discourse. In the Life Orientation training materials (DoE, 2005b:5) an omission of the underwriting sentence contained in the Learning Area Statement, '*The five focus areas of Life Orientation all addresses the human and environmental rights outlined in the SA constitution*' (DoE, 2002b:4) narrows the policy discourse and omits the linking of the five Life Orientation focus areas to addressing Human and Environmental Rights in the Constitution. The omission narrows the view of the five focus areas and thus narrows the steering orientation of these five focus areas within the Learning Area (AM2). Similarly, in the Life Orientation training material (DoE, 2002b:10) the unique features are written with no mention of environmental responsibilities, thus narrowing the perspective of the unique features. By omitting 'enables learners to make informed decisions about personal community and environmental health' (DoE, 2005b:10), the training material loses some of the key essence of discourse (AM 2). In the Technology training material (DoE, 2005a:22) questions are given for participants to consider, the question: 'How have environmental influences such as poverty and trauma been taken into account during the assessment process' this reflects a narrow focus on environmental influences where it is being reduced to just poverty and trauma (AM1). Within the Technology training material (DoE, 2005a:27) it is stated that assessment for the three assessment standards of Learning Outcome 3 are clustered and recorded as a whole. This merging of the three assessment standards within Learning Outcome 3, fails to highlight what important content/knowledge will be assessed if the three focus areas are clustered and treated as a whole. Consequently the clustering of the three broad Assessment Standards narrows the scope of the environmental discourse within this outcome. Instances of narrowing of the environmental discourse were also found in the Generic section (DoE, 2005c:54-55) when focusing on contextual barriers and the 'factors in the school environment that have the potential of preventing all learners from feeling welcome and reaching their full potential, the focus is on culture, dynamics and social context'. This shows a narrower discourse that is more focused on the social with no linking of barriers to ideas of 'relationship' and a healthy environment as articulated within the first principle. Through this analysis another pattern in the discursive practice of the training material is seen in the selected omissions that occur in de-location and relocation process. This results in narrow appropriations of the discourse within the training activities.

- *Gap between what is said and done*

Another trend revealed in the analysis of the training material is a gap between what is done and what is outlined, where the actual activity and its stated intention don't match. In the

Technology material, (DoE, 2005a:4) it states that environmental factors should be taken into account when planning, reproducing the discourse from the actual Assessment Standard but in the possible responses no mention or consideration is made of any environmental factors (AM1). When the design process begins there are various orientating questions with eventually an instruction to ask participants to choose the 'most suitable solution' (*ibid*), the criteria to determine 'suitable' is however not clarified nor is reference made back to materials used or environmental impact, showing a gap between the original stated intentions and what is articulated within the activity. The material further lists sensitivity to environment as a possible constraint to be considered (DoE, 2005a:5) but in the design specifications no mention of any consideration of environment or environmentally friendly design is made (AM1).

Despite outlining that environmental contexts and factors need to be taken into account, as the development of a learning programme process unfolds in the Technology training material, all guidance is around the generic structure of a learning programme, no mention of how environment should be considered or how to work with the principles; context or local issues is provided. These become peripheral issues to the generic structure of the learning programme. A similar approach is noted in Life Orientation, where in the checklists for development of learning programmes and work schedules, no mention of environment is made (DoE, 2005b:56).

In the Life Orientation material, when discussing the HIV /AIDS policy, participants are asked how this policy is linked to the first principle, but when discussing implications for teaching and learning for this policy there is no mention of the first principle or linking back to a healthy environment. In the Life Orientation material, there is again a reflection question just stated with no opportunity for meaningful engagement, '*how do the RNCS principles and the values embedded within them, support the development of a more socially and environmentally responsible society?*' The activities done in this section cannot be linked or related to this question and thus don't enable participants to answer this question (AM2).

This analysis reveals another pattern in the de-location and relocation of the environmental discourse, where elements of the discourse are stated but are not followed through in the activities, leaving a gap in the actual pedagogising of the discourse.

4.3.1.2 Interviews with Learning Area coordinators working in the ORF

Three interviews were undertaken with individuals serving as Learning Area coordinators within the ORF. The interviews helped to provide a perspective on how coordinators viewed

the environmental discourse within the NCS (R-9) and how they saw this discourse being implemented.

All three interviewees believed that environment was well represented in the policy and that the approach to environment is broad and very holistic. One interviewee stated that 'the social environment cannot be divorced from the physical, and that the physical and social are intertwined and influence each other in many ways … since it deals with individual, social, societal and environmental health' (C1In1). Another interviewee highlighted that it deals with 'issues around land, health and water … economy and mining' (C1In2). This reflects an appropriation of the environmental discourse that is multi dimensional, where environment is broadly interpreted to include many elements. Only one interviewee however, highlighted the interrelationship between these different elements.

One interviewee said environment was represented within Learning Outcome 3 (LO3) in Technology since that was the Learning Outcome that examined 'environment in society'. This respondent further stated:

> …it's a value and attitude outcome so you can't teach it need to live it and demonstrate it. In a Learning Area that focuses on invent /design/develop products that enhance lives, we don't want people to do this to the detriment to the environment (C1In3).

This reflects an appropriation of the environmental discourse that narrows the location of the discourse to one Learning Outcome.

In responding to where they saw the environmental discourse represented in NCS (R-9) policy, none of the three interviewees made any link to the first principle and how this was actualised within their Learning Areas. Thus their appropriation of the discourse does not include the first principle being part of the environmental discourse within their Learning Area.

When reflecting on how the policy was represented within the Grade 7 training material, only one of the three felt it was well represented as they had used the 'NEEP book and the round diagram to inform them' (C1In1), the others felt 'environment was not sufficiently dealt with' and was 'taking a backseat' (C1In2). This respondent further stated:

> The way we structured our activities we didn't include all components. We need to make environment focus clear so environment is the driver rather than environment being driven so we let our activities speak to that (C1In2).

To explain this further another respondent highlighted that the flow of information on the status of policy implementation and feedback from schools was a challenge:

> We don't know what's happening on the ground, what's the impact of the implementation; we need to create a platform this is highlighting what is happening/not happening, whether the policy is done justice to and how could it be supported (C1In2).

The interviewee further highlights that without this invaluable feedback information from schools, 'What do we respond to, it is thumb sucking – so important components are left out' (C1In2).

Reflecting further on the teacher training process, another respondent stated, 'that in training of teachers environment is not reflected not all … because no one really knows how too. We need a body to push it, without that it is forgotten' (C1In3).

Taking this further another interviewee highlighted that in documents it is '… not represented not even in Natural Science. Without people to drive it environment with a passion it won't happen. It's still just words on paper' (C1In3).

In their appropriations of the discourse none of the three interviewees reflected or commented on the first principle being part of the discourse or on its role in their Learning Area.

The interviews provided valuable insights into the discursive practice within the ORF and highlighted elements of how the environmental discourse is being appropriated by staff responsible for the development of the training materials.

4.3.2   Evidence of ideological transformation of the discourse

In this section I again report on the document analysis and the interviews separately.

4.3.2.1 Document Analysis: The discourse in Grade 7 training materials within the ORF

In the Life Orientation training material (DoE, 2005b:10) when defining the Learning Area there is a reference to 'meaningful and successful living in a rapidly changing world' this statement removes the emphasis on environmental and social rights articulated in the policy and thus transforms the key idea of the discourse. This is illustrated further when, in unpacking the different concepts within Learning Outcome 1, the material refers to lifestyle

choices as opposed to 'informed' lifestyle choices, and leaves out environmental action and how learners address an environmental health problem (DoE, 2005b:11). These omissions reduce and narrow the environmental focus within Learning Outcome 1 and change the original meaning.

In the Technology training material, similar changes to the discourse are noted, in the unpacking of Learning Outcome 1 the material lists 'technological capability involves being able to combine practical action with a deepening understanding of knowledge and skills to develop technological solutions' (DoE, 2005a:7). There is no mention of social and environmental responsibility, which was originally included, in this Technology Learning Outcome. It is further stated that this outcome 'allows learners to enhance the made world' (*ibid*); again with no mention of social and environmental responsibility. The above two statements insinuate that the main thrust of the Technology Learning Outcome 1 wants learners to make/build/develop technological solutions, which becomes the dominant discourse within these materials. This is further evidenced in the information on technological projects, when no indication is made of why the project is needed (*ibid*:11-12)**.** In the discussion on design process there is no mention of environmental responsibility or the consideration of environmental factors, the only constraints listed that should be considered are 'time; resources and learner skills'. Even in the selection of solutions no mention is made of environmental impact, despite it being articulated as such within policy (AM 1).

In the Generic section (DoE, 2005c:15), in Information Sheet 1, a fragmentation of the first principle occurs, where the principle is separated into four separate elements with no indication given of the relationship between these elements. By separating these four elements and giving definitions of the each separately, the emphasis is on the meaning of each term, and not on the *relationship between these in building a better society*, which was the intent of the first principle (AM3). In the Life Orientation material, when interpreting the first principle, only one sentence was selected from the overview: 'the curriculum attempts to be sensitive to issues of poverty, inequality, race, gender, age, disability and such challenges as HIV/AIDS' (DoE, 2005b:35), this selective selection of just one statement narrows the interpretation of the first principle with no mention of a healthy environment, thus transforming the key message of the principle within the training material (AM2).

In Life Orientation, the slide linking the first principle with Life Orientation states;

> … all learners are to be treated equally and with respect irrespective of race, gender, age, disability, etc. No one is to be excluded from learning or to be discriminated

against in any way. The various needs of learners are addressed in the design and development of appropriate learning programmes (DoE, 2005b:34)

The above statement highlights a narrowed focus adopted by the Life Orientation materials and does not reflect the full intent of the principle. The principle is also written without reference to the idea of *relationship* and no discussion or link to a healthy environment is made, thus presenting an ideologically transformed view of the first principle, and the focus of this Learning Area. This is illustrated further in the Life Orientation material, when discussing the impact of the first principle on teaching, learning and assessment, the given response states 'all learners are treated equally and all must be accommodated according to their needs in the teaching, learning and assessment process' (DoE, 2005b:35). This focus on inclusivity only, reflects an ideological transformation driving the interpretation of the first principle within the Life Orientation training materials.

In the Generic training material (DoE, 2005c:17) an activity linking the 10 Constitutional values to NCS principles is very superficially done with no interpretation or deliberation of values or the principles. The principles column reflects the elements of the first principle, which is fragmented, thus losing the policy emphasis on relationships. There is also an absence of any reference to environment, as is depicted in the extract below:

VALUE	Link to NCS principles made
Accountability and responsibility	High level of skills and knowledge for all; progression and integration; outcomes-based education; inclusivity *(Note: exclusion of reference to a healthy environment)*
Ubuntu (Human Dignity)	Human rights
Respect	Human rights; Social justice; inclusivity

Extract from Generic Training material (DoE, 2005c:14)

In the Technology training material, after an activity that focused solely on inclusivity and differentiation in teaching, a question was given to participants, 'which principle is this activity addressing?' thus the principle was once again reduced to inclusivity only, ideologically transforming the main thrust of the discourse (DoE, 2005a:20).

This section highlighted the ideological transformations evident in the discourse as it was relocated within the training material.

4.3.2.2 The Interviews

Although the Life Orientation Learning Area Statement highlights that it seeks to 'enable learners to make informed decisions about personal, community and environmental health promotion' (DoE, 2002b:4), the framing of the Learning Area focus by one of the interviewees reflects a strong ideology of personal development only, where the focus is on development of the individual as illustrated by the following:

> In Life Orientation, learners are orientated towards life, the social and physical environment, emphasis on self in society and developing self in society so learners can cope with pressures in (the) social environment (C1In1).

4.3.3 Factors Influencing Recontextualising

From my experience as a participant observer in the process of developing the national training materials for Grade 7, I believe that the following factors could have influenced and impacted on the recontextualising process:

- Time - the writing of these training materials occurred under dire time constraints;
- Writing of materials occurred in isolated Learning Area teams that met periodically, thereby reducing interaction and peer input;
- The environmental discourse is still a relatively new discourse (see chapter 2), thus many officials working in the ORF have not had extensive experience of working with it;
- Reflecting on the history of the discourse within the DoE (see chapter 2), and the evidence of appropriations reflected in the material (as reported above) it is possible to infer that, superficial background knowledge, information and experience around environment and environmental issues and a lack of adequate experience of working with these issues in the curriculum are also an obstacle when utilising the discourse; and
- The material is not framed from within teachers practice (C1In2; HSRC, 2005a).

4.4   CASE TWO: DELTA ENVIRONMENTAL CENTRE - RECONTEXTUALISING OF THE ENVIRONMENTAL DISCOURSE WITHIN AN NGO TEACHER TRAINING PROGRAMME

In this case, I tried to trace how the environmental discourse of the NCS (R-9) was relocated within the teacher training practice of DEC, an active recontextualising agent in the PRF (see section 2.2.1.). I tried to trace how the discourse had been appropriated by staff and, as in

the previous case, I followed the continuities, changes and discontinuities in the official (policy) environmental discourse as it was recontextualised within DEC's teacher training practice through identifying evidence of selective appropriations and ideological transformations. As in the previous case, I analysed different data sources separately to ensure greater rigour.

4.4.1 Evidence of Selective Appropriation

4.4.1.1 The Focus Group Interview

The focus group interview enabled a broad overview of the teacher training programmes at DEC, staff experiences and views. It enabled a vantage point into the discursive practice of DEC staff. Through a careful study of the discursive text, I tried to follow how DEC staff recontextualised the environment discourse within their teacher training practice.

- ***Interpretations of how environment is represented in policy***

In responding to how and where they saw environment represented within NCS (R-9), one focus group participant immediately replied 'all over' (FP4). This point was further clarified:

> It (environment) has really been threaded all the way through in a number of different ways … It has got to actually be a continuous thing, almost like it could be a golden thread that goes through the whole years work, much more integral … it is almost a different way of handling subject matter (FP4).

This appropriation of environment as being integral within policy was further supported by another focus group participant who highlighted that within the NCS (R-9), he saw 'the environmental stuff as part of the broader learning process' where the environmental learning is within the context and 'alongside all the other stuff that is happening' (FP1).

Commenting further, another focus group participant clarified how he saw environment represented within the NCS (R-9) at two levels:

> I see it in two ways, the principle, which is quite general and is an umbrella of everything and like OBE should filter throughout, but there certainly are certain Learning Outcomes and assessment standards, which focus more specifically like the Natural Science, Technology, has a very strong environmental impact and social element to that. For example, in Languages you do not have an explicit environmental theme underlying whatever, but there the principle kicks in and so you can teach language based on and with the flavour of that first principle (FP1).

Another focus group participant also highlighted the importance of some Learning Areas having core knowledge specifically dealing with environment and environmental issues (FP3), as this could also allow opportunity for better integration when working with the NCS

(FP2). This reflects an appropriation of environment as being an overarching issue that is embedded within some Learning Outcomes and sometimes integrated into other learning experiences, using the principle as an integrating focus.

Commenting further on how environment is more holistically represented in policy (FP2) due to the way it is articulated within the first principle, focus group participants felt that it made them 'shift their viewpoint' so when they '… look at natural resources it is not just soil and water but it is the equity issues around water, and the human rights and social justice issues related to that' (FP1). Again focusing on the first principle, one focus group participant commented that the policy had made them, as an environmental education practitioner, focus on inclusivity issues, which they had not previously done (FP2). Commenting further on the first principle, focus group participants noted that the four elements could not be treated separately, as there was a very close relationship between them and schools should work to take the principle into all their thinking and into all the Learning Areas (FP2; FP4).

A concern highlighted when reflecting on the first principle, is that within the policy itself these elements were not well interpreted, so they were almost 'left up to interpretation' and people have different interpretations of what these broad ideological elements mean. So when we talk of a *relationship* between these four elements people are unsure what to articulate and how to see that a relationship between these four elements exists (FP1). If they were 'spelt out' it would have been easier for people to see that a relationship between these concepts does exist (FP1).

Reflecting further on environment within curriculum one focus group participant cautioned that '…when we use environment as a lens through which to which to look … at our curriculum work we need to be careful that we don't try to see environment in every Assessment Standard' (C2F2).

- *Approaches to working with the NCS (R-9) policy*

Responding to how they work with teachers trying to interpret environment within the NCS (R-9), focus group participants highlighted that they focus on working directly with the policy documents (FP1), trying to get teachers to see the environmental opportunities within various Learning Areas (FP3); and working with teachers to explore the documents, interpret and think creatively around them (FP4). They further elaborated that the greatest area of need they have identified is 'ideas of how to bring the assessment standards to life' (FP1) they thus focus their work with teachers on 'current active learning approaches to help teachers with practical ideas around curriculum implementation' (FP1).

In working with teachers to interpret environment, one main area of focus that was highlighted by participants, was teachers understanding of the first principle:

> …looking at where the environment is situated in the curriculum and why. Over the number of workshops that we have done we have looked at once again the Constitution, Bill of Rights and linking that with the RNCS (NCS R-9), and unpacking that further using pictures and diagrams. From there we have worked with unpacking the Learning Outcomes and assessment standards (FP2).

To elaborate further a workshop example was cited to illustrate how they worked with teachers to interpret the first principle:

> In Mpumalanga we used the Bill of Rights, used pictures there, we got the teachers to actually first note what they have seen in those pictures, and then we gave them a template with the principles written on them. And then they had to look at the picture again using that principle. Then we gave them extracts on what Social Justice is and what Human Rights were and things like that, and then tried to bring the two together (C2F2).

This process of re-looking at the pictures, 'allows people to see things in more depth' (FP1). Another focus group participant elaborated further that the re-looking allows people to see something different that people may not have seen at first glance (FP2). Using the principle as a focus when dealing with environmental issues also forces teachers to incorporate a number of views, and enables people to look at things in different ways and broadens perspectives (FP1). Another focus group participant further elaborated that using this focus enables people to focus beyond themselves to other people (FP1). Reflecting further on the first principle another focus group participant cautioned against looking at environmental work in uni-dimensional ways and instead encouraged people to look at the inter-connectedness, interdependence and interrelationships (C2F4).

This analysis reflects a discourse that focuses strongly on interpretation and meaning making of the first principle as an underlying integrative principle that promotes environment as an interrelated, interdependent issue within curriculum work.

- ***Broad whole school approach to environment in teacher training***

In working with environment and curriculum at school level, to enable better 'penetration into the school' (FP1) participants explained that they had decided to use a whole school approach, working in a small number of schools with, 'all the teaching staff, school governing body, school management teams' in 'quite a focused way' (FP1). They saw this as an appropriate approach as it gets the school to take environment into all their planning and 'thinking and into all the Learning Areas', so that there is 'complete synergy across the whole school from the management right through to classroom practice' (FP4).

The team spent six months gathering detailed information on the schools they worked with by 'having personal interviews and focus group interviews with teachers to identify some of the problems at the school and what kind of issues the teachers were battling with' (FP2). Working with the whole school has enabled them to go through a 'process of auditing, identifying issues, identifying needs … looking at environmental practice in terms of management and resources but also teaching practices and how we make the school itself a better teaching environment' (FP1). This has enabled them to look at things like 'how to use resources at school better and how to clean school grounds for better learning and for better resource management' (FP1).

It also emerged that this approach has also facilitated better relationships with the teachers and a more focused way of working with issues relevant to the whole staff with the whole school having a common vision (FP1).

Elaborating further on their approach, a focus group participant explained, 'the work that we are doing is important in identifying issues in the school and by getting the teachers to identify the priorities in the school, it is then they will be able to bring out the issue of context to a greater extent' (FP2). These ideas were supported by another focus group participant, who highlighted '… that learning must be realistic; it must focus on 'real issues'. When children are learning about something they must '… either be solving a real problem or talking about something which is real that is not just kind of textbook stuff' (FP1).

This highlights an appropriation of environment as dealing with 'real' issues that impact on all levels of a school, thus promoting a discourse of relevance and context.

- *Challenges experienced within the teacher training programme*
In the discussions several challenges were raised that focus group participants encounter in their work with teachers, these challenges raise interesting perspectives on recontextualising processes within teacher training programmes.

In interpreting the first principle and the view of environment and its links to social justice and human rights, the curriculum is seen to promote a political view and some people may not share that political view, therefore they ignore the first principle (FP2) which highlights that the ideology of the curriculum is not shared by all.

Reflecting on their experience with teachers in Winterveld working with health and sanitation issues, focus group participants felt that while they were encouraging teachers to teach about healthy practices, structural constraints influenced teachers interpretation as seen in

the example cited, 'on one hand you are teaching children to wash their hands after they go to the toilet or before they eat but there is only one tap in the school … we are promoting one story but in reality you cannot actually carry it out because of infrastructure or other factors' (FP4).

In working with teachers to design learning activities, focus group participants indicated that they find teachers lack creativity and that they 'think very superficially and not getting into nitty gritty, digging deeper' they often settle instead for what is 'quickest and easiest'. Thus it is difficult to get teachers to explore the issues selected and develop innovative activities (FP2). Another focus group participant further elaborated that teachers' had not in previous teaching or school experience encountered anything like what they were now expected to do so they find it difficult to think out of the box (FP1; FP2). Another focus group participant added that this, coupled with the stereotyping ideas around environment constituted by an emphasis on food gardens and cleanup campaigns stifles any creativity around environmental issues (FP1). Thus teachers stick to their own comfort zones, as they often do not know enough or have enough experience, so they avoid working with the environmental discourse of the curriculum (FP1). Thus we see history and experience influencing interpretation of the environmental discourse.

4.4.1.2 DEC Workshop File

In locating the environment discourse in its work with teachers, DEC used a School Ecological Footprint Questionnaire (WR1), in two of five schools, to orientate teachers. The ecological footprint questionnaire focussed on energy, water, gardens, waste, health and safety and transport, various questions were asked in each focus area and this was used to review the schools' environmental practice. By choosing these particular five focus areas, the questionnaire pre-selects priority areas for environmental performance and thus reflects a particular view of environmental performance (WRt1, WRt2). Reviewing the questions on health and safety, it asks teachers if they grow organic vegetables; whether learners are exposed to air pollution (including dust); if the school burns waste; if the school uses pesticides and herbicides? (WR1) These questions are very focused and thus reflect a particular pre-determined view of health and safety issues at schools.

An 'Environmental Learning Assessment Sheet' (WR2) was used in four of the five schools, through engaging teachers in reflecting on their learning programmes, the sheet is used to assess the schools' environmental learning focus in learning programme development and it thus articulates strongly DEC's appropriation of environmental learning discourse. A study of the sheet shows that it involves teachers in a very in-depth review with a very broad holistic

view of environment. Teachers examine the nature, causes and effects of issues examining the depth with which these were explored within the learning programme – taking four dimensions (social, economic, political, biophysical) into account and the relationships between them (WR2). The sheet also reflects a rating scale where points are allocated according to how environmental issues are dealt with, '1 point for not exploring the nature of an issue; 2 points if the nature of the issue has been explored but not taking into the different environments into account; 4 points if the nature of the issue has been explored taking the relationship between the different environments into account' (WR2). This thus reflects a strong predisposition towards a four-dimensional model of environment with the rating scale also illustrating the emphasis placed on the relation between these dimensions.

The sheet also asks teachers to examine a unit of work to analyse if 'the background and context of the learner determines what is taught and how environmental learning takes place' (WR2). Thus the emerging discourse is strongly linking relevance to the context of learners. It also reviews selection, use, adaptation and development of learning and teaching support material, and to what extent environmental learning is being assessed (WR2). This workshop resource highlights a strong framing of environmental learning based on a view of environment that involves a relationship between four dimensions (social, economic, political, biophysical) and how nature, cause and impact of environmental issues are dealt with within curriculum in learning programme development.

A study of the school workshop reports WRt1, WRt3 and WRt4, reveal an appropriation of the idea of a *'healthy environment' as a two-pronged concept, the school environment and the learning environment*. The idea of learning environments was explored through reflecting on 'special places from youth' and 'favourite and least favourite areas on the school ground', from which they drew out what makes learner-centred environments. They then examined their school grounds examining to what extent they were learner-centred. The idea of healthy school environments was explored through the ecological footprint activity already discussed, and audits of the school, using the Eco-School audit, and doing an energy audit of their school as a detailed audit of a focus area.

Using Learning Area tables (WR4) to assess the use of school grounds as a resource, 'each Learning Area looked at curriculum outcomes and how school grounds were being used to achieve these curriculum outcomes' (WRt 1). Teachers took each Learning Outcome and examined each assessment standard within the Learning Outcome, then examined whether 'achieved using school grounds Yes/No' and then 'How could school grounds be changed to achieve this Assessment Standard?'. Here teachers use Learning Areas and their related

Learning Outcomes and Assessment Standards to assess their use of school grounds. In Sonqobo school the teachers went on to discuss the necessary factors to consider when designing school grounds – environmental impact, learner needs, teacher needs, curriculum needs (WRt3). These examples illustrate how teachers, collectively as a staff, are using the curriculum to re-examine their local environments and explore the new opportunities for curriculum work.

Using Project Planning Sheets (WR5), each group at Phumula school 'generated ideas for practical school grounds projects that could enhance their curriculum work' (WRt 1). In part A, teachers explored and planned for their envisaged projects. The resource sheet asks teachers to link each part of the project to the curriculum. In Part B they take their planning further by trying to link their planning with an Active Learning Model where teachers link their projects to four key aspects of the model:

> **Information sharing**: What do we know? What do we need to know?
> **Enquiry encounter**: How do we explore the problem?
> **Action taking**: What can we do?
> **Reporting**: What, how and to whom do we report?
>
> (WR5 Part B)

This illustrates that an active learning model was used to help teachers focus and plan their projects to be more action-orientated. This reveals a recontextualising of the discourse, that illustrates *what* an ideal approach to environment should involve (local issues link to curriculum) and also the *how*, where a method is highlighted for environmental learning.

The greening committee comprising teachers and school gardeners, brainstormed needs of the school and how greening could help to achieve or support many of these goals (WRt 1). The brainstorm sheet 'planting with a purpose' (see figure 4.1.) shows a discussion where broad areas were listed and these were then further unpacked to highlight purpose and possible curriculum link.

At Rondebult School, the issue of energy was selected by teachers to work with. A variety of recent newspaper articles were used highlighting different issues related to electricity. 'The workshop provided an opportunity to assess (informally) the educators' prior knowledge of energy issues and understanding of environmental issues in general. Once they had 'got going', the educators were quick to make curriculum links and see learning opportunities in their Learning Areas' (WRt 5). Again an issues-based approach is used where teachers are using issues they identified, making curriculum links and developing their lesson plans.

The appropriation illustrates a strong predisposition to working with real, local issues and the discourse also shows an inclination towards a practice-based, action-orientated approach.

4.4.1.3 DEC Workshop Observation

The two-hour educator workshop focused on developing assessment activities. It thus illustrated an example of how the environmental discourse within Life Orientation had been appropriated into assessment.

The exemplar lesson was framed as a Grade One Life Orientation lesson, using Learning Outcome 1 and Assessment Standard 1. In suggesting an approach to assessment the facilitator asked teachers to read the Assessment Standards, look for the doing words and convert them to assessment questions, as depicted in the extract from the observation notes below:

- Assessment Standards chosen from Life Orientation – Learning Outcome 1 AS1 – 'We know this when the learner explains steps to ensure personal hygiene and links these steps to environmental health'.

- The assessment questions framed by teachers were:
  - Can the learner explain steps to ensure personal hygiene?
  - Can the learner link these steps to environmental health?

- Thereafter teachers using the environment model as a guide developed an assessment mind map for the assessment questions. From the mind map one aspect was selected to frame assessment activities (C2LO).

The above approach places the Assessment Standards at the 'heart' of the assessment process, and thus places the environmental discourse as being integral to the OBE curriculum discourse.

4.4.2   Evidence of ideological transformation

4.4.2.1 The focus group interview

In articulating how they work with teachers around environment in curriculum, one interviewee highlighted that their approach to working with environment in curriculum, involved 'looking at systemic environmental practice in terms of management, resources but also teaching practices and how to make the school a better teaching environment' (FP1). He elaborated this approach further, 'how to use the resources at school better and how to clean school grounds for better learning and for better resource management' (FP1). This

discourse reflects an approach to environment as a systematic whole school organiser for better teaching and learning. This is supported by another participant who highlighted that their work with teachers involved planning and thinking into all the Learning Areas, so that there is 'complete synergy across the whole school from the management right through to classroom practice' (FP4).

DEC educators focused their work with teachers on a practice-based ideology that emphasises practical ideas and 'bringing the assessment standards to life' (FP1). This was further illustrated by ideas of helping teachers to 'link the practical issues and management projects were they relevant to curriculum issues … we focus a lot on [the] current active learning approach to help teachers with practical ideas around curriculum implementation' (FP1).

There is also evidence of a strong position which favours teachers to work with 'real' issues, which articulate a strongly 'contextually relevant' ideology. This is further evidenced by this focus group participant who stated:

> '…the work we are doing is important in identifying issues in the school and by getting teachers to identify the priorities in the school, it is then they will be able to bring out the issues of context to a greater extent' (FP2).

This view was further supported by:

> '…the learning must be realistic. It must be interested in real issues. So, when the children are learning about something they must either be solving a real problem or talking about something which is real that is not just kind of textbook stuff' (FP1).

4.4.2.2 DEC Workshop File

DEC's work with schools is framed on the ideology of environment as a holistic concept. Teachers are engaged in a very in-depth review of their curriculum work where they examine the nature, causes and effects, examining the depth with which these were explored, taking four dimensions (social, economic, political, biophysical) into account and the relationships between them (WR2). The environmental learning assessment sheet also reflects a rating scale where the most points are allocated for when the 'nature of the issues has been explored taking the relationship between the different environments into account' (WR2). The framing of this activity reflects DEC's ideological perspective on how environment as a concept is viewed.

A further pattern noted in the DEC school reports was a strong focus on learner-centredness in the approach to environment as evidenced by the following examples of activities extracted:

> Teachers brainstormed on the 'needs of the child', also reflected on 'my special place' using these two activities as a frame, teachers tried to 'assess how well the school grounds are currently meeting the holistic needs of the child' (WRt 3).

A further example noted was after an extensive 'discussion on what a leaner-centred place or environment is' the teachers 'walked around the staff-room, and using the windows as a picture, marked every element they could see that could be described as learner-centred' (WRt 1). They then used this to see how they could make changes to the school grounds. The two examples cited illustrate how the DEC teacher activities were framed with a strong ideology of learner-centred education.

Another example of ideological transformation of the NCS environmental discourse is a strong inclination to use the environmental education curriculum work as a vehicle for social change in the schools as evidenced by the following activities: 'each group generated ideas for practical school grounds projects that could enhance their curriculum work' (WRt 1); teachers 'brainstormed needs of the school and how greening could help to achieve or support many of these goals' (WRt 1).

A further example of using the curriculum to change the school environment was noted in:

> Educators were given a ground plan of the school. After a short 'direction finding' exercise, educators were asked to indicate their favourite places and least favourite places on the school grounds. Each educator was then asked to express their 'vision' for the school grounds, as they would like to see them in the future. The participants were divided into small groups. Each group was provided with a skeleton of a mind-map indicating the factors to consider when planning school grounds. Participants elaborated on and completed the mind map. Using the scale drawings, the groups were asked to place their ideas onto the ground plan (WRt4).

The following reflection by the facilitator alludes to another ideological framing 'almost every individual seemed to be 'well-engaged' by the activities – there was a strong 'personal' element to the activities' (WRt 2). This is further evident in the activity quoted above 'their favourite places and least favourite places on the school grounds' and the 'my special place activity' discussed above. Thus we see an approach that focuses on inciting individuals to become *agents of change* within their school environment.

The mind-map below illustrates an example of teacher's work, showing the holistic approach to school's grounds curriculum work that was undertaken at the schools. From the centre

title sentence and the mapping, it illustrates the extent to which the curriculum discourse has been transformed into a discourse of change in the school (which could be described as a form of social change).
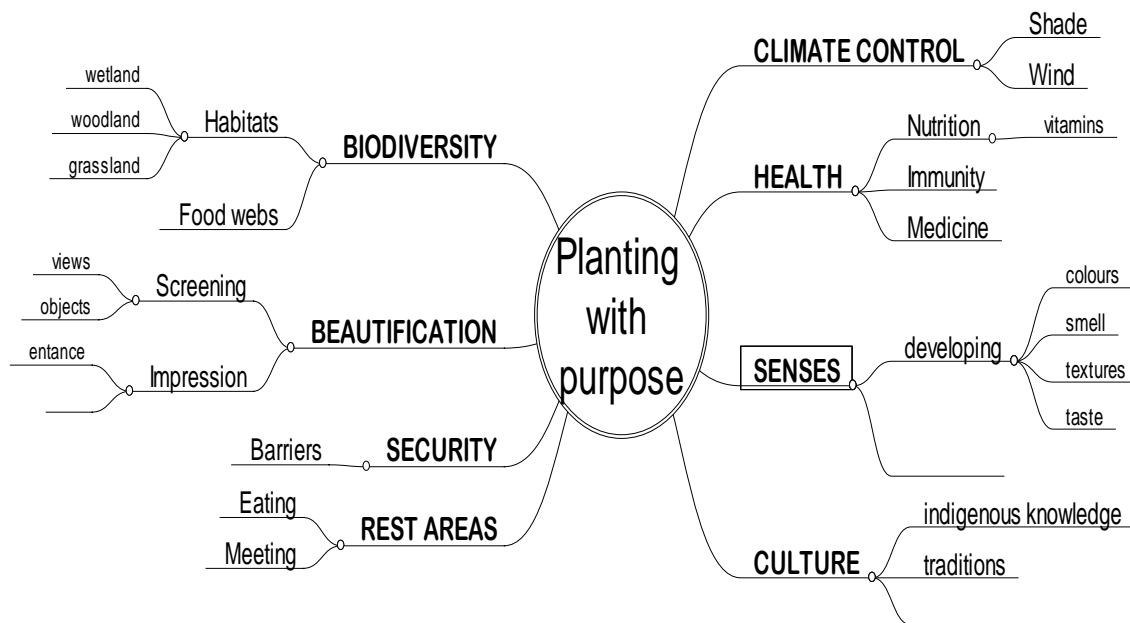
FIGURE 4.1: Teachers mind map extracted from WRT 1

4.4.2.3 DEC Workshop Observation

In framing the steps for the assessment process the facilitator asked teachers to 'use the environment model to mind-map assessment questions' (C2LO) this, she explained, will 'gives us ideas about different sides of environment; help us to ask questions; think broader and help us to explore learners' context' (C2LO). The facilitator thus used the four-dimensional environment model (depicted in the workshop handout) to frame the discursive practice of the educators as they developed an assessment process for their learning programmes.

The four-dimensional environment model thus framed teachers' interpretation of environmental health within the Life Orientation Learning Outcome and accordingly transformed the discourse into a discourse examining health issues through the lens of the four dimensions of environment as represented in the exemplar mind-map handed out in the workshop (see figure 4.2.).
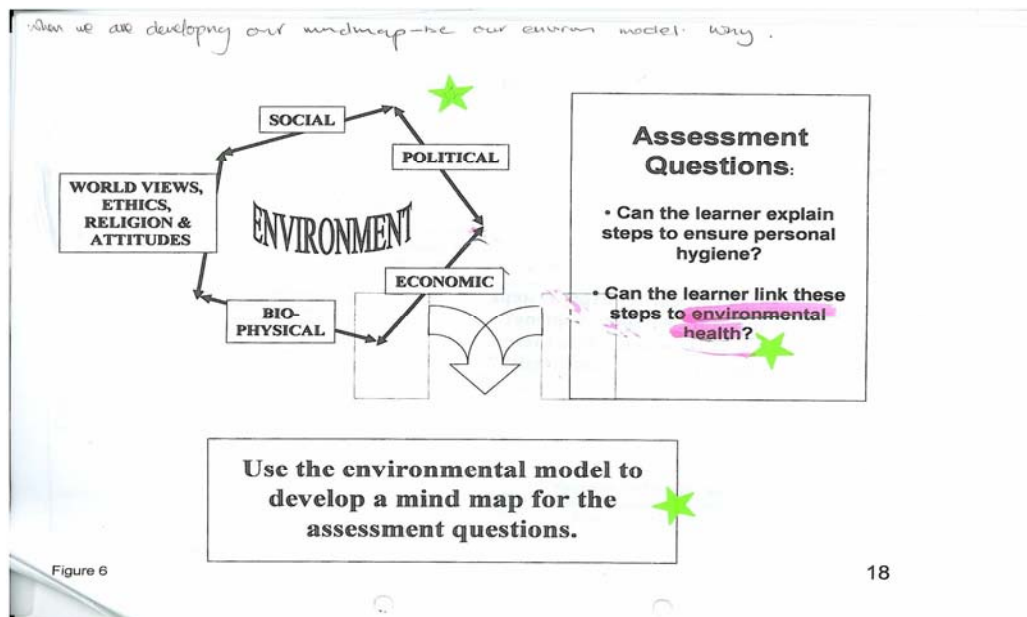
FIGURE 4.2: Framing assessment questions – handout from workshop

Using the assessment questions as a focal point, the exemplar discussed by facilitator-highlighted aspects that could be assessed, those included:

- What are germs and why are they dangerous (biophysical and social);
- Readily available water that is clean and safe for use (biophysical, social, economic and political);
- How do we keep our water clean and safe for use (ethics);
- Sanitation – what are good sanitation practices (biophysical and social).

(Extract from workshop handout)

The above extract also illustrates how, within the activity, the discursive practice of the facilitator uses the four dimensions of environment as a lens to frame her assessment practice, again showing the environment discourse as an integral part of the OBE discourse.

4.4.3 Factors Influencing Recontextualising

Drawing on my knowledge of Delta Environmental Centre and my long standing experience of engagement in the environmental education community in South Africa (see section 1.2), I have been able to identify the following factors influencing recontextualising in case 2:

- Past practice of the organisation, and the framing of the environmental discourse within experiences of the environmental education community viz. four dimensional model of environment, active learning, and the examination of the nature, causes, effects of issues (see chapter 2, section 5.2.3);

- Individuals with strong background knowledge of environment and vast practical experience of focusing on environment within curriculum (see section 1.5.2.); and

- As they operate at school level, their discourse is associated within real practice issues that are of interest and relevance to teachers and learners in schools (e.g. lesson planning).

4.5 CASE THREE: RECONTEXTUALISING OF THE CURRICULUM DISCOURSE AT THE LEVEL OF INTERMEDIATE PHASE IMPLEMENTATION WITHIN A SCHOOL

This case highlights how the environmental discourse was relocated within the planning, action and activities of an educator within a school in a rural part of KwaZulu Natal (see section 1.5.3). It illustrates how the discourse had been appropriated by the educator and tries to track the continuity, changes and discontinuities in the official (policy) environmental discourse as it is recontextualised at the micro-level in the classroom, again identifying evidence of selective appropriation and ideological transformation. I again discuss different data sources separately to enhance rigour.

4.5.1 Evidence of Selective Appropriation

4.5.1.1 Classroom Observation

In selectively appropriating the environmental discourse as 'problems in the community' (OBL1), the teacher steered the discourse into focusing on problems learners raised such as issues of 'lack of transport; lack of houses; lack of roads; lack of nutrition' (OBL1). Thus from a lead sentence of 'let's think about our environment' the teacher encouraged a discourse that concentrates on what is 'lacking' in the community, emphasising human needs. The brainstormed list produced by learners, even though framed as 'problems in the community', contained only problems affecting human life, there was no link to problems in the ecosystem. The brainstormed list, which was not probed further by the educator, did not contain issues such as HIV/AIDS, lack of access to running water and soil erosion, which are issues prevalent in the community (Ramsarup, 2004).

From the list of 'problems in the community' the teacher decides to focus on 'money as one of our needs' (OBL1), thus we see a selective shift to a strong economic discourse. The teachers' intentionality could be gauged from his question 'how many of you have parents who are working?', which was six as opposed to thirty seven who had parents who were not working (OBL1). The selective appropriation to an economic discourse thus appears to be contextually influenced. The strong economic discourse was amplified by the next group

activity, which was 'what can we do in order to get money' (OBL1), which learners brainstormed in groups. There was no elaboration on what factors should be considered or any direction given to learners to think carefully about their suggestions, it was simply 'we need money, so what can we do'.

In deciding on the most appropriate solution from the options suggested by learners the teacher ticked the common suggestions, and tried to see how many times each option was suggested. There was again no discussion on impact of each option; learners were not engaged in examining the strengths and weaknesses of each. The selection was made on the basis of the most commonly suggested option. The final selection of making brooms was again not examined for impact or feasibility (OBL1).

The discussion on what 'resources do we need', was focused on 'axe, hammers, rulers, nails, hard rocks, palm tree leaves' (OBL1). This discussion was not expanded beyond 'what do we need' into examining the natural resources looking at whether they were renewable and non-renewable or the need to be cautious in how we obtain and use resources. A similar approach was used when learners designed their brooms, no mention was made of factors to consider when designing brooms. Some groups designed two brooms (see figure 4.3, below) a long handle and a short handle broom and they discussed which was stronger. Thus we see a lesson evolving that is focused very clearly on the product that learners are making and almost no consideration of the factors that need to be considered when designing and making products, as required by the Technology Learning Area statement.
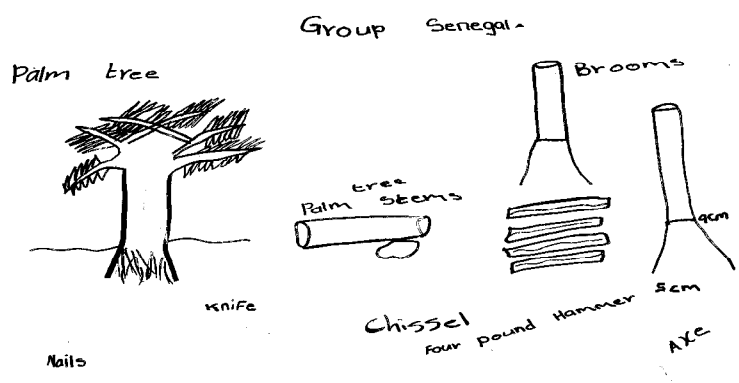
FIGURE 4.3: Example of learners' work – designing their brooms

When the selection of the short broom made only of palm stem was made, the teacher asked the class, what will happen if we just cut trees – and elaborated that the 'next generation will not be able to see the plants, they will have no palm trees' so when cutting they had to plant palm trees. However this point was not elaborated or discussed further in

the class and learners moved on. There was no elaboration of the use of natural resources when developing products (OBL1).

4.5.1.2 Analysis of Lesson Plan and Learners Work

A study of the learners' work in the first group task shows an economic slant in the appropriation of the discourse.

Groups brainstormed:

> Solutions to get money – to plant vegetables and fruits and sell it at the market; to make brooms and sell; sell sweets; to sell cows leather; to sell flowers; make dresses and sell (LWL1).

Learners responses depicted below, reflect a discourse that is very focussed on selling products and making money. The responses also indicate that the focus has shifted from addressing the community problems to making money, again illustrating a selective appropriation of the environmental discourse in Technology.
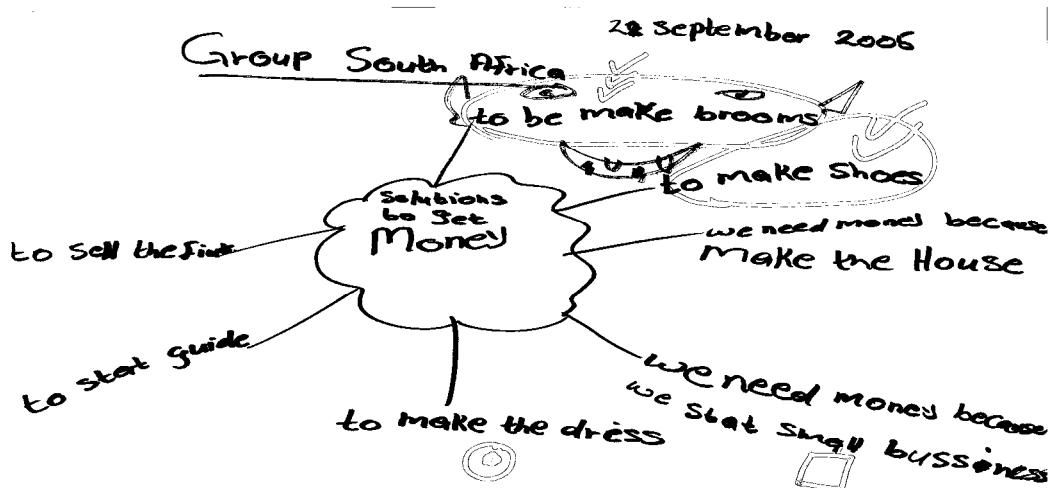
FIGURE 4.4: Learners' work: group activity

In Learning Outcome 1, Assessment Standard 1, the OPD in Technology states that learners should investigate background context, the nature of the need, the environmental situation and the people concerned (DoE, 2002c:34). The activity as listed in the lesson plan 'solving basic human needs by making brooms' does not reflect this idea but rather one of using the resources to generate income. Figure 4.4.above, also illustrates how the selection of project was done by learners ticking and marking the most common suggestions.

4.5.1.3 Interview with educator

In responding to how he saw environment within the NCS (R-9), the educator responded that he saw environment in all Learning Areas, he elaborated further 'in EMS it deals with economy and environment enters, when we deal with people, environment enters, when we talk of employment or unemployment it involves how people live and how they socialise, again environment enters' (C3InT).

When appropriating the environmental discourse within the Technology Learning Area, his response 'I think all the Technology Learning Outcomes have environment in it, but the most important one is the one that talks about identify and solve problems, this is very important for environment', again shows a focus on people and their lives, with a strong community problem-solving agenda, which is further illustrated by the following:

> Technology is about looking at the way people live, the problems in the environment. It is one of the Learnings Areas that's used to solve problems in the community. My focus in Technology is to solve community problems. I focus on the things that we have in our environment and try to see the problems (C3InT).

Within the framing of his problem-solving activities there is evidence of elements of the environmental discourse having been appropriated as illustrated below:

> I try to use what is in the community, the natural material and the indigenous knowledge of the people. … I try to enable my learners to solve problems using waste materials. Especially because in Technology we teach learners to reduce; reuse; recycle. (C3InT).

His discussion shows an appropriation of the indigenous knowledge within technology Learning Outcome 3, and a linking of this with waste reduction, the 3Rs (Recycle, Re-use, Reduce) of the waste management discourse and awareness of natural materials in the environment (C3InT).

This appropriation of elements of the NCS (R-9) environmental discourse can also be seen in the structure of the activity he explained below:

> … [we] went out to pensions points which needed to be cleaned; we collected waste weighed it, sorted biodegradable/non biodegradable. We used biodegradable to form compost. The strong cardboard we used for shoemaking. Made shoes using cardboard. Learners used cardboard to measure and design shoes. They evaluated the cardboard shoes and then explored other options. We then collected old shoe and shoe soles, collected leather cut-offs and used these as scrap leather. To stitch we had no money, made needles from old broken umbrella wires, which we sharpened. To stitch we used fibres of Aloe, since they have strong veins, we used this as thread. I taught them to cross-stitch and they stitched their shoes. Rather than

buying we can use what we have in environment, so we cleaned up and that gave us material to use (C3I).

The above extract from the teacher's interview highlights how elements of the environmental discourse have been fully integrated into Technology in the design and make process. Here learners are going through the technological process steps, design, make, evaluate but at the same time learning potentially valuable lessons about waste, re-using and natural resources if adequate time is given to these environmental learning lessons and building learners' foundational knowledge.

4.5.2   Evidence of ideological transformation

4.5.2.1 Classroom Observation

By appropriating the discourse as 'problems in our community' the teacher ideologically transforms the NCS (R-9) environmental discourse into a problem-based discourse, focusing learners on the problems in their community (OBL1). This discourse is transformed further when 'problems' are conflated with 'things we need' (OBL1) and the lesson becomes focused on doing something that the community needs.

The selection of money as a need in the society that learners would brainstorm had a strong influence on the unfolding of the discourse in the classroom (OBL1). This economic discourse was developed further with learners brainstorming 'what to do to get money' (OBL1) (see figure 4.4). There is thus implicit learning embedded in this approach, which highlights that to address the problems in our community we need money, which again reflects a transformed discourse. Thus, we see a lesson starting out with the intention of a Technology project addressing a community need, shifting to a discourse that unfolds as a narrower transformed discourse with a strong economic slant.

During the lesson on making the brooms (OBL2), the learners were very focused on what resources they need and on making their brooms. They collected their resources and as a class discussed what each would be used for and commenced with the broom making. There was no discussion from the teacher who circulated and supervised.

Siyanda demonstrated the process to class and others followed in groups:

Stage 1:   Learners very actively engaged in peeling the palm stems using knives;
Stage 2:   Once peeled they cut stem into two then four;
Stage 3:   Took one part and used hard rock to grind - Grinding against rock softens and separates fibres;
Stage 4:   Separating fibres at one end of the stem to loosen into sweeping end; and

Stage5:   Sandpaper to smoothen one end of the broom to create handle.

(OBL2)

As mentioned previously, the lesson was focused on learners using a natural resource (palm stem) to create a product that they could sell. Throughout the broom making process there was no elaboration on the palm stem itself and its value as a natural resource. There was no elaboration on collecting the peel and shavings and reusing these as they were just thrown away (OBL2). There were also no discussions on furthering learners content knowledge of the palm tree, making the discourse again very product-orientated.

Using the knowledge Siyanda (a learner) had learnt from his father about broom making with palms was not unpacked to highlight to learners the value of indigenous knowledge.

4.5.2.2 Analysis of lesson plan and learners work

A study of the teacher's lesson plan, showed a lesson framed on Technology Learning Outcome 1 which requires learners to 'apply technological processes and skills ethically and responsibly' (DoE, 2002b:31). The selected Assessment Standards, 1;2;4;5;6 also show an intent to involve learners in 'investigating background context; the environmental situation; examining existing products considering environment and safety; investigates and plans a strategy and writes a design brief' (DoE, 2002c:33-36). However, a study of learners' work reveals activities where learners create a product to make money as reflected in activity 1 'solutions to get money' (LWL1). This reflects a narrowed and transformed discourse. This shift from the policy discourse is also noted in the core knowledge listed on the lesson plan, which states:

> *Natural resources found locally can be used to satisfy the needs of our community.*
> *(C3 LP).*

The above statement again reflects a change from the policy discourse which wants learners to consider their solutions to a problem, based on cost, safety and environment where the product will be used or made and the impact on the environment considered (DoE, 2002c).

Evidence of a transformed discourse is also noted when examining the integration listed in the teachers' lesson plan (C3LP):

> ***Natural Science LO1*** *- The learner will be able to demonstrate an understanding of the interrelationships between science and technology, society and the environment.*
>
> *-   AS2 - Understands sustainable use of the earth's resources: Analyses information about sustainable and unsustainable use of resources (C3LP).*

'Sustainable use of natural resources' is also listed as a core concept and context of this lesson plan (C3LP), however, this is not evidenced in the learners' work. Both the written tasks and the making task focused on the product with no emphasis on the natural resource and its sustainable use.

Thus, although the teacher lists 'sustainable use of natural resources' as a core concept of this lesson, this is not what is evidenced in the learners' work or from the lesson observation.

The lesson plan also highlights that learners will use their 'background knowledge' and parents would 'share their indigenous knowledge' (C3LP), this was however done through a learner during the lesson. The indigenous knowledge about palm trees was transformed into a discourse that focused on making a product that could be sold for profit as can be evidenced in the observations and from learners' task on designing their brooms (LW L1).

4.5.2.3 Interview with educator

The ideological positioning of the educator could be gauged from the following quotation, 'I see my role as a technology teacher, as to bring hope to the hopeless; bring them light and hope' (C3InT). He thus positions himself as a person that can bring change to the lives of his learners. This is further evident in his framing of his approach to Technology; 'I focus on Technology in order to solve community problems' (*ibid*). A strong social change and community problem-solving ideology influences the work of this educator. The educators' framing of environmental issues, 'the most important environmental issue we have is unemployment' also further illustrates this economically-orientated social change ideology.

The teachers framing of his role as a Technology teacher is further amplified in his framing of the Technology Learning Area, as 'one of the Learning Areas used to solve problems in the community, I focus on Technology in order to solve community problems' (C3InT). He thus transfers the social change ideology to the Learning Area and how he frames his ideas about the Learning Area. The strong problem-solving ideology that drives him is also evident in his conceptualisation of learning activities in the technology classroom, as discussed in broom making lesson observed and in the shoe making activity described in section 4.5.1.3.

4.5.3 Factors Influencing Recontextualising

From my knowledge of the school community and context (see section 1.5.3., Ramsarup, 2004), and the data reported above, I was able to identify the following factors influencing recontextualising in case 3:

- Context of the area the extreme poverty and unemployment in the area makes making money a key community priority in considering the communities sustainability (see also Ramsarup, 2004);
- The teacher himself and his ambitions to build the community and how he perceives his role within the community;
- Technology is a new Learning Area which teachers were not trained in, thus their content knowledge of the Learning Area and what the policy means in practice is not well established.

4.6   CONCLUSION

This chapter has attempted to tell three recontextualising stories. It has traced the relocation of the environmental discourse within the field of practice in each case and it has tried to follow and highlight the continuities, changes and discontinuities in the recontextualising processes through an examination of the selective appropriations and ideological transformations evident within each case. Each story concluded with a brief synthesis of some of the factors that could have influenced the recontextualising process, these will be picked up and elaborated on in the next chapter.

CHAPTER 5: UNDERSTANDING THE RECONTEXTUALISING PROCESSES

5.1 INTRODUCTION

In chapter 4, I outlined how the environmental discourse within the NCS (R-9) was recontextualised in the three cases. The data provided rich information on the appropriations, continuities, changes and discontinuities in the official environmental discourse, as it was recontextualised in the three case sites. It also provides useful insights into some of the factors that are driving/ influencing emerging recontextualising processes.

In discussing and responding to these experiences in the light of the research question (see section 1.4), I am guided by some of main interwoven dimensions that have emerged from the discussions of the cases in chapter 4. In this chapter I will try to explain some of these themes within the uncertain terrain of a transforming curriculum (as discussed in chapter two).

5.2 FACTORS THAT INFLUENCE OCCURRENCE OF SELECTIVE APPROPRIATION AND IDEOLOGICAL TRANSFORMATION

The main factors that will be discussed in this chapter are:

- Influence of context and history;
- Ideology and emphasis;
- Knowledge and experience; and
- Depth of engagement.

5.2.1 Influence of context and history

In all three cases the socio-historic positioning of the 'organisation', and contextual influences had a significant impact on recontextualising processes.

- *Case 1*

Written within the context of a National Department of Education, the training manuals provide the 'official guide for provinces' (see section 1.5.1). This policy-making context has had significant impact on the writing approach of the training manuals, as the data reflects a strong policy emphasis in the recontextualising with the explaining of elements of policy, definitions, clarifying policy terminology, formats and structure for planning but very little

evidence of how to apply policy and few ideas for practical application are provided.

This observation of the 'overemphasis on policy' was also noted by the HSRC in its review report to the DoE (HSRC, 2005b: 4). As highlighted in the interview data, staff at the DoE have no contact with schools (see 4.3.2.1), and information on the status of policy implementation is not readily available to them, hence their policy recontextualising has less of a focus on school practice and school-based application (see section 4.3.1 and 4.3.2).

As reflected in the socio-historical review in chapter 2, the education doctrines prior to 1994, were content-centred, with a conservative curriculum based on rigidly defined school subjects whose purpose was the unquestioned transmission of syllabus content through rote learning (Kraak, 1999:23). Emerging from 19 separate departments (*ibid*) with vastly different symbolic capital, educators in the National Department of education face a situation where their work is requiring them to articulate educational ideas they themselves have not experienced, placing them in a position where there is discontinuity between their previous practice, their symbolic capital and the vision of the new curriculum.

Also highlighted in the socio-historical review in chapter two, is that prior to 1998 there was little evidence of environment within curriculum or within the practice of the Department of Education as articulated by Clacherty (1993a:3), education departments had not embarked on any active involvement in environmental education. Some of the concerns raised by Clacherty *(ibid)* were that Education Departments did not really understand the concept of environmental education; there was a misconception of what environmental education implies in practice as officials saw environmental education as a bush experience and that education departments saw environmental education as a separate entity. The presence of environment as an integral design feature of curriculum policy (the OPD) is still fairly new in South Africa (see section 2.2.4.3) and as articulated in the lessons from NEEP-GET (section 2.4.2.2) initiatives are still needed to support curriculum staff to 'make sense of and apply this focus to their curriculum work'.

- *Case 2*

The Delta Environmental Centre has been focusing on environmental education for the last 30 years with a vision to 'enable people to improve the quality of their environment by promoting the management and sustainability of all resources through innovative education and training programmes' (DEC, 2005). DEC has thus had a long intensive history of providing professional development for teachers to integrate environmental issues into curriculum policy (see section1.5.2). NGOs as environmental education partners have played a significant role in supporting the environmental focus in curriculum in South Africa

(see section 2.2.2.6; 2.2.3.1; NEEP-GET 2004a; 2005a). Thus DEC's history has emerged from a strong base of environmental education practice and curriculum work.

The contextual influence of being part of a broader environmental education pedagogising community is very evident in DEC's appropriation of the discourse. There are elements of the approaches emanating from the work of the environmental education community, namely the use of a four-dimension model of environment, active learning (O' Donoghue 2001, NEEP-GET, 2005), (see section 2.2.3.1; 4.4.1.2) dominating DEC's interpretation of the environmental discourse.

Working at the school level has influenced the recontextualising process greatly and the data reflects a more localised emphasis during workshop activities. DEC's work with the environmental discourse in schools has enabled them to work with teachers with real issues borne out of school contexts, thus promoting a strong discourse of relevance and context (see section 4.4.1.2; 4.4.2.2.).

- *Case 3*

Mashiwase Primary is situated in a low-income rural area, south of Durban (see section 1.5.3). The socio-economic context of the school was very influential in the recontextualising processes and elements of the influence of the community context are reflected in various segments of the findings, how many learners come from homes with unemployed parents; how the teacher saw his role in the community and the dominant ideology of community upliftment (see 4.4.5.1.1.). This dominant ideology of community need underpinned the selective appropriation of the environmental discourse as a community problem-solving discourse and subsequently its ideological transformation to an economic discourse, amplified by the teachers' appropriation of 'money as one of our needs'. This observation can be linked to Neves (2004) contention on the influence of economy as one of the drivers in recontextualising processes. The teacher's interpretation of the Technology outcomes and the framing of his lesson (see section 4.5.2.3) are influenced by the socio-economic context of the community.

The observations in this case support Neves and Morais (2001:226) contention that within the field of reproduction, knowledge and discourse is further subjected to ideological transformation due to the specific context of the school; pedagogic practice of the educator and the relations between schools and family and community contexts. This highlights that the way discourse is reproduced in classrooms is greatly influenced by the relationships that characterise its particular transmission context. This case highlights how the school's rural, poverty stricken context dominates the recontextualising process and forges new

relationships between school and community based on the need to address community issues.

5.2.2   Ideology and emphasis

Strong ideological orientations were identified as another key driver of the recontextualising processes.

- *Case 1*

A deliberate coming together of both educational and political aims in the framing of education and environment policy is noted within the 'new' South Africa as discussed within the framing of People's Education (see section 2.2.1.3); the new South African Constitution (see section 2.2.2.2), the development of environmental policy evident in the White Paper on Environmental Management which stated, 'the new vision sought to address: the quality of people's lives' (see section 2.2.2.3.) and eventually into NEMA which 'places people and their needs (physical, psychological and developmental, cultural and social) at the forefront of environmental management' (see section 2.2.2.4). Thus the dominant state ideology of responding to people's needs in creating a different post apartheid South African society permeates strongly throughout the findings in this case. This ideology drove the interpretation of the Technology Learning Area training material, with its strong emphasis on learners' making/building/developing technological solutions to 'enhance the made world', with no mention of social and environmental responsibility (see section 4.3.2.1). This ideology is further emphasised in the way the first principle (see section 2.2.4.3 for elaboration) was interpreted and recontextualised within all three selected training materials; it was continuously fragmented into four separate terminologies and very superficially dealt with. In explaining the first principle in Life Orientation training material, the materials highlight only issues such as 'sensitive to issues of poverty, inequality, race, gender, age, disability and such challenges as HIV/AIDS; all learners are to be treated equally and with respect irrespective of race, gender, age, disability' (DoE, 2005b: 35).

This trend of a people first ideological discourse is embodied strongly within other learning and teaching support material at the Department of education. In a teacher's guide to support the NCS (R-9) titled Values and Human Rights in the Curriculum (DoE, 2005d:10) it states that 'the principles on which the National Curriculum Statements are based essentially reflect a promotion of the culture of human rights, inclusivity and social justice'. In describing the approach to this principle within curriculum, the guide highlights that the 'result (within the curriculum) is a horizontal and vertical relationship between outcomes for human rights, inclusion and social justice and the rest of the curriculum (*ibid*)'. This clearly illustrates that

the broader appropriation of the first principle within the National Department of Education is very focused on a fragmented approach with a neglect of the healthy environment discourse. The above discussion also illustrates how an official policy discourse is converted to pedagogic discourse, and how the dominant ideologies at the macro-level (state/constitutional discourse) translate to pedagogic discourse at the meso-level within the ORF (Ensor, 2004). A further example of ideological transformation is reflected in the internally dominant inclusivity discourse, which permeated throughout all three sets of materials studied. Evidence in all three sets of materials highlight that when focusing on interpreting the first principle, the activities done in the training materials focused on inclusivity only, giving inclusivity a very dominant role within the framing of the first principle and simultaneously negating the emphasis to *relationship* that is articulated in the first principle. The strong commitment to inclusivity can again be linked to a state political emphasis, as noted in the policy framework outlined in White Paper 6 on inclusive education (DoE, 2001a), which outlines the ministry's commitment to:

> …the provision of educational opportunities, in particular for those learners who experience or have experienced barriers to learning and development or who have dropped out of learning because of the inability of the education and training system to accommodate the diversity of learning needs, and those learners who continue to be excluded from it (DoE, 2001a:11).

Drawing on Apple's (2003) discussion of Bernstein's work, it is possible to explain that there is no simplistic linear model of policy formation, and implementation and that there are always 'complex politics' and 'complex mediations' at each level of the process that drives recontextualising.

- *Case 2*

Ideological drivers evident in the DEC case study arise from the pedagogical discourses emanating from the environmental education community, especially the discourse of using the curriculum as a vehicle for change in the school environment, which can be described as a form of social change. This driver for social change in school /local environments manifests as a practice-based discourse strongly focused on local, real issues. This represents a significant shift from curriculum practices prior to the NCS (R-9), with the strongly subject based rigid content-centred curriculum, whose purpose was the unquestioned transmission of syllabus content through rote learning (Kraak, 1999:23).

This ideological approach can be linked to work in the NEEP–GET project (see section 2.4.2.2.) were the advocated approach saw teachers being encouraged to use active approaches to learning (O' Donoghue, 2000) so that they could create learning opportunities

that allowed learners to find out, investigate and take action on environmental issues in their local environments (Lotz-Sisitka, Timmermans & Ward, 2004:34). Thus we see a broader use of the constructs, of real local issues that form the basis of DEC's pedagogsising.

This ideological construct of using the curriculum for change also manifests in the DEC study in their whole school approach to environmental learning (see section 4.4.1.1). DEC's ideological transforming of the environmental discourse, to 'get the school to take environment into all their planning, thinking and into all the Learning Areas so that there is complete synergy across the whole school from the management right through to classroom practice' (FP4) can be linked to other dominant discourses within environmental education in the PRF.

From the socio-historical review, and the work done by the EECI (see section 2.2.3.1) encouraging schools to develop school environmental policies, we see environmental education practitioners encouraging 'local, critical contextual action in school–community contexts' (Lotz-Sisitka, 2002). The EECI's Update (August 1999) report of schools conducting an audit of their schools, formulating environmental policy statements and using these as curricula contexts for teaching, can also be linked to this dominant ideology. The current Eco–Schools[5] programme, currently involving approximately 700 schools across the country, builds on the above process and involves schools together with their educators, learners, parents, and members of school governing bodies in processes of whole school planning that can set priorities for learning actions and inform learning programme development (Lotz-Sisitka, Timmermans & Ward, 2005:36). DEC has, for a number of years, been supporting schools to develop school environmental policies and they now support schools with the Eco-School programme.

This potential of 'environmental education as an organizing concept around which to mobilise communities' was also acknowledged by the National Department within the Report of the Ministerial Committee on Rural Education which highlighted that:

> Environmental concerns have a clear potential for underpinning an approach based on enhancing community 'assets' (as opposed to remedying 'deficits'). The success of the Eco-Schools programme, albeit on a small scale, demonstrates how a fairly simple and cost-effective programme can strengthen community participation in schooling and unleash the potential for integrating knowledge across Learning Areas in ways that promote learner activity (DoE, 2005e: 18-19).

The ideological construct driving DEC's recontextualising of the environmental discourse as

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[5] The FEE *Eco-School* program currently represents the largest internationally coordinated whole-school EE program. Schools undertake a process to work towards a Green Flag certification.

a whole school improvement discourse can be linked and is rooted to dominant discourses in the broader environmental education community, who have for a long time been recontextualising agents in the PRF (see section 2.4.).

- *Case 3*

Drawing on the context of the rural community (see section 1.5.3, section 5.2.1.) the educator frames his role from an ideological position of a teacher that will 'bring hope to the hopeless' (C3InT). The ideological drivers, shaping his interpretation of the curriculum appear to be the creation of a more sustainable community through various community problem-solving initiatives viz. shoe making (see section 4.5.1.3) and broom making (C3InT). The ideology driving this teachers' discourse is further evident in his appropriation of the Technology Learning Area, as 'one of the Learning Areas used to solve problems in the community, I focus on technology in order to solve community problems' (C3InT). Thus we see a transfer of this social change ideology to the Learning Area and how the teacher frames his ideas about the Learning Area. This community problem solving ideology is also evident in his conceptualisation of learning activities as evidenced by the title of the activity listed in the lesson plan 'solving basic human needs by making brooms' (C3LP). Thus we can infer that there are two strong drivers of the recontextualising in this lesson, the context of the area (see section 5.2.1) and the individual teacher. This case example illustrates how the ideological positioning of an individual can drive curriculum recontextualising processes.

This ideological drive which could be aligned to socio-critical[6] pedagogy, has important potential in this community as it highlights and draws 'attention to the socio-political and economic dimensions of the issues' the community is facing and tries to focus on learning through taking action to address environmental issues thus enabling community action (Janse van Rensburg & Du Toit, 2000:39). However, as cautioned, this approach has limitations especially if the educator holds too strongly to critical–structuralist explanations of issues then there is a tendency to interpret everything through an ideological lens (Janse van Rensburg & Du Toit, 2000:39). This is evident in this study where the educator is seeing his role, the Learning Area goal and the Learning Outcomes through the ideological lens of solving his community's problems. The drive to address community issues thus transforms the policy discourse. This dominant socio-critical orientation to environment is also likened to Giroux's (1993) notion of 'teachers as agents of change', where one works to remove social inequalities, promote democratic values in classroom and learn to be both educator and

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[6] An orientation to education that sees schools and teachers as active members of society who, through action, help to create what Huckle (1983) called a fairer, less troubled world. It sees a reciprocal relationship between school and society, where formal education is shaped by, and is responsive to needs of society which in turn shapes society (Fien, 1993:23)

activist who sees reform as an integral part of the social, intellectual, ethical and political activity of teaching (Janse.van Rensburg & Mhoney, 2000:52-53).

5.2.3 Knowledge and experience

- *Case 1*

Although interviewees could respond by stating that environment is a broad concept and provided examples like it deals with 'individual, social, societal and environmental health' (C1In1) and 'issues around land, health and water, economy and mining' (C1In2) only one interviewee highlighted a relationship between the elements they had listed. It was also surprising that none of the interviewees made any link to the first principle when reflecting on the environmental discourse in their Learning Area. From a study of the emerging recontextualising processes within Case 1 (see section 4.3.1.1.), it is possible to infer that individuals involved in the recontextualising process in the ORF (within this case example) do not have extensive experience and knowledge of working with the environmental discourse within the NCS (R-9) and translating the policy discourse to pedagogy. A policy in practice gap influencing recontextualising is highlighted by Lotz-Sisitka (2005) and Hattingh *et al.* (2005) where they both separately comment on the disjuncture between the intended curriculum and the real curriculum (see section 2.4). Data from the individuals interviewed, supports this assertion, 'we don't know environment, we don't know what's happening on the ground' (C1In2). The data also illustrates that the recontextualising is impacted on by what is seen as lack of background information on environment '…[we] need to have a background on environment only then as a teacher will I be able to plan projects that incorporate these things…[we] need theoretical background on how to develop actual lessons' (C1 In3).

Supporting the above statements, are various references to the inability within the system to translate the environmental discourse into classroom practice, viz. '[teachers are] not aware of what is happening around them, what opportunities there are and how to bring that into the classroom…[and are] very dependent on books (C1In3). When officials move beyond the writing of materials into the training process we see that 'in training of teachers [environment] is not reflected at all because no one really knows how to. Without a body to push it, without that it is forgotten … its just words on paper' (C1In3).

This is also observed in the recontextualising of the environment discourse within the Grade 7 training materials. When relocating elements of the discourse, it was not meaningfully engaged with, there were instances were terms such as 'sustainable development'; a more 'environmentally and socially responsible society' were used but not engaged with in any way. The terms were not engaged with to the level of developing pedagogy, they were just

superficially placed within the training material.

The recontextualising also demonstrates that there is not a clear concept of the environmental focus in the Learning Areas. One interviewee noted that environment was represented in Learning Outcome three only, in the unpacking of Learning Outcomes and Assessment Standards and in the unpacking of the first principle there was no substantial pedagogising of the environmental discourse within the Learning Area (see section 4.3.2.1.).

In the studies of both Olivitt (2003) at the level of teachers and Mbambisa (2005) at the level of curriculum advisors, it was found that research subjects were unfamiliar with the environmental discourse and 'do not appear to be confident in dealing with environmental issues' Mbambisa (2005:119). Olivitt *(ibid)* found that teachers in the schools she worked with were unfamiliar with developing curriculum activities with an environmental focus and none had been on training where these issues were dealt with by curriculum advisors. This was supported by learnings from the NEEP–GET project that found that initiatives were needed to support curriculum staff and teachers to 'make sense of' and to 'apply' this focus in their day-to-day curriculum work (NEEP–GET, 2005a:8). The NEEP-GET further recommended that essential in helping advisors to better understand the environmental discourse is the 'need to support educators to develop foundational knowledge of environmental issues and risks' as educators often 'resort to old knowledge' when working with environmental issues (NEEP–GET, 2005b: 7). The inability to pedagogise the first principle within the Learning Outcomes discussed above was also noted by Olivitt (2003) who highlighted that educators struggled to articulate teaching and learning activities with an environmental perspective that had to foreground issues such as social justice and democracy. The NEEP–GET project also found educators needed support to understand environmental issues and risks (from local, national and global perspectives), and from within the human rights /social justice framework (NEEP-GET, 2005b: 5).

The discussion above highlights that within the system there is inadequate knowledge and experience of the environmental discourse within the NCS (R-9) to translate this discourse to practice, especially the more recent articulation of a social justice approach to environment. This need/gap has an impact on the recontextualising of the discourse.

- *Case 2*

Data within the DEC case study reflects a long extensive history of experience with environment in curriculum, as active members within the South African environmental education community (see section 1.5.2 and section 5.2.1.). Drawing on this vast extensive experience we see an appropriation that reflects an environmental discourse that is integral

to teaching and learning processes in a Learning Area and meaning making is within the context of the Learning Outcomes; Assessment Standards and lesson planning. As evidenced by the following statements, extracted from the focus group interviews:

> It [environment] has really been threaded all the way through in a number of different ways. ... It has got to actually be a continuous thing, almost like it could be a golden thread that goes through the whole years work, much more integral. … it is almost a different way of handling subject matter (FP4).

This appropriation of environment as being integral within the Learning Area content was further supported by another participant who highlighted that within the NCS (R-9), 'the environmental stuff was part of the broader learning process' (FP1) and environmental learning is within the context and 'alongside all the other stuff that is happening' (FP1) (see section 4.4.1 and 4.4.2).

Pierre Bourdieu's (1986 as cited in http://en.wikipedia.org/wiki) concepts of social and cultural capital are relevant to understanding the recontextualising processes evident in DEC's work. Bordieu defined social capital as 'the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition' and cultural capital encompasses forms of knowledge; skills; education; any advantages a person has which give them a higher status in society(*ibid*). Being part of a broader environmental education community provided DEC staff with rich social and cultural capital, hence the attitudes and knowledge that made the environmental disocurse a more familiar comfortable discourse to work with within the NCS (R-9) discourse.

Evidence of a broader knowledge of the discourse drawing from experiences in the PRF (see section 2. 2.2.3, section 2.2.2.4), can be seen in the broad holistic conceptualisation of environment as a four dimensional concept, prominent during the EEPI and its publication, 'Environment, Development and Environmental Education' released by EEPI in 1993 which explores some of key ideas and trends in environmental education (O' Donoghue, 1993). This was further evidenced within the Learning for Sustainability (see section 2.3.1.) and NEEP-GET (see section 2.3.2) projects where this model consisting of social, ecological, political and biophysical dimensions was extensively used as a 'start up' activity and became an important reference point for deliberations on environment within the projects (NEEP-GET, 2005a: 9). This provides evidence of a model developed and used in the PRF, being appropriated into the policy discourse and becoming part of the OPD (see section 2.2.2.4).

Support for analysis of contextual issues, evident in the DEC recontextualising was similarly advocated during the NEEP-GET and LfS projects. In the NEEP-GET project, drawing on experiences from the Rhodes University/Gold Fields Participatory Course in Environmtal Education, educators were supported to explore the contextual nature of many environmental issues through an exploration of nature,causes and effects. This issues based approach evident also in DEC's recontextualising enables issues to be explored in greater depth, so that issues are not superficailly dealt with.

Malcolm (1999) highlights the importance of having reliable capital, especially to have capacity for 'situational contingency', being prepared for the unexpected learning opportunity, a window to explore new ideas with learners. He also highlights that developing curriculum to suit learners has to be designed by people 'on the spot'. Thus the extensive knowledge DEC staff have about the environmental discourse allows them to work with schools to develop relevant contextual curricula using real local issues that schools have identified, not simply adopt a one size fits all approach. Contextual approaches to curriculum are very evident within environmental education discourses as embedded within the intention of environmental education, is the need to motivate learners to take action to address environmental issues and change their personal lifestyles (Greenall Gough & Robbottom 1993, as cited by Janse van Rensburg, 2000). School-based curriculum development was also a strong focus within EECI (see section 2.2.2.4) and the LfS (see section 2.3.). This 'shift enabled more open-ended, contextually responsive learning processes in schools' (Lotz & Olivier, 1998 as cited in Lotz–Sistitka, 2002:108).

DEC's use of the Active Learning Framework piloted within NEEP-GET to enable educators to create curricula that allows learners to find out, investigate and take action on environmental issues in their local environment (O' Donoghue, 2001), again acknowledges the knowledge capital of the broader pedagogising community. Lotz-Sisitka, Timmermans and Ward (2004:34), also highlight that using the active learning approach fosters situated learning processes, which allows learning to be culturally, socially and historically situated.

- *Case 3*

When questioned on how he saw environment within the NCS (R-9) the teacher was able to articulate a reasonably broad view of the environment discourse within the different Learning Areas (see section 4.5.1.3). He, however, made no reference to the first principle. A careful look across all the data collected in this study reveals that the educator did not have a strong background knowledge of environment and the appropriation of the discourse in the NCS (R-9) was noticeably ideologically transformed. As evidenced by his random use of elements of

the discourse, such as 'sustainable use of resources' without actually unpacking this idea and following it through in his lesson plan; talking about 3 Rs (C3InT) and engaging learners in collecting and sorting waste, but not elaborating on the environmental learning embedded within these actions. Although it was evident that the educator knew the technological design process, his knowledge of the environmental discourse embedded within, of examining environmental impact, (see section 4.1) was not very clear. He thus lacked the symbolic capital to tease out the environmental learning embedded within the learning actions; hence we see a lost opportunity for the environmental discourse. During the broom making process, the broader learning about the natural resource (palm tree) they were utilising and the learning about natural resources never materialised in the lesson, which was focused on making a product that they could sell. Thus we see that the evident dominant discourse has adopted a dualistic notion of environment where people needs and ecosystem needs are separated. This is also evident in the educator's statement that 'the most important environmental issue we have is unemployment' (C3InT). His knowledge of the discourse (I would argue) is thus not rooted in emphasising the *relationship* between people and ecosystems as articulated within the NCS (R-9) but rather very strongly focused on the social, with a very strong people focus. This is congruent with Sterling's (1990) ideas (cited in Fien 1993:44) who argues that the political ideology rooted in ecosocialism[7], loses vital insights and principles such as integrity and unity in diversity of ecosystems and the importance and interaction of personal well being in relation to human and natural systems. These are lost in the emphasis on social and economic structures and its dualistic view of people and nature.

Through the pedagogical choices of the teacher, the ideological message embedded in the recontextualising of the policy discourse is one of addressing human needs.

5.2.4 Depth of engagement

- *Case 1*

The recontextualising of the environment discourse reveals a superficial 'marking' of the discourse within the training materials with elements being randomly stated and little evidence of these being carried through to development of pedagogical activities. As discussed in section 4.3.1.1, in both the Generic and the Technology training materials, there were 'catch all' questions given, but these were not engaged with at all. Thus in reality, they become questions on paper that are not meaningfully and critically engaged with. The

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[7] Environmental ideology that seeks to integrate ecocentric ideology, with the material or economic conditions of society (Fien, 1993:28).

data indicates various instances (see section 4.3.1.1) were elements of the discourse are reproduced unchanged, with no evidence of it being developed into pedagogy. In the Technology training material, it is stated that in projects, participants should consider environmental and social contexts, but as the activity unfolds this is never actualised within the design process of the projects. In the unpacking of Learning Outcomes and assessment standards to reflect embedded skills, knowledge and values there is again no evidence of the environmental discourse being integral to the core skills, knowledge and values of the Learning Outcome.

In all training materials studied, the environmental focus in the Learning Area only appears to be relocated within the discussion of principles and 'the environment Learning Outcome'; there is no evidence of relocation of the discourse in assessment, and into the Learning Area content in learning programme development and other parts of the planning process. This indicates a separation of the core Learning Area content (the Technology design steps) and 'other things' you could consider like environment. There appears to be set ideas of what core knowledge and content constitutes the Learning Area, and then there seems additional things like environment that are added in, but in the pedagogising of the discourse there is little evidence of environment being integral within the discussion of the core content and the planning process, as indicated in section 4.3.1.1: These observations are supported by the findings of study undertaken by Olivitt (2003) who notes that without concretely linking activities to the Learning Outcomes and understanding why the curriculum links were being made, and how they related to the learning programmes environmental focus, the curriculum work still promotes the idea that environmental activities occur 'outside of' the regular curriculum (Olivitt, 2004:22).

Knowledge and experience discussed in section 5.2.3, also impact on the way the discourse is engaged with. Research within the NEEP-GET project also linked the depth of engagement to knowledge. The project found that the lack of foundational knowledge on environmental issues also impacted on the scope and depth of outcome interpretation and ultimately the Learning Outcomes of learners (NEEP-GET, 2005b: 9; Lotz-Sisitka & Raven, 2001).

- *Case 2*

The DEC recontextualising reflects an environmental discourse that is embedded within the context of the Learning Area and the focus is on planning, assessment and assessing one's own curriculum development work. When describing their work, staff outlined that they focus on working directly with the policy documents (FP1) trying to get teachers to see the

environmental opportunities within various Learning Areas (FP3); and working with teachers to explore the documents, interpret and think creatively around them (FP4). From this in-depth exploration staff focus their work with teachers on 'current active learning approaches to help teachers with practical ideas around curriculum implementation' and thus help with 'ideas of how to bring the assessment standards to life' (FP1). Thus, we see a recontextualising process deeply rooted in interpreting and meaning making of the policy discourse. The approach can be aligned to the NEEP-GET recommendation that 'Learning Area in context' was a good starting point for school- based curriculum development, which it highlighted involved an in-depth exploration of the environmental focus within the Learning Area and a knowledge of contextual issues (NEEP-GET, 2005b: 4). The NEEP–GET project also highlighted that when educators clearly understand the environmental focus in the Learning Area there is more potential for integration. This can be seen in the teachers' work shown in the mind-map (see section 4.4.2.2) where after spending time clarifying the environmental focus they were able to mind-map the wide-ranging possibilities for using their school grounds for curriculum work. The scope and depth of outcome interpretation is also dependent on the foundational knowledge of educators about environmental issues and risks (NEEP-GET 2005b: 9; Janse van Rensburg & Lotz-Sisitka, 2000). As discussed in section 5.2.3, the knowledge and experience capital of DEC staff enable a deeper engagement with Learning Outcomes and Assessment Standards.

The appropriation of the healthy environment discourse from the NCS (R-9) as a two-pronged concept, the school environment and the learning environment that is evident in the DEC recontextualising (see section 4.4.1.2.) reflects a strongly practice-based discourse that is focused on policy in practice. Practice within this study is also interpreted as all aspects of school practice viz. management, classroom environment and school grounds as is evident in the discussion in section 4.4.1.2.

This approach can be linked to whole-school programs with their focus on school development, such programs aim to support schools to tackle a range of complex and diverse sustainability issues in addition to school grounds, such as school governance, pedagogical approaches, resource consumption and curriculum issues (Henderson & Tilbury, 2004:11).

In the school reports reviewed, there emerged a strong focus on using the school grounds to enable better curriculum practices and encourage school change (see mind-map section

4.4.2.2). The Learning through Landscapes (LtL)[8] project found that 'the process of participative school grounds development can support students' learning and skills, development, build students' self-confidence, and contribute to wider changes in the school' (LtL 2003:2 as cited in Henderson & Tilbury, 2004:11). Drawing on Evergreen, (2000) Henderson and Tilbury (2004:11) argue that these programs bring school communities together to transform school grounds into healthy, natural and creative 'outdoor classrooms'. This approach in creating opportunities for the school grounds to become outdoor classrooms provides students with a healthy and safe place to play, learn and develop a genuine respect for nature and each other (*ibid*) thus highlighting the social and curriculum change potential of this approach. Thus from this discussion we see that the depth of engagement reflected in the recontextualising of the discourse within DEC's work focusing on working on schools and other local issues promotes an agenda of school improvement. This illustrates examples of how the discourse is practically implemented, engaged with and how meaningful learning activities can be developed from real issues.

- *Case 3*

As a result of an from inadequate concrete background knowledge on environmental issues and risks, the teacher's engagement with the environmental discourse did not reflect any great depth of engagement. He drew in isolated elements of the discourse but these concepts were not engaged with, in any depth, for example:

> Went out to pensions points which needed to be cleaned; we collected waste weighed it, sorted biodegradable/non biodegradable. We used biodegradable to form compost. The strong cardboard we used for shoemaking. Made shoes using cardboard. Learners used cardboard to measure and design shoes. They evaluated the cardboard shoes and then explored other options. We then collected old shoe and shoe soles, collected leather cut-offs and used these as scrap leather. To stitch we had no money, made needles from old broken umbrella wires, which we sharpened. To stitch used fibres of Aloe, since they have strong veins, we used this as thread. I taught them to cross-stitch and they stitched their shoes. Rather than buying we can use what we have in environment, so we cleaned up and that gave us material to use (C3InT see section 4.5).

If we study the above description, there is evidence of many fragmented parts of the discourse. Within the data generated for this study, the educator did not expand nor explain how he built on these actions so learners could develop better foundational knowledge about natural resources; waste management principles or principles of creating sustainable

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[8] The LtL program was set up as a national school grounds charity in1990 in Britain. LtL began a series of school-ground improvement programs, now known as Sustainable School Grounds, to enhance educational and environmental interactions.
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communities. Although the lesson plan reflects integration with Natural Science and highlights the core concept as 'sustainable use of recycled materials and sustainable use of natural resources' (C3LP), these concepts were never engaged with, there was no engagement with the ideas of renewable and non-renewable resources nor with the scientific knowledge of the plant they were using. Within the Learning Area the lesson focused on the Technology design process steps but during these stages the teacher did not explore factors to consider like environmental impact, nor was the environmental discourse considered in the decision making process as required by the Technology Learning Area statement (see section 4.5).

Although learners were actively engaged in producing a product, following the technological design steps, the lesson did not illustrate deep engagement with the environmental discourse.

5.3   CONCLUSION

In this chapter I have tried to make sense of the recontextualising processes observed and outlined in chapter 4. Using the emerging themes of what factors appeared to drive the recontextualising processes, I drew on available theory and past research to look to 'look behind and within' and open a vantage point on the story of how curriculum is actually created by different educators in the three different contexts under study.

In the next chapter I will draw on these discussions and reflections to summarize the study and make more case specific conclusions and recommendations, based on the data.

CHAPTER 6: SUMMARY AND RECOMMENDATIONS

6.1. INTRODUCTION

Starting out with a question of how official pedagogic discourse (environment discourse) is recontextualised within three different contexts, this study traced three unique stories of emerging recontextualising practice. In this chapter, I will provide a summary of the three recontextualising stories highlighting the main findings relevant to each case. Through synthesising these findings, I will make some tentative recommendations within each case[9]. I also reflect on the methodology, and provide methodological recommendations.

6.2. CASE ONE

6.2.1 Summary of the case

This case focused on the recontextualising of the environmental discourse within the Grade 7 training material in the ORF. The findings in this case have highlighted that recontextualising processes within the training material studied reflect a narrow, fragmented and somewhat uncritical engagement with the environmental discourse, which is an integral part of the OPD. The analysis of the materials have highlighted various instances of superficial marking of the discourse within the material, where elements have been reproduced and not engaged with, where elements within Assessment Standards are transposed into content with no pedagogical engagement, where elements of discourse were listed as values, links were not made to knowledge and skills thus not illustrating how it formed an integral part of the outcome. Evidence of narrowing of the discourse where key words and phrases were omitted in representing and interpreting Assessment Standards and where the first principle was fragmented and presented as separate terms tended to negate the intention of highlighting *relationship between people* and *healthy environments*. A narrowed discourse is also evident in the highlighting of people related issues without making a concrete link to the healthy environment discourse embedded within the curriculum statements and illustrating the interrelatedness of issues of social justice, human rights and issues of a healthy environment (see section 4.3.1 and section 4.3.2). There was also a noticeable pattern in all three materials studied that the discourse was highlighted in the discussion of the principles and in the 'environment outcome' (as in Technology), and there was a noticeable absence of any engagement with the discourse in planning and assessment. This highlights that the environmental discourse is still largely 'outside' of the

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[9] In making these recommendations, I emphasise the case specific nature of the recommendations, but also concede that these *may* be relevant in other contexts (Bassey, 1999).

regular deliberations on the OPD in the ORF. There is a separation of the environmental discourse and core Learning Area content in the pedagogising of the policy discourse and hence there is little evidence of environment being integral within the discussion of the core Learning Area content.

The study also highlighted that the lack of deep engagement and meaning making with the discourse, as seen in the summary above, is rooted in the fact that this is a new discourse within policy and educators working with the discourse have not had extensive experience and prior knowledge to draw on. Thus, educators without scaffolding are trying to interpret and develop pedagogy without environmentally-orientated symbolic and cultural capital.

The study also highlighted that the internally dominant inclusivity discourse is threatening the holistic engagement with the first principle and ideologically driving the recontextualising of the first principle and subsequently narrowing the policy discourse and its intent.

This study has thus illustrated experiences of recontextualising of the OPD within the ORF.

6.2.2   Recommendations

- **Professional development opportunities**

The study highlighted that educators need skills to enable them to teach towards the vision of the new curriculum and especially skills to enable them to develop pedagogy that actualises the environmental focus in the Learning Area. Thus the need to create professional development opportunities for educators within the ORF becomes evident. The professional development programmes could focus on:

- Improving foundational knowledge on environmental issues and risks;
- Developing a deeper understanding of the environmental focus in the Learning Areas;
- Planning and developing learning programmes, work schedules and lesson plans and that bring out the environmental focus;
- Planning for assessment that assesses knowledge, skills and values embedded within the environmental discourse; and
- Deeper understanding of the first principle and embedded relational dimensions of the principle within context of Learning Areas.

- **Clarify environmental focus within the Learning Area**

This is linked to the recommendation on professional development opportunities. The study highlighted that there is a need to strengthen interpretations and clarify the environmental focus so that educators within the ORF, develop clearer understanding of the environmental

focus within the Learning Areas. This is likely to ensure that the environmental discourse is dealt with in adequate depth and scope.

- **Clarify the first principle**

There is a need to clarify the first principle, especially the neglected idea of *relationship between* that is ignored*.* It needs to be articulated in practice (planning, teaching, learning and assessment), and within the context of the Learning Outcomes and Assessment Standards. The role and meaning of this principle within the context of all elements of the NCS (R-9) also needs to be clarified within the broader practice of the Department of Education.

- **Seeking balance and interaction between ecological and social**

To actualise the vision of the NCS (R-9) policy there needs to be a balance in engagement with social and ecological dimensions of the environmental discourse. As highlighted there is a tendency to focus on these separately, thus losing valuable insights on the interrelationship and interdependence between the two.

6.3. CASE TWO

6.3.1 Summary of the case

This case focused on recontextualising within the PRF, and examined the teacher education practice of DEC. The findings in this case highlight that appropriation of the policy discourse is very focused on the environmental discourse being integral to the teaching and learning process in the Learning Area. With DEC's focus being on Learning Area in context, meaning making when engaging with lesson planning using local issues is within the context of the Learning Area.

The findings in this case also illustrate the significant role of foundational knowledge and experience in shaping the recontextualising process. The cultural and symbolic capital of DEC staff being part of a broader pedagogising community has had a significant influence on the development and framing of their instructional discourse. They were thus able to interpret and engage with the environmental focus in the Learning Outcomes and assessment standards with notable depth. Drawing on this broader frame of knowledge and experience in the environmental education field, their recontextualising showed a more informed framing of the discourse and how to work with it in practice. This resulted in a

strong practice-based approach, focusing on practical ideas with an interest in how policy is applied within practice.

The findings also show a multi-faceted appropriation of the environment discourse to see a two-pronged approach where healthy environment is interpreted as learning environment and local environment, thus illustrating a broader approach to the discourse.

The findings also indicate that the strongly practice-based discourse is interpreted as whole-school practice from management to classrooms to school grounds. This multi-faceted approach also displays strong intentions for using the discourse to make changes to the local /school environment through curriculum. DEC's recontextualising sees them engaging schools in identifying relevant local issues and addressing these through the development of teaching and learning activities.

6.3.2   Recommendations

- DEC staff needs to acknowledge the strong social/school change ideology that is rooted within the DEC recontextualising and engage with this reflexively. They need to engage with the value dimensions of their programmes and clarify how they engage in values work with educators, to avoid ideological narrowing in their appropriations of the OPD.

6.4.   CASE THREE

6.4.1   Summary of the case

The findings in this case illustrate the influence of the transmission context on the recontextualising of the discourse where, in this case, the recontextualising processes are strongly linked to community and community needs. The compelling community need to alienate poverty manifested in the recontextualising as a strong economic discourse, influencing the framing of the educator's role, his conceptualisation of the Learning Area and the planning and development of lessons, and thus ultimately the Learning Outcomes achieved by learners.

Another finding emanating from this case highlights the role of the individual in the recontextualising process. This case illustrates the role of the educator as an agent in the recontextualising process where he puts himself in a role to be community champion and frames learning activities that position him and his learners in activist roles within the community.

The case also illustrates how a lack of foundational knowledge and symbolic capital impacts on the recontextualising and the depth of engagement with the discourse, as the teacher in this case was not able to tease out the potential environmental learning opportunities during the activities learners were engaged in. This resulted in superficial representations of the discourse, where learners were busy and were working on a project but not improving or building foundational knowledge around the environmental discourse.

6.4.2 Recommendations

- **Open-ended training – allow space for contextual influences**

Noting the dominance of contextual influences that emerged in this case, it is essential that teacher training and resource material for teachers in this case context (and possibly in similar contexts) be sufficiently open–ended to allow creative space for teachers to take up and respond to their unique socio-historical, economic, political and pedagogical context in shaping learning experiences, while also developing a broader knowledge and experience of curriculum requirements that are not framed by the educators existing capital only.

- **Balance between social and ecological**

In communities facing grave social issues (such as the one in this case), there would seem to be a natural tendency to focus on the social. However, to deal with these separately from ecological issues and maintaining healthy environments would seem to undermine the policy discourse. Emphasis should be put on supporting teachers in this case context (and possibly in similar contexts) to strive to maintain a balance between social and ecological in their framing of learning experiences.

- **Creating professional development opportunities for educators**

In this case, it would seem that professional development opportunities that develop teachers' foundational knowledge of the environmental focus within Learning Area is needed to enable the teacher to see the environmental focus embedded within the Learning Area and Learning Outcomes. These professional development opportunities should also look at how the environmental focus is integral to planning teaching, learning and assessment and create opportunities/spaces for the educator (and others in a similar position to him) to be more reflexive about their practice.

- **Clarifying values and ethics within recontextualising practices**

Educators dealing with grave social issues as seen in this case need to be supported to build their reflexive capability so that they may be able to engage more actively in examining and interrogating their value positions within their curriculum work.

6.5. REFLECTING ON THE METHODOLOGY

6.5.1 Summary on methodology

Although this study used a small part of the Bernstein framework, it provided conceptual constructs that could be systematically applied in the analysis of the various available data from the different case studies. The theoretical framework also provided me with a 'coherent lexicon of conceptual constructs with which to describe, to discuss and to report all aspects of the study' (Short *et al.,* 2000). By utilizing the ideas/constructs of selective appropriation and ideological transformation, I was able to 'look into' each case and get a perspective of how to explain and frame the recontextualising practice in each case. This allowed me to analyse recontextualising processes further and through this, identify key facets that appear to shape recontextualising processes relevant to the new environment discourse in the OPD.

6.5.2 Methodological recommendations

- This study has illustrated that Bernstein's theoretical framework would be an appropriate methodology for the investigation of a sample of cases of this type (short mini studies) or for researching a small number of cases in depth over long periods of time. It thus recommends that the framework provides new and easy to use tools for environmental education curriculum work.

- There exists great potential to utilise the framework to analyse the sociological messages and power discourses that are embedded in the recontextualising practices. This is crucial in a discourse like environmental education that has strong social change agendas and values at its core.

- The study thus recommends that this would be a useful framework to use to do more work on reviewing the value discourses within the NCS (R-9) and how these are recontextualised in practice.

6.6. CONCLUDING SUMMARY

In setting out to understand how a discourse is recontextualised, this study reported on three unique stories that narrated recontextualisations of the OPD in three different recontextualising spaces (the ORF, PRF and field of reproduction). The study has illustrated that policy interpretation and appropriation is a very dynamic process influenced by various factors viz. context and history, foundational knowledge and experience of the discourse in practice and clearly apparent was the role of ideology in driving recontextualising processes. The study also highlighted that depth of engagement and real meaning making was very

dependent on knowledge of the discourse and experience with the discourse in practice and that, without these, there is a tendency for superficial engagement and cursory references in texts.

The study's findings try to show how people are interpreting, appropriating and creating pedagogy. These are useful insights during a time of policy transition as they provide valuable lessons that can inform policy rollout and teacher training within the ORF, professional development activities in the PRF, learning and teaching support materials development in both the ORF and PRF and the framing and conceptualization of environmental education practice in the field of production, and more generally.

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ANNEXURE A – GUIDELINE QUESTIONS FOR FOCUS GROUP INTERVIEW

Guideline questions for focus group interview: DELTA 11 August 2005
E-mailed to participants on 8 August 2005.

1. Describe your work?

2. What programmes /processes have you put in place to accommodate the NCS?

3. Where and how do you see environment represented within the NCS?

4. How do you see the role of the first principle within the NCS?

5. How have you worked with this principle? Can you provide some examples of how you have illustrated environment within NCS to teachers?

6. How have you tried to articulate the Environmental focus within Learning Areas in your work with teachers? Can you provide some examples?

7. What are some of the challenges in your work with educators (focusing on environment within the NCS(R-9)?

ANNEXURE B – CASE 2 ANALYTIC MEMO 4: FOCUS GROUP INTERVIEW

RECONTEXTUALISING ENVIRONMENTAL DISCOURSE AT DELTA ENVIRONMENTAL CENTRE

DRAFT ONE- summary of responses:

Discourse in focus group interview: extracts
There was a strong inclination to a whole school approach:
C2FGP1 – whole school development (WHY P3)– process of auditing, identifying issues, identifying needs. System environmental practice in terms of management, resources, but also teaching practices and how we make the school itself a better teaching environment. Use the resources at school better and how to clean school grounds for better learning and fro better resource management.
Materials – spread environmental themes across the learning areas – providing step by step lesson plans based on a range of environmental skills and knowledge

(C2FGP4) into their thinking and into all the learning areas, so that there is 'complete synergy across the whole school from the management right through to classroom practice'

Very focus on working from policy – from the LA documents. **C2FGP1** – working directly with documents –trying to link the practical issues and management projects that are relevant to curriculum issues as well as focussing on classroom practice. Focus on active learning approach to help teachers with practical ideas around curriculum implementation… ideas of how to bring the assessment standards to life.

C2FGP2 - understanding the principle - where the environment is situated in the Curriculum, why. Over the number of workshops that we have done we have looked at once again the Constitution, Bill of Rights and linking that with the RNCS, and unpacking that further using pictures and diagrams. From there we have worked with unpacking the learning outcomes and assessment standards.

C2FGP2 - principle which is quite general and is an umbrella of everything and like OBE should filter throughout, but there certainly are certain learning outcomes and assessment standards which focus specifically enough that become more specifically focussed like the Natural Science, Technology has a very strong environmental impact and social element to that. For example, in languages you do not have an explicit environmental theme underlying whatever, but there the principle kicks in and so you can teach language based on and with the flavour of that first principle.

C2FGP4 -..it has really been threaded all the way through in a number of different ways …Continuous thing almost like it could be a golden thread that goes through the whole years work, much more integral …is almost a different way of handling subject matter.

C2FGP1 - environmental stuff is part of the broader learning process is far more realistic where they are seeing environmental learning in context and is alongside all the other stuff that is happening.

C2FG2 - looking at a picture at a first glance and then looking at a picture at a second glance using the elements of the principle, …..sometimes you actually don't see some issues, but when you think back to the principle and then re-look at a particular thing then

you see something different that you may not have seen when you just looked at it at one glance, At first glance you do not see some of the environmental issues or some social justice issues, human rights issues, but when you really look and focus onto it using that lens you actually can see them coming through

C2FGP1 - when we look at natural resources it is not just soil and water but it is the equity issues around the water, it is the human rights and social justice issues related to that

C2FGP4 – taking the principle into their thinking, into all the learning areas, so there is complete synergy across the whole school from the management right through to the classroom practice.

C2FGP2 –it was through designing these activities and engaging in documents s that they actually uncovered how they could teach environment\

C2FGP2 – challenges – people think very superficially and are not getting into the nitty gritty digging deeper, ……what is the quickest, what is the easiest. P17-18 other challenges' (lip-service; lack of planning at school)
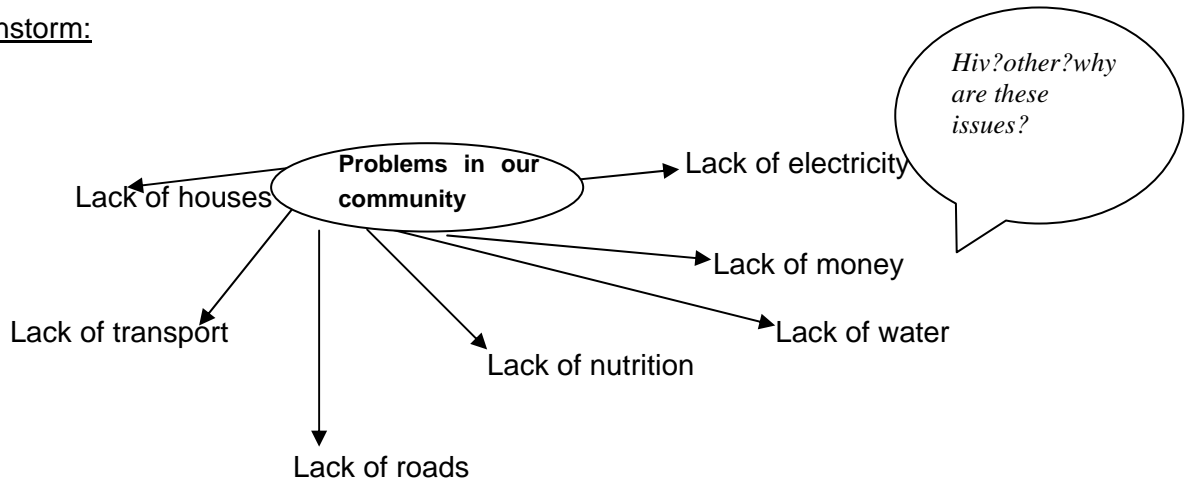
ANNEXURE C- OBSERVATION NOTES- CASE 3 - SCHOOL

School Observation: Lesson 1:

Introduction:
(Teacher (T) Looking at our community /people we live with lets think about our environment /homes/school. What are some of the problems we encounter?

Class brainstorm:

(T)There seems to be many things we need in our society. Lets move and think about our needs – what do we need?
Water;transport;money;electricity

(T)Lets talk about money as one of our needs: by show off hands
how many of you have parents who are working –(6)
how many of you have parents not working?(37)

Strong economic discourse; due to context;

(T)In your groups on charts –discuss if we need money – what could we do to get money?
Group discussion – write things we can do in order to get money –
.money

What factors to consider - we need money what do we do???? Not discussed

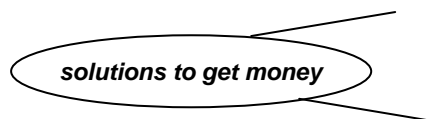(T)Why do we need money?
Purchase clothes; food; build houses; pay school fees

(T)After our brainstorm, we will try to see what we can do –if we want to make some money

(T) we have said no money is a problem -so we need to come up with some solutions.
Asked learners to write –solutions on how to get money
group work task: mind map:

solutions to get money

Discussed and brainstormed in groups

(T) Groups were given African country names
:(Swaziland;Kenya;Nigeria;SA;Lesotho:Angola)

Group Responses solutions to get money:
Plant flowers and sell
Plant veg/fruit and sell
Make brooms
Make shoes and sell
Sell Zulu mats(grass)
Sell sweets
Cows leather
Make clothes
Palm leaf flowers
Gardening
Bud shelters

No evaluating each option examining impact

These are ideas/solutions coming from you. you have come to many different solutions
Lets look at them:
How can we make flowers from palm leaves?
Plant veg – what about veg - spinach; carrot

T went through all charts – ticked common solutions – counted how many group suggested different solutions- went thro all. All groups suggested brooms/shoes

Making brooms came from all groups – how can we do this

Decision made no other considerations ;impact; resources

We need the resources to make brooms – what resources do we need to make brooms:
Axe
Hammer
Chisel
Tape Measure/ruler
Sand paper
Empty cans
Palm tree leaves
Nails
Water
Hard rocks to grind stems

Resources not expanded – renewable and non-renewable; natural? To obtain –cautions; how to use

Who can help us to make brooms? Parents/classmates who know – Siyanda –explained that he had been taught by his father and he could share that with others and will assist and help us.

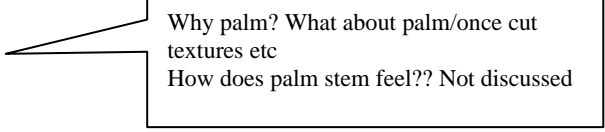No factors outlined to be considered in design

DESIGN:

In groups – asked learners to design what type of broom they could make

Each group presented designs – some had two designs – long and short handle
Discussed which is strong and which is weak

Which broom is stronger – palm (why????? Not discussed)
Which one can we make –with stick or only from palm stem

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(T)Looked at Senegal poster – trees – palm tree do you just cut them?? What will happen if you just cut them? *next generation will not be able to see the plants – no palm trees.*
If you cut trees – destroying palm trees – what should you do? Plant more palm trees – conserve nature ;cut middle stem not roots so tree can continue growing

Why palm? What about palm/once cut textures etc
How does palm stem feel?? Not discussed

(T)Think about the target market:
Who is going to buy this broom ?
Community; houses; teachers; shops; taxman; neighbouring schools; tuckshop; other countries; churches; neighbours; hospitals

ANNEXURE D- ANALYTIC MEMO 1: RECONTEXTUALISING ENVIRONMENTAL DISCOURSE IN TECHNOLOGY IN NCS TRAINING

DRAFT 1:

Discourse in Technology Statement:
Short summary using quotes
See separate LA page

Comment on Technology Statement in relation to broader discourse (Principle 1 etc.)
Highlights that Environmental factors should be taken into account when designing /developing technological solutions, so learners develop responsibility to be aware of the negative impact of their designs on environment/people/their rights. Making them aware of their responsibilities within society.

"*Learners explore both the positive and negative impacts of technology on their political,, social, economical and biophysical environment.*"
'*Learn by dealing directly with inclusivity, human rights, social and environmental issues in their project work*'.

Evidence of selective appropriations – process description. Including processes of De/re location
- P4 – states environmental factors should be taken into account reproducing from the AS but in possible responses no mention or consideration of any environmental factors (GAP between stated intent and what is articulated)
- Choose 'most suitable solution' – criteria to determine suitable is not clarified nor is reference made back to material used/environmental impact etc
- P5 lists sensitivity to environment as possible constraint but in the design specifications no mention of any consideration of environment /enviornmnetallly friendly design etc (GAP between stated intent and what is articulated)
- P8 – no unpacking of Lo3 – depth /possible content
- P10 – principles of RNCS just reproduced. Social and environmental responsibility just listed as values (lipservice) no link to knowledge /skill – no actual pedagogising

of the values
- P11 – were LOS? ASs linked to principles?   - There is no indication of how / in pedagogy (no articulation of where and how is the link established)
- P11-12 – info on projects -- no indication of why the project (NEED); the discussion on design process - no mention of env responsibility /considering env factors – constraints listed as 'time; resources and learner skills' -
- P35 – Questions lifted out of NEEP books and pasted in – but not pulled through in the development of LP – superficial marking of discourse - never discussed as LP process unfolds
- P36-37 – as the LP process unfolds all guidance is around structure of LP – no mention of how considered and worked with principles /context/local issues these become peripheral issues to the structure of LP
- P41 – the AS just transformed into content - no unpacking of the content - context becomes just pollution - what it has always been - so we can tick we have worked with an environment context.

Evidence of ideological transformations
- P7 – in unpacking LO1 – 'technological capability involves being able to combine practical action with a deepening understanding of knowledge and skills to develop technological solutions'. There is no mention of social and environmental responsibility, which is the discourse, embedded in this LO.
- This outcome allows learners to 'enhance the made world' – again no mention of social and environmental responsibility

The above two statement almost insinuate the technology /LO1 wants learners to make /build/ develop tech solutions (dominant discourse)
- P20 – After an activity that focused solely on inclusivity –differentiation in teaching – question which principle is this activity addressing   -- principle is reduced to inclusivity (main thrust discourse almost changed)
- P27 – undermining of the discourse - by stating that this outcome will not be recorded as frequently as others – indirectly rating /giving importance to outcomes (refer back to description of LO1 as backbone outcome). Ass for three are clustered and recorded as a whole – what are the important ideas/content that will be assessed if three focus areas are clustered and treated as a whole.

Evidence of other recontextualising processes & factors

- superficial 'marking' of the discourse - not carried through to pedagogical interpretation
- separation of the core technological content (design process) and 'other things' you could consider
- specialist input & internalizing of specialist input

Who is / was involved in the processes of recontextualising?

National and Provincial curriculum advisors

Factors influencing the recontextualising process
- technology relatively new curriculum area in SA
- cohesion in the writing of the training materials (writing separately, no conceptual editing until the end etc.)
- Presence of NEEP staff during editing – take resources – lipservice – reproduce without – internalizing into LA
- How principle 1 applies within LA underpins LA -not addressed

ANNEXURE E – ANALYTIC MEMO 5 - RECONTEXTUALISING ENVIRONMENTAL DISCOURSE AT DELTA ENVIRONMENTAL CENTRE - WORKSHOP FILE

Discourse in Workshop File

Short summary using quotes :

- C2WR 1 – school ecological footprint, (energy, water, gardens, waste, health and safety, transport) – focusing on reviewing schools environmental practice- in two of five schools.

- C2WR 2 – Environmental Learning Assessment Sheet - engages teachers in reflecting on their learning programmes – very in-depth review with a very broad holistic picture of environment – teacher examine the nature, causes and effects examining the depth with which these were explored – taking four dimensions (social, economic, political, biophysical) into account and the relationships between them.

Sheet also asks teachers to examine a unit of work – examining if 'the background and context of the learner determines what is taught and how environmental learning takes place'; it also reviews selection, use and adaptation and development of LTSM, and to what extent environmental learning is being assessed.

- C2WRpt - (see Phumula and Sonqobo, Shukumani) **Healthy environment – two pronged – school environment and learning environment.** (Idea of learning environments explored through reflecting 'special places from youth' which each person told group about – from which they drew what makes learner centred environments.

They then examined their school grounds examining to what extent they were learner centred.

- C2WR 4 - School grounds as a resource – 'each learning area looked at curriculum outcomes and how school grounds were being used to achieve these curriculum outcomes' (Phumula report april). Resource 4 – teachers take each learning outcome and examine each AS within the learning outcome, then examined 'achieved using school grounds Yes/No' and then 'How could school grounds be changed to achieve this Assessment Standard?' - using LA tables to assess the use of school grounds.

'Discussion on the necessary factors to consider when designing school grounds – environmental impact, learner needs, teacher needs, curriculum needs' sonqobo report.

'Each group generated ideas for practical school grounds projects that could enhance their curriculum work'. (Report Phumula 19 April) see Resource 5 – Project Planning Sheet, IN part A teachers explored and planned for their envisaged projects. The resource sheet asks teachers to link each part of the project to the curriculum. In part B they take their planning further by trying to link it with the active learning model where teachers link to four key aspects of the model:

Info: 'What do we know? What do we need to know?'
Enquiry encounter: How do we explore the problem?
Action taking: What can we do?
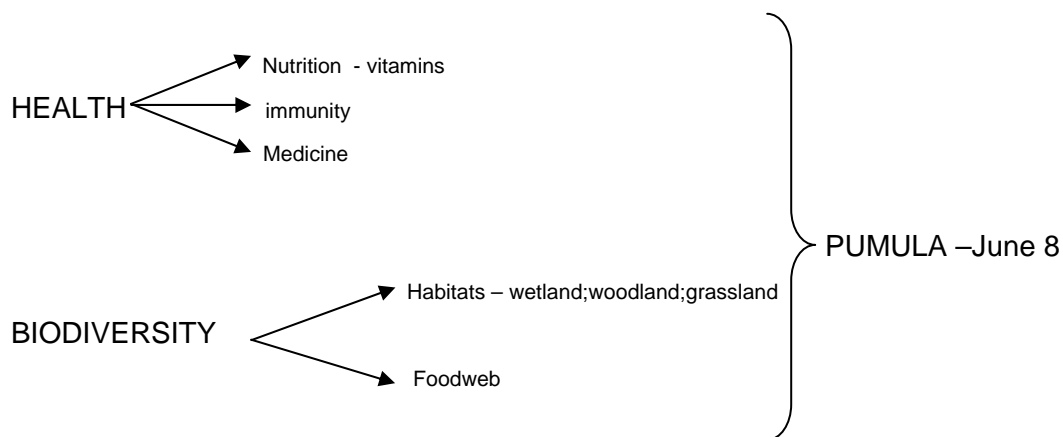**Reporting**: What, how and to whom do we report?

This was used to help them focus and plan their projects to be more action orientated.

- C2WRpt (Pumula may)– looked at information sharing and seeking – aspect of ALC – teachers deliberated the 'role of information in the learning process'. They then 'assessed the information sources at school which are in place to support environmental learning' and examined 'possible strategies for making environmental information available to educators and learners'.

This was taken further in the next workshop where teachers looked at information accessing and processing skills using Enviropaedias. They were introduced to mind mapping and developed and unpacked their issues further using their mind mapping info seeking skills. Also done at shukumani.

- C2WRpt (Pumula June) The greening committee - 'brainstormed needs of the school and how greening could help to achieve or support many of these goals'.

Their brainstorm sheet 'planting with a purpose' shows a discussion where broad areas were listed and these were then further unpacked to highlight purpose and possible curriculum link.

HEALTH
→ Nutrition - vitamins
→ immunity
→ Medicine

BIODIVERSITY
→ Habitats – wetland;woodland;grassland
→ Foodweb

PUMULA –June 8

- C2WRpt (Pumula July) on-site planning meeting – where teachers guided by their previous brainstorms went out onto the grounds and started conceptualising and planning further.

- C2WRpt (Rondebult June) A variety of recent newspaper articles were used highlighting different issues related to electricity.

'The workshop provided opportunity to assess (informally) the educators' prior knowledge of energy issues and understanding of environmental issues in general. Once they had 'got going', the educators were quick to make curriculum links and see learning opportunities in their learning areas'

Breakdown of energy issues and possible curriculum links as identified by the educators:

1. Finances: cost to user – budgeting   EMS
2. Crime: cable theft and illegal connections – risks and safety   LO and EMS
3. Urbanisation and its effects   HSS
4. Human needs – E.g. warmth, cooking etc.   EMS and Technology
5. Pollution: NS and Tech
6. Lack of skilled labour: e.g. electricians   EMS and LO
7. Demand and supply   EMS
8. Metering and payment   MLMMS
9. Privatisation and competition   EMS
10. Environmental concerns   ALL
(Rondebult report – 2 June 2005)

The above highlights how the issues was unpacked by educators and how they made their curriculum links.

ANNEXURE F – CASE 1 - GUIDELINE QUESTIONS - DEPARTMENT OF EDUCATION INTERVIEWS

Some guideline questions for interview: TECHNOLOGY

1. Where /how do you see environment represented in Technology?
2. Is it well represented? Are there gaps that you see?
3. How are teachers/advisors working with environment within NCS?
4. Can you list some of the challenges experienced working with teachers /provincial advisors to bring out the environmental message?
5. How is environment being dealt with in the training of teachers?
6. How do you see the role of the first principle within the technology LA?
7. How have you worked with this principle with advisors/teachers?

ANNEXURE G - NOTES CAPTURED FROM INTEVIEW - CASE 1

Draft 1: Technology - Interview 1: Summary of response:

1.   Where how do you see environment represented in technology?

you dream of it

LO3 –outcome focusing on environ. in society, it's a value and attitude outcome so you can't teach it, need to live it and demonstrate it. Tech is a LA that focuses on invent /design/develop products that enhance lives, we don't want people to do this to the detriment to the environment. Think of what stuff is in LO3 – impacts on society and environment, teachers must constantly remind learners of this and develop projects and tasks within the context of environment – need more systems that are environment related –bigger emphasis on impact.

We can't teach environment issues literally in tech. Teachers need to be exposed /trained on what are environmental issues or else they want to be able to ask leading questions.

2.   Is it well represented? What are some of the gaps that you see?

Loved to see more biotechnology like in Australia

Teachers need to have a background on environment /systems only then as a teacher you will be able to plan projects that incorporate these things.

I don't see a gap in policy, there's a gap with our teachers – they don't know how to take these things into account. NO gap on paper. .C2005 was better, teachers could interpret once they understand how to interpret it – easier – not so explicit.

3. How are advisors /teachers working with environment?

In training of teachers not reflected not all, because no-one really knows how to. We need a body to push to push it, without that it is forgotten.

In documents it is not even represented not even in NS. Such a lot we can do – but we don't know how.

Subject Advisors - got some idea how to do it but we haven't internalised it yet. No drive awareness

Most see environment see pollution/floods/agriculture/animals shelter

4. Some Challenges you experience? Without people to drive it with a passion it won't happen. Its still – just words on paper. To implement a policy you need people to drive the policy. There needs to be awareness in senior management, subject advisors; principals;

teachers. We need to go to director ask principals to be trained, then they can understand the need for teachers to be trained they we will see great success.

Not aware of what is happening around them what opportunities there are and how to bring that into the classroom. Very dependent on books.

Example – I went to Telkom – fibre-optics – replace copper – Telkom has problems with cut offs – glass not biodegradable thus there's an impact. Could use this as an example.

5**. How is environment dealt with in RNCS Orientation** – impossible what we needed was a six month course –not even making a dent nothing going into classroom. Next year, more aware of the bigger picture, how to do it moving from concept to lesson – that's where they struggle. Need theoretical background –how to develop actual lessons

Teaching and learning skills not developed – there is a gap.

At national, focus on Learning programme /work schedules, nothing getting into classroom practice /problems.. Actually illustrate a lesson where it is being incorporated, exemplar – long term take teachers away for weekend to nature reserve – so they can learn from nature.

ANNEXURE H - NOTES FROM EDUCATORS INTERVIEW

- **How would you describe your local environment** – very beautiful – and green, smoke-free and noise free but its very far away no access, no access to IT, many unemployed and high levels of formal illiteracy (did not attend school)

- **Environment in RNCS** - see environment in all LAs- in EMS –deal with economy – environment enters,
  When we deal with people – environment enters, employment /unemployment – involves how people live and how socialise. Maths - many things we can do - nos of people dying of HIV/AIDS

- **Technology LA** - Looking at the way people live – problems in the environment. One of the LAs used to solve problems in the community – I focus on Technology in order to solve community problems. Focus on the things that we have in our environment and try to see the problems.
  I try to use what is in the community, natural material and the indigenous knowledge of the people. I think all the Tech LOs have environment in it, but the most important one is the one that talks about, identify and solve problems, this is very important for environment – problem solving. The most important environment issue, we have is unemployment.

- **My role as a Technology teacher** - to bring hope to the hopeless; bring them light and hope.
  I try to enable my learners to solve problems using waste materials. Esp in Tech – teach reduce; reuse; recycle – the 3 Rs.

- **How do you work with environment within the curriculum:** work with issues we see in the community. Parents come up with issues in the society, took these as issues to focus on, things we have to teach our learners. Using them in the curriculum teaches them about things that affect their society. Also made the parents feel part of the school. I don't look for problems in the curriculum, because I am here, I know the issues, but I have to work with the community. Education here to solve community problems.

  Went out to pensions points – needed to clean; Collected Waste weighed - sorted biodegradable/non biodegradable – use to form compost;

Strong cardboard – used in shoemaking – make shoes using cardboard

Rather than buying how can we use what we have in environ – (cleaned up gave us material to use)

Design – learners used cardboard to measure and design. Evaluated cardboard shoes – covered in plastic as option

Collected old shoes/shoe soles / Collected leather cut-offs – used as scrap leather

Stitch – no money – what can we do for needles- make from old broken wires sharpened

Used fibres of Aloe – strong veins - used as thread – grind wash string – make string resistant to water. I taught them cross -stitch – stitch shoes