

**STRATEGIES USED BY SUBJECT ADVISORS AND
FACILITATORS TO SUPPORT LESSON PLANNING WITH
AN ENVIRONMENTAL LEARNING FOCUS: A CASE
STUDY OF THE EASTERN CAPE NEEP- GET CLUSTER.**

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ABSTRACT

Over the past ten years, South Africa has undergone substantial changes, following the advent of democracy. Key amongst these changes being the transformation of educational policy. These policy changes have introduced new structural frameworks within which we operate (including myself as a subject advisor) and new roles for educators. These policy changes affect all the levels of the education system, and have an impact at school level, where teachers are now responsible for learning programme development (including a focus on lesson planning).

Lesson planning in an outcomes-based education framework is a challenging aspect of policy implementation. South Africa is faced with the challenges associated with policy change and implementation. The role of the subject advisors and facilitators who support the teachers to make sense of the curriculum is crucial, as they provide the interface between policy and practice. They are the people who work most with teachers, and have a responsibility for curriculum implementation. This study aimed to explore the strategies which are used by subject advisors and facilitators to support teachers develop lesson plans with an environmental learning focus.

A qualitative case study was conducted in which I looked at how the support processes were provided by the subject advisors and facilitators in the Eastern Cape in particular the NEEP-GET cluster in the Makana district. The study employed a range of data producing techniques such as questionnaires, interviews, document analysis and observation. The data was analysed to report the findings.

The research indicates that some strategies are used to provide curriculum and pedagogical support and guidance, but that these are superficially treated and others have not been attempted at all. This therefore shows that further growth in this area is possible amongst the subject advisors. Recommendations relevant to both the subject advisors and the Department of Education so as to enhance the support processes and professional development of subject advisors have been made.

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CHAPTER 1

OVERVIEW OF THE STUDY

1.1 Introduction

In this study I investigated the strategies used by Subject Advisors and other Curriculum Support Staff and facilitators to support teachers in developing lesson plans (previously known as learning programme units) with an environmental learning focus in the context of Curriculum 2005 (C2005). This investigation took place in the National Environmental Education Project for the General Education and Training band (NEEP – GET) in the Department of Education within the Eastern Cape Province.

The report draws on the experiences and understanding of a range of NEEP – GET cluster participants that I worked with throughout the period of this study. The interactions that I had with colleagues in this cluster provided me with an opportunity to learn more about and explore my role as a subject advisor, particularly as it relates to providing support to teachers with lesson planning.

I have reviewed a wide range of literature to establish the background and context of the research and to get insights into the role of subject advisors and curriculum support staff in education in general and in curriculum matters specifically.

This chapter introduces the research aim, some aspects of the context of the study and provides an overview of the chapters in the thesis.

1.2 Research aim and question

This research aims to clarify the role of subject advisors and other curriculum support staff in providing support to teachers for lesson plan development with an environmental learning focus.

With a view to:

- make recommendations on the kind of support that the teachers require from subject advisors and other facilitators, to be able to develop lesson plans that meet the curriculum requirements, and that are contextually relevant.
- share the findings and recommendations with the Eastern Cape Department of Education for the improvement and ongoing professional development of both teachers and subject advisors and other curriculum support staff (see Chapter 6).

The research question was therefore: What strategies do subject advisors and other curriculum support staff use when providing support to teachers for lesson planning with an environmental focus?

1.3 CONTEXT OF THE RESEARCH

1.3.1 Curriculum change in South Africa

The democratic elections of 1994 signalled a major turning point in the history of South Africa. The new government's aim was to address the imbalances of the past apartheid regime. A number of developmental initiatives such as the South African Qualifications Authority (SAQA) and the National Qualifications Framework (NQF) were put in place to restructure the education and training system (SAQA, 2000). In line with the policies developed by SAQA, a new outcomes-based curriculum named Curriculum 2005 (C2005) was developed as part of the process of transforming the education system (*ibid.*). Environment was defined as a 'phase organiser' in this curriculum, which meant that environment was to be integrated across the curriculum. C2005 was reviewed in 2000 and recommendations were made to streamline and strengthen the curriculum (DoE, 2000b). While 'environment' will no longer be a 'phase organiser' in the revised National Curriculum Statement (NCS), the Council of Education Ministers (CEM) requested that environmental education be given attention in the streamlining of C2005. The revised National Curriculum Statement 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. The curriculum attempts to be sensitive in particular to the issues of poverty, inequality, gender, age, disability and such challenges as HIV/AIDS (DoE, 2002a), and it emphasizes a healthy environment.

As a result, environment is integral to all learning areas (NEEP-GET, 2004), resulting in a need for teachers to develop lesson plans with an environmental focus.

1.3.2 The National Environmental Education Project in the General Education and Training band (NEEP – GET)

The NEEP – GET was established by the Minister of Education in 1999 in line with his broader commitments to human rights in education and also with the human rights clause on the environment in the Constitution in mind (Lotz-Sisitka & Raven, 2001). The project focuses on the General Education and Training band of the South African education system, hence it is referred to as NEEP – GET. It has the professional development of educators as its primary focus. Educators that are participating in the NEEP – GET professional development activities include curriculum support staff (curriculum implementers, subject advisors and teaching and learning facilitators) in provincial education departments and groups of teachers. In the Eastern Cape, service providers also participate in the professional development programmes, given that one of the objectives of the NEEP – GET is to foster cooperative governance (Lotz-Sisitka & Raven, 2001) and improved coordination of school-focused environmental education processes (NEEP – GET, 2002).

The professional development in the NEEP – GET programme will implement the requirements of the *Norms and Standards for Educators Policy* (DoE, 2000a). This policy requires an applied competence focus for professional development, involving practical, foundational and reflexive competencies, associated with the seven roles of educators, as defined in this policy. These roles include:

- Mediator of learning,
- **Designer and interpreter of learning programmes (including lesson planning) and learning support materials** (my emphasis),
- Community, citizenship and pastoral role,
- Educational leadership and management,
- Scholar, researcher and lifelong learner,
- Assessor, and
- Learning area specialist.

According to the Department of Education (DoE, 2000a:13) educators as interpreters and designers of learning programmes (and lesson plans):

... have to understand and interpret provided learning programmes [and lesson plans]. They have to design original learning programmes [and lesson plans], identify the requirements for a specific context of learning and have to select and prepare suitable textual and visual resources for learning. Educators have to select, sequence and pace learning in a manner that is sensitive to the differing needs of the subject/learning area and learners.

This means that the subject advisors, curriculum support staff and other teacher education facilitators have a big role to play in assisting teachers to develop appropriate learning programmes and lesson plans, as it is their function to *support teachers* to implement the curriculum.

To guide professional development programmes, the *Norms and Standards for Educators* policy has defined a number of competencies required for teaching. The *Norms and Standards for Educators* policy statement has indicated that these will need to be refined through implementation and research (DoE, 2000a), and this study aims to contribute in a small way to ongoing research into the implications of these *Norms and Standards for Educators*. A set of professional development outcomes, closely linked to the Norms and Standards for Educators, and developed within an outcomes-based framework, provides direction and orientation to professional development in the NEEP – GET. These provide a broad framework for all professional activities in the NEEP – GET; within responsive, participatory and open-ended processes which are developed through deliberations with educators, in particular contexts (NEEP – GET, 2002). The NEEP – GET professional development outcomes that focus on lesson planning development are:

- Interpret and apply an environmental focus in a learning area;
 - Plan, implement and evaluate a lesson plan with an environmental focus;
 - Analyze environmental issues in local context; and
 - Adapt, use and develop learning support materials in lesson planning¹
- (adapted from NEEP – GET, 2002).

¹ Note that at the time of conducting this research, and at the time that the NEEP – GET project was established, the NEEP – GET documents referred to 'a unit of work' instead of lesson planning. Official terminology is now 'lesson plans' and for the purposes of future use of this research, I have chosen to work with the notion of lesson planning, rather than 'unit of work' or

In the Eastern Cape the NEEP – GET was initiated in October 2001, and is located within the Chief Directorate of Curriculum Management and Professional Development in the Department of Education (DoE) at Zwelitsha. This programme is run from the provincial office by the provincial coordinator who went to all the districts throughout the province to elicit support from the provincial and district Department of Education officials, Higher Education Institutions and potential service provider partnerships. Strong support for the programme has been, and continues to be, shown at all levels in the department. Although this is the case, the Department of Education in the province has been under considerable pressures arising from the processes of transformation and restructuring and the demands associated with the introduction of Curriculum 2005 (pers. comm., Nduna 2003), which has affected its ability to provide additional resources to strengthen the project. The other problem was that of understaffing both in the provincial office and in the districts. In each district there were supposed to be sixteen subject advisors for the General Education and Training band. In reality there are few districts with a full complement of subject advisors, and in the worst cases there is only one subject advisor. The problem of the shortage of staff in the Eastern Cape (and other provinces) poses considerable challenges in the implementation of NEEP – GET (Mphaphuli *et al.*, 2003; Raven, 2003).

The approach which has been adopted within the NEEP – GET has been to hold regular (bi-annual or quarterly) provincial workshops with curriculum support staff and key service providers to develop ideas and programmes that can be used with teacher clusters. The curriculum support staff then work with the service providers and the teacher clusters to support teachers in developing programmes to initiate with their learners. In some cases service providers work with teachers in their schools and provide a support and monitoring function.

The original districts which were targeted for the programme were: Makana (Grahamstown); East London; Queenstown; Umtata; Butterworth; Port Elizabeth and

'learning programme units' although this terminology was in use during the research period. I thus use lesson planning throughout the thesis. Lesson plans are derived from learning programmes and work schedules, development of which is also the responsibility of educators in schools. They are provided with guidelines for this task from national and provincial departments of education (DoE, 2002a). This study focuses more on lesson planning than learning programmes or work schedules, although these are closely related, and together form the full process of school-based curriculum development.

Alice. The Higher Education Institutions (HEIs) that were identified in association with these districts were Rhodes University; University of Transkei; University of Port Elizabeth and University of Fort Hare. For various reasons not all these districts were involved in the programme and the teacher clusters are currently based in Makana; Cintsa East / Chalumna and Mdantsane in East London; Butterworth and King William's Town. Out of these clusters, only two, Makana and Cintsa East / Chalumna, have been operating effectively at school level, due to the full-time involvement of service providers, who work with departmental officials in these clusters.

In my study I have therefore drawn heavily on activities in the Makana NEEP – GET cluster. The Makana district is one of those districts with only one subject advisor but the subject advisor is particularly active and committed to the process. She receives active support from the Rhodes Environmental Education Unit (RUEEU), which makes this cluster an effective cluster. The RUEEU fulfils a dual role in the province in that it provides support at provincial level through materials development and acts as a key service provider and coordinates the Makana cluster, together with the subject advisor who is based in the Grahamstown District Office.

1.3.3 My own role and interest in the research

According to my appointment letter from Umtata Education District Office I am employed as a subject advisor for Natural Sciences in the Senior Phase of the General Education and Training (GET) band and Biology in the Further Education and Training (FET) band. I work mostly with the Biology teachers in the FET band because for all the years that I have been employed by the Department of Education I have been working with these teachers. The number of schools that I have to work with also influences my working mostly with these teachers. This involves a large number of teachers (see below). Coupled with this is the pressure to achieve good matriculation results as each district's performance is measured against the percentage pass rate of matric learners at the end of each year. As of 2004, the Eastern Cape is still one of the underachieving provinces as far as matric results go, and this provides additional pressure.

In the Umtata district there are 52 Senior Secondary Schools which offer Biology as one of their subjects and there are two hundred and thirty (230) Junior Secondary Schools

which offer Natural Science. Looking at the number of teachers in these schools I am more or less forced to 'ignore' the Junior Secondary Schools because I am simply not able to give them the support they need. In fact, even though I work mostly with the Senior Secondary Schools, I am unable to support them effectively. Some of the logistical causes of the problem are:

- I am the only subject advisor for Biology in the district,
- The schools that we work with are far apart from one another,
- There is one vehicle in the district office which is used by everybody in the district, and
- As subject advisors we do not have our own vehicles which would enable us to frequently visit those schools which we feel need support.

As a Biology subject advisor I organize workshops for Biology teachers. I communicate information regarding the workshops through circulars and I make sure that these are distributed timeously. I also visit the teachers in their schools with the purpose of supporting them with curriculum implementation and addressing some of the problems that they might be encountering. I am also responsible for ensuring that the schools follow a 'pacesetter' framework provided by the department which ensures that they can write common examinations, whether these are mid-year, trial examinations or end-of-year examinations.

My interest in the research stems from the time when we were still operating as a Region (three years ago), when I used to conduct Outcomes-Based Education workshops for teachers teaching the Natural Science and Technology learning programmes in the Intermediate Phase. In these workshops I noted that as subject advisors we had a problem in assisting teachers to develop lesson plans with an environmental learning focus. I decided to embark on this study to gain insight into the strategies which are used by other subject advisors and curriculum support staff in helping teachers to develop lesson plans with an environmental learning focus. The purpose was to share the lessons learnt during the study with my colleagues in the district and to make recommendations for the professional development of both the subject advisors and teachers which could contribute to improved delivery. The other reason for conducting this study is that I would like to assist the subject advisors in the GET band and also prepare myself for work with the Senior Phase teachers in this band,

given that the Further Education and Training Certificate (FETC) assessments will soon be in place, and this will bring the challenge of supporting teachers to develop effective lesson plans within the Outcomes-Based Education (OBE) framework. The new Further Education and Training (FET) curriculum has recently been released for Life Sciences² (DoE, 2004) and teachers will soon be required to develop lesson plans with an environmental learning focus in the FET band. I therefore see this research as a way of preparing myself for the future challenges of implementing OBE in the FET band.

1.4 OVERVIEW OF CHAPTERS

Chapter one introduces the study by briefly describing the research aim and the context of the research.

Chapter two reflects the contextual influences within which this study took place. The influential contextual dimensions of this study include:

- Environmental policy making and education,
- Educational policy change,
- Changing roles for educators,
- Policy expectations at school level,
- The newly developed NEEP – GET ‘guidelines’ on lesson planning (NEEP – GET, 2004),
- Research findings related to school-based learning programme development, and
- Problems associated with policy implementation in schools.

These dimensions of the context all relate to the research question, which focuses on curriculum change and support of teachers. This chapter provides a review of the issues that are associated with the support of teachers in developing lesson plans with an environmental learning focus. It considers the implications of different research findings for this study.

² This is the new name for Biology in the FET band. This new Life Sciences curriculum has a strong focus on environment, and environmental issues. Environmental learning (and associated lesson planning) will therefore be an integral part of implementing the new Life Sciences curriculum at FET level.

Chapter three describes the methodological framework and provides a justification for the methodological choices. It describes the methods and the data production process and outlines data analysis techniques. It also discusses the ethical considerations relevant to the study and the measures I undertook to ensure trustworthiness.

Chapter four presents the data produced through questionnaires, interviews, document analysis and observation. It provides insight into the strategies used by subject advisors and other curriculum support staff in supporting teachers to develop lesson plans. It also provides insight into issues that subject advisors and other curriculum support staff encountered in providing this support.

In **Chapter five** I discuss the issues emerging from data analysis. These are based on an analysis of the strategies used by subject advisors and other curriculum support staff, in the context of the newly developed NEEP – GET guidelines for lesson planning (NEEP – GET, 2004). This discussion provides insight into implications for support processes used by subject advisors to support lesson planning.

Chapter six provides a summary of the study in relation to the research aim and research question, and recommendations are made on some of the strategies which could be used by subject advisors to support teachers to develop lesson plans with an environmental learning focus. It also makes recommendations for professional development of subject advisors, and recommendations for further research.

1.5 CONCLUSION

In this chapter, I provide a brief overview of the study and its aims. I briefly describe the context of the study and my own role and interest in the research. I also outline the different chapters of this research report.

The second chapter describes issues associated with policy change and school-based curriculum development in more detail.

CHAPTER 2

POLICY CHANGE AND SCHOOL-BASED LEARNING PROGRAMME DEVELOPMENT

2.1 INTRODUCTION

As indicated in chapter one, over the past ten years, following the advent of democracy, South Africa has undergone substantial changes, key amongst these being a transformation of educational policy. These policy changes have introduced new structural frameworks within which we operate (here I include myself as subject advisor) and new roles for educators. These policy changes affect all levels of the education system, and have an impact at school level, where teachers are now responsible for learning programme development (which includes a focus on lesson planning). Besides all the changes in the educational arena, there have also been broader changes at a social and socio-economic level, leading to a greater concern for the environment in national policy development. This has led to environmental policy-making and these policies have affected and influenced educational policy. Hence the focus of this study on how educators such as subject advisors are expected to support environmental learning processes in schools.

In this chapter I discuss the historical and contextual factors that are significant within this study. Each is discussed in turn, and these include:

- Environmental policy making and education,
- Educational policy change,
- Changing roles for educators,
- Policy expectations at school level,
- School-based learning programme and lesson planning development, and
- Problems experienced with policy implementation in schools.

This discussion provides the background for interpretation of the data generated in the study (as reported in chapters 4 and 5).

2.2 ENVIRONMENTAL POLICY-MAKING AND EDUCATION

Environmental concerns have been emphasized in many policy documents in South Africa, for example the Reconstruction and Development Programme (RSA, 1994), the National Environmental Management Act (No 107 of 1998) (RSA, 1998) and the White Paper on Education and Training (RSA, 1995a). The Bill of Rights in the new South African Constitution enshrines the right to a healthy environment for all citizens. Recent policy processes also emphasize the need for teachers to be actively involved in the design of curricula and curriculum development processes (RSA 1995a, DoE 1997, DoE 2002).

The South African Schools Act (No. 84 of 1996) (RSA, 1996c) also states that school governing bodies are to determine aspects related to the school curriculum on condition that they meet the requirements of the South African Qualifications Authority Act (No 58 of 1995) (RSA, 1995b) and the DoE curriculum policy which is derived from the National Educational Policy Act (No 27 of 1996). The need to be responsive to the aforementioned developments, as well as my beliefs that teachers should play a central role in curriculum development processes, provided an important justification for investigating the strategies used by subject advisors to help teachers develop lesson plans with an environmental learning focus within an outcomes-based education framework.

2.3 EDUCATION POLICY DEVELOPMENTS

Following the transition to a democracy in 1994, the new government drafted a new Constitution which states in Section 24 of its Bill of Human Rights that:

Everyone has the right :- to an environment that is not harmful to their health or well being; and to have the environment protected for the benefit of present and future generations, through reasonable legislative and other measures that: prevent pollution and ecological degradation; promote conservation and secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development (RSA, 1996a:11).

This has led to various policies being developed. Other policies were influenced by this clause in the Constitution. For example Curriculum 2005 (C2005) was developed by the education department in 1996 as a new policy to guide curriculum in the general

education and training band in South Africa. In this curriculum, “environment” was recognized as a cross-curricular Phase Organiser (DoE, 1997) to enable environmental learning across the different Learning Areas (LAs).

This shows that the Department of Education (DoE) in South Africa has recognized environmental education as a key response to the environmental crisis. The White Paper on Education and Training (RSA, 1995a:18) articulated the need for an environmental education processes:

... involving an interdisciplinary, integrated and active approach to learning ... a vital element of all levels of programmes of the education and training system, in order to create an environmentally literate and active citizen and ensure that all South Africans, present and future, enjoy a decent quality of life through the sustainable use of resources.

The South African Qualifications Authority (SAQA) also gave recognition to “environment” as a critical cross-field concern. The critical outcomes defined by SAQA include responsibility towards the environment and the health of others, as well as an understanding of the inter-relatedness of systems as a context for problem solving (DoE, 1997).

2.3.1 Curriculum 2005 policy and the revised National Curriculum Statement (NCS R-9)

In line with policy changes introduced by the White Paper on Education and Training (RSA 1995a) and the National Education Policy Act (No 27 of 1996), a new curriculum - named Curriculum 2005 (C2005) - was developed as part of the process of transforming the education system, as noted above. C2005 was developed within an outcomes-based education framework and is currently being implemented in schools. However, after some implementation problems the Minister of Education commissioned a review of the curriculum. The curriculum was reviewed in 2000 and recommendations were made to streamline and strengthen the curriculum (DoE, 2000a). Some of the issues that were raised and which led to the review of the curriculum were:

- The curriculum had a skewed structure and design,

- There was lack of alignment between curriculum and assessment policy,
- There was inadequate orientation, training and development of teachers,
- Learning support materials were of variable quality, often unavailable and not sufficiently used in the classrooms,
- Policy overload and limited transfer of learning into classrooms,
- Shortages of personnel and resources to implement and support C2005, and
- Inadequate recognition of curriculum as the core business of education departments (*ibid.*).

In order to address the issues mentioned above the Review Committee (DoE, 2000a) proposed the introduction of a revised curriculum structure which is supported by changes in teacher orientation and training, learning support materials and the organization, resourcing and staffing of curriculum structures and functions in national and provincial education departments. When commissioning the review, the Minister requested the review committee give special attention to environmental education and history, when reviewing the curriculum (Lotz-Sisitka & Raven, 2000).

The NCS (Grades R-9) has expectations in terms of environmental learning in the different Learning Areas and a focus on the environment is also contained in the principles. These expectations are discussed below. The NCS (Grades R-9) curriculum states that:

The curriculum aims to develop the full potential of each learner as a citizen of a democratic South Africa. It seeks to create a lifelong learner who is confident and independent, literate, numerate and multi-skilled, compassionate with **a respect for the environment and the ability to participate in society as a critical and active citizen** (DoE, 2002a:8, [my emphasis]).

The NCS (Grades R-9) has five principles that need to be considered when planning lessons (DoE, 2002a) and these provide useful direction for providing support for lesson planning with an environmental focus (NEEP-GET, 2004). These principles build on the vision and the values of the Constitution of South Africa and they influence all learning programmes and lesson plans. These principles will be briefly explained below, and are summarized from the NCS (Grades R-9) curriculum statement (DoE, 2002a):

- **Social justice, a healthy environment, human rights and inclusivity**

This principle emphasizes the practices of social justice, respect for the environment, human rights and inclusivity as defined in the Constitution. In particular it aims at being sensitive to issues of poverty, inequality, race, gender, age, disability and HIV/AIDS. When teachers are therefore planning the lessons they should consider how these aspects of society are related to each other.

- **Outcomes-based Education**

This principle sees *the process of learning* to be as important as the *content*. Emphasis on both the process and the content is made by spelling out the outcomes to be achieved. The learning outcomes as well as the assessment standards provide guidance on what process should be followed and they also provide room for creativity and innovation on the part of the teachers in interpreting what to teach and how to teach. These emphasise participatory, learner-centred and activity-based education (NEEP-GET, 2004).

- **A high level of skills and knowledge for all**

This principle provides a basis for the development of a high level of skills and knowledge for all. It does this by specifying the combination of minimum knowledge and skills to be achieved by the learners in each grade and by setting high, achievable standards in all the Learning Areas.

- **Clarity and accessibility**

The learning outcomes and the assessment standards clearly define for all learners the goals and outcomes necessary to proceed to each successive level of the system. This principle also emphasizes that learning materials and learning activities should be accessible in different languages and in Braille where possible.

- **Progression and integration**

This principle ensures that the learners experience the Learning Areas as linked and related. It also supports and expands their opportunities to attain skills, acquire knowledge and develop attitudes and values that are encompassed across the curriculum. The principle also emphasizes the importance of enabling more and progressively deeper and broader expectations of learners. It also emphasizes that

assessment standards and learning outcomes should not be dealt with in isolation, links should be made within and across learning outcomes and Learning Areas.

All the curriculum principles discussed above have been infused into all the eight Learning Areas. Each of the eight Learning Areas therefore contributes to learning about a healthy environment in one way or the other. Also, each of the Learning Areas considers the relationship between a healthy environment, social justice, human rights and inclusivity. For example, the Natural Sciences Learning Area focuses on biodiversity issues and life support systems, while the Economic and Management Sciences Learning Area focuses on sustainable resource use. Life Orientation, on the other hand, focuses on health promotion, which includes the promotion of a healthy environment, while Technology considers environmentally friendly products and designs, and investigates the impact of technology on society and the environment (NEEP-GET, 2004).

These policy changes create numerous challenges for educators. Lotz-Sisitka and Raven (2001) and Janse van Rensburg and Lotz (2000) noted some of these challenges as being: an understanding of new (environmental) knowledge; implementing of new teaching and learning methods, which requires a deeper understanding of learning; implementing new approaches to assessment; developing contextually relevant learning programmes and lesson plans (as cited in Lotz & Olivier, 1998; 2000) and using teaching and learning support materials in different ways (Mbanjwa, 2002). Associated with these challenges (created for educators in relation to the new curriculum policy), are changing roles for both educators and subject advisors.

2.4 CHANGING ROLES OF EDUCATORS AND SUBJECT ADVISORS

Alongside curriculum change, came a changing role for educators. This change in role is articulated in the *Norms and Standards for Educators* policy (DoE, 2000a). The National Curriculum Statement (NCS) Overview document (DoE, 2002a:9) indicates that the kind of teacher that is envisaged is one who is "... qualified, competent, dedicated and caring" and who will be able to fulfil the various roles outlined in the *Norms and Standards for Educators* policy (DoE, 2000a:13). The NCS (R-9) overview document also indicates that the curriculum can play a vital role in creating awareness of the "...

relationship between human rights, a healthy environment, social justice and inclusivity” (DoE, 2002a:10). It further states that “teachers will be responsible for learning programme development at a school level” (ibid.16). The role of the Department of Education will be to provide policy guidelines for the development of the learning programmes (which includes guidelines on lesson planning) in order to support the process.

Mauvia (1999: 83) indicates that:

The introduction of Outcomes Based Education (OBE) under the banner of ‘Curriculum 2005’ expected a shift in the roles of teachers from being curriculum receivers to being curriculum developers and researchers. He further indicates that in delivering OBE, teachers need in-depth insight into learning and thinking styles and approaches.

This means that teachers need a better understanding of how learners learn and the ability to reflect on their preferred styles of teaching.

C2005 policy did not only bring about change in the roles of teachers but also a change in the role of the subject advisors. One of the critiques levied against the first round of C2005 implementation is the inability of the subject advisors to adequately support the implementation process (DoE, 2000a). Mauvia (1999) states that one of the mistakes which was made was to expect subject advisors to train teachers to implement C2005. The majority of the subject advisors were appointed not because they were good teacher trainers, most of them had no experience or understanding of adult education and most had only recently left the classroom for a curriculum support role. Training of teachers was then turned into a “technical process” of training teachers on Specific Outcomes, Assessment Criteria, Performance Indicators and other linguistic and structural features of the new curriculum (*ibid.*).

According to Mphaphuli *et.al.* (2003: 15 –17), there are other challenges facing subject advisors. These challenges may be grouped into three areas, namely, 1) logistics; 2) curriculum support staff capacity and general support and 3) attitudes and relationships within the Department. I will now discuss each of these areas separately.

- **Logistics**

Here we are looking at a wide range of problems that are associated primarily with the limited resources currently available to support the professional development of educators generally and the implementation of C2005 in particular. These challenges include: lack of time to do the job; lack of resources; numbers of schools or educators to be supported (see chapter one); distance travelled from the central office to the schools and the workload of the subject advisors where in most cases a subject advisor is responsible for more than one Phase as well as the Learning Areas. This means that subject advisors support teachers in Learning Areas like for example, Natural Sciences, Technology, Mathematics, Mathematical Literacy and Mathematical Sciences.

- **Curriculum Support (CS) staff³ capacity and support**

Mphaphuli *et al.* (2003:17) further states that the CS staff made a considerable number of comments with regard to their own lack of capacity which leads to lack of confidence and thus results in limited support of teachers. This further exacerbates the difficulties experienced by subject advisors to offer the support required by teachers.

- **Attitudes and relationships within the Department**

The study by Mphaphuli *et al.* (2003) indicates that it is not only structural issues that affect the role of subject advisors in the system. Drawing on comments from subject advisors they explain how attitudes and relationships also affect the potential for providing support to educators:

These comments ... reflect some of their [the CS staff's] feelings about the teachers with whom they are working, and with the more senior management staff within their department ... [these] shed some light on some of the interpersonal dynamics playing out in the provincial and district education departments. There is also some reference to the over-riding authority of the national department. One comment which explains how some CS staff feel regarding their position is: "*CS staff are in the middle management positions and feel trapped between the demands of the teachers and service management and feel powerless.*" Another indicates how some CS feel that they are treated: "*CS (are) not considered committed and can be asked to attend to other issues*", and "*CS staff cannot make their own decisions.*" Also "*CS are the caretakers and are doing as they are told to do by the DoE*" ... Different views on teachers were expressed including that they are: "*...unmotivated, resistant to change and*

³ CS staff refers to subject advisors and other district-based officials working in support of curriculum implementation.

stubborn", and "Teachers are not confident and do not use their own initiative. Can't do more for fear of being (seeming?) too ambitious or less for fear of being considered incompetent." Also: "...negative attitudes of teachers with them resisting change, requiring constant guidance..." On the other hand, some CS are passionate in support of 'their' teachers: "Needs of teachers not seen to... dictated to by province." Relationships with 'head office' vary considerably, but were generally less than positive: "Contradictions and lack of clarity on issues from Head office", "... sectoral management – lack of common support – role of circuit manager". Two comments involving the national department were that: "Other projects prioritised at national and provincial level", and "...have weekly plans but superceded by national and provincial priorities" (pg 18, emphasis original)..

These issues are further exacerbated by the fact that "... CS staff carry a considerable weight of responsibility across a number of complex and challenging areas, each of which requires high levels of specific skills" (ibid.14). While the more experienced subject advisors have developed many of these skills through years of experience, they too are now facing the challenge of the '*paradigm shift*', as introduced by the policy changes mentioned above. The less experienced subject advisors, many of whom were teachers until relatively recently, are faced with the challenging task of developing a whole new range of expertise to deal with the demands of their work and the policy changes discussed above. Of interest in the Mphaphuli *et al.* (2003) study, however, was the strong commitment that subject advisors expressed in terms of their preferred role of supporting teachers at school to implement policy expectations.

2.5 POLICY EXPECTATIONS AT SCHOOL LEVEL AND SUPPORT FOR TEACHERS

According to Taylor *et al.* (1997: 26-27) policy is much more than a specific policy document or text. Policy is both a process and a product. In this conceptualization, policy involves the production of the text, the text itself, ongoing modifications to the text and processes of implementation into practice.

In C2005 teachers are faced with interpreting and implementing policy as they are required to develop lesson plans (previously called learning programme units) for use in the teaching/learning situation. The revised NCS (Grades R-9) states that "[t]eachers will be responsible for the development of Learning Programmes" and that the Department of Education (DoE) "... will provide policy guidelines for the development of the Learning

Programmes in order to support this process: (DoE, 2002a:16). This policy position was also evident in C2005 (DoE, 1997). Although this is the position of the DoE there has been no (or very limited) ongoing support and professional development of teachers after the initial curriculum policy implementation workshops associated with C2005, which, in my experience, were presented more as advocacy workshops rather than in-depth professional development processes.

With the introduction of the revised NCS (Grades R-9) there was a change in the way in which teachers were trained in order to support implementation. According to Raven and Lotz-Sisitka (2004:6) the training process was coordinated by the National Department of Education: Schooling Directorate and was cascaded through a National Training Team, through Core Provincial Training Teams through to Foundation Phase teachers in the provinces. Several key features were apparent in the national training processes. A National Training Team was drawn from the nine provinces and it co-ordinated the training of the Core Provincial Training Teams. The National Training Team developed guides to be used in the training processes. These guides were made up of Participant's and Facilitator's Training Guides. The Participant's Training Guide included a range of activities that were meant to support participants in the exploration of various aspects of the revised NCS (Grades R-9). The Facilitator's Guides included a range of activities that the provincial trainers could draw on in designing the professional development programmes for the teachers that they were going to work with. In the training guides, theories and policies; classroom practice; management and assessment were explored. The training guides also include a section on lesson planning (towards the end) (Raven & Lotz-Sisitka, 2004, see also DoE, 2004).

Training of all Core Provincial Training teams was undertaken over a period of two weeks. The training focused on developing an understanding of the structural aspects of the revised NCS (Grades R-9). The national training programme involved an exploration of the various themes outlined in the training guides, in the first week. In the second week the participants were encouraged to work through the Facilitator's Guide and develop and facilitate specific activities that would be replicated in their work with teachers. Raven and Lotz-Sisitka (2004:13, emphasis original) note, however, that *"less emphasis appears to have been placed on teaching and learning processes and teaching and learning support materials"* in the revised NCS (R-9) training process. They

also note that some participants found there was too little time “to explore processes of lesson plan development and assessment processes in relation to specific learning programmes”. They note further that:

Generally participants found the content of the training to be useful in terms of clarifying conceptual understandings within the curriculum framework, but felt that *more ongoing support would be required for teachers in developing lesson plans and supporting school based implementation* (ibid.13, emphasis original).

A similar situation existed in Hong Kong where the departure of the colonial government saw an introduction of a wide range of policy initiatives which were primarily designed to produce a more democratic government. According to Morris, Chan and Munling (2000: 48) this period brought the introduction of a reform initiative in the education arena in 1990 which attempted to bring about fundamental changes to the nature of the primary school curriculum. Instead of seeing policy-making and implementation as overlapping they were rather seen as wholly discrete areas of activity. A perception emerged that there was an absence of a clear policy direction, an innovation overload and that further *ad hoc* initiatives could be anticipated. Teachers who attended seminars and courses provided by the government to promote reform regularly reported that they received very different and often contradicting messages. Fullan and Miles (1995) as cited in Morris *et al.* (2000:48) argue that:

The assumption new policies would produce change, the failure to address implementation issues, the focus on the ideals of the reform, the attempt to promote radical and complex changes, the piecemeal nature of educational policies, the lack of teacher participation and the failure to address key features of schooling are “prototypical” features of unsuccessful reform.

According to Lotz and Olivier (1998) teachers are no longer seen as top-down authorities or social engineers, nor as background facilitators, but as active mediators of knowledge and values. Learning programmes and lesson plans which, for example, encourage joint investigations of local environmental problems reflect these changes in understanding about teaching and learning, and are “congruent with the intention of the social constructivist orientation” proposed within C2005 national policy documentation (*ibid.*:7). Moll, (2002:5) notes that the DoE strongly supports constructivism as a theory underpinning OBE teaching and learning in South Africa. Constructivism envisages learners who construct knowledge through problem solving activities that require them to

draw on a variety of resources (*ibid*). In his debate to clarify constructivism, Moll (2002) notes that the DoE's view of a constructivist classroom is that educators should generally behave in an interactive manner, mediating learning in an active and interactive process. Moll (*ibid.*), however, critiques the DoE's view of constructivism, and notes that constructivism has been superficially interpreted within OBE in South Africa. He notes that, as a result of superficial interpretations of constructivist learning theory, teachers have been viewed as "facilitators of knowledge environments" (*ibid.*:6), and suggests that there is more to enabling constructivist learning than simply 'facilitation'. This theory of learning has implications for the kind of support required at school level, and, as Taylor and Vinjevold (1999) reflect, constructivism is not an easy approach to introduce in an educational reform process.

Smit (2001:68), concurs with Lotz and Olivier (1998) and Moll (2002) when she says the role of teachers can no longer be overlooked, for policy change will not have a desired effect if policies are not accompanied by a supportive process intended to strengthen the role of the teachers. The realization that teachers are central in implementing new policy for reform, and in restructuring or transforming schools and classrooms calls for a focus on teachers who are often seen as either "impervious or unaffected or as resistant to policy change" (*ibid.*). Implementation of policy poses many demands on teachers in terms of knowledge, skills and attitudes, which does not take place without interpretation or recreation of policy. Smit (2001) also shares some of the experiences of teachers in her research. These teachers expressed concern and said that they were disturbed by the fact that information arrived late in schools and by the fact that the trainers appeared to be ill-equipped to conduct the training workshops. Teachers also argued that workshops and training courses offered only once without follow up are not sufficient. It was also noted that the information provided in the original training programmes does become distorted. The workshops conducted were also not up to standard and the course facilitators lacked skills that they were supposed to teach (*ibid*). This is also supported by findings of Reddy (2001:196) where he states that it became apparent from the discussions that he held with teachers that the official INSET workshops which served to support the implementation of the new curriculum seemed to lack any integration with the day to day activities of teachers. These workshops occurred as "episodic events that were not supported beyond the period designated for the workshops" (*ibid.*).

In the next section I discuss school-based learning programme development.

2.6 SCHOOL-BASED LEARNING PROGRAMME DEVELOPMENT

According to Lotz and Olivier(1998) professional development in the *Learning for Sustainability Project*, is viewed as a process which enables educators to respond to, and gain a better understanding of their professional practice over time. They note further that the new curriculum requires a “fundamental shift in teachers’ perception of their roles as well as real changes in what they evaluate and how they evaluate learners” (Lotz and Olivier, 1998:4). Lotz-Sisitka and Olivier (2000) note that the ability to interpret learning programmes and curriculum policy is defined as an important dimension of applied competence in the interpretation and design of learning programmes. I concur with Du Toit [in personal communication with Lotz-Sisitka and Olivier (2000)] that teachers are generally unable to interpret appropriate levels of depth and scope which are required for Senior Phase Learning Programmes. Teachers also struggle to interpret specific and critical outcomes *pedagogically*, for example, what is meant by process skills in the Natural Sciences. New policy requirements furthermore require teachers to undergo a change in roles, as stipulated in the *Norms and Standards for Educators* policy (DoE, 2000a). This policy framework describes teachers as mediators of learning, interpreters and designers of learning programmes and materials, leaders, administrators and managers, scholars, researchers and lifelong learners, community members, citizens and pastors, assessors and learning area/phase specialists (seven roles defined for teachers in the *Norms and Standards for Educators* policy) (*ibid.*).

As interpreters and designers of learning programmes and materials, teachers are expected to possess a range of **practical competencies** including:

- The ability to interpret and adapt learning programmes [and lesson plans] so that they are appropriate to the context.
- Designing original learning programmes [and lesson plans] to meet the desired outcomes and be contextually relevant.
- Adapting and designing and/or selecting learning resources that are appropriate to the context (DoE, 2000a;16).

The educators are also expected to demonstrate **foundational competencies** like:

- Understanding the principles of the curriculum.
- Understanding various approaches to curriculum and programme design.

- Understanding the learning area to be taught, including content and pedagogical knowledge (DoE, 2000a:17).

The educators are also expected to demonstrate **reflexive competencies** which include:

- Reflecting on changing circumstances and conditions and adapting existing programmes, [lesson plans] and materials accordingly.
- Critically evaluating different programmes [and lesson plans] in real contexts and for their socio-political significance (DoE, 2000a:17).

Lotz-Sisitka and Olivier (2000:75) note that when these competencies are viewed in relation to other competencies as described in the other roles, they see the challenge to interpret, design and evaluate learning programmes to include other competencies such as:

- Having an understanding of, and the ability to respond to, current social and educational problems (including environmental problems in the broadest sense).
- Reflect on, and apply environmentally responsible approaches to community and local development.
- Create learning environments that encourage critical and reflective strategies, which respond to learners' capacities and draw on their prior knowledge.
- Understand the pedagogic content knowledge of learning areas, and assumptions that underpin different approaches to teaching and learning (amongst others).

They further argue (*ibid.*) that from the competencies outlined above, they see that curriculum development requires a complex of processes and skills, including:

- Compiling, adapting and evaluating materials for curriculum development.
- Reflecting on and applying materials and teaching methods and strategies in different settings, particularly in the context of a particular Learning Area.
- Being able to judge the relevance of curriculum activities and process to community and development needs.
- Having a deeper understanding of curriculum practice.
- Having an understanding of what 'appropriateness to context' might mean.

As indicated above, in understanding curriculum development processes, teachers are required to understand the curriculum policy framework in some depth, and also to have a broader understanding of the curriculum, curriculum processes and issues. The discussion below provides an insight into what is meant by curriculum.

2.7 POLICY IMPLEMENTATION IN SCHOOLS

In dealing with this section I will first of all discuss how curriculum is defined and also how teachers are currently participating in the implementation of policy.

2.7.1 Defining curriculum

Stenhouse (1975:1) notes that the Shorter Oxford Dictionary defines curriculum as a "course; especially a regular course of study at a school or university". According to Stenhouse (*ibid.*), this term has been used by the Shorter Oxford Dictionary since the 17th century where it marked the beginning of "... systematic and self-conscious attempts to regularise courses of study". Stenhouse (1975:2) notes that there are many different views of the curriculum, notably "curriculum as an intention, plan or prescription, an idea of what one would like to happen in schools" and as "the existing state of affairs in schools, what does, in fact happen". A curriculum can therefore be described as the subject matter, the learning experiences of the learners, the teaching methods used by the teacher and the methods of evaluation and assessment employed.

Teachers know that in order to teach effectively, they need to plan the learning interactions (the lessons); but how do they know what needs to be taught, what disciplinary knowledge (subject knowledge) would be appropriate to introduce, which teaching methods to use; what learning processes should the learners engage in and how will their learners be assessed? As indicated in the discussion on competencies above, these are some of the challenges facing teachers in the implementation of the OBE curriculum in South Africa, as almost all of these dimensions have changed radically with the phasing out of the apartheid curricula in South Africa.

Cornbleth (1990:5) views curriculum as what actually occurs in the classrooms, that is, an "ongoing social process comprised of interactions of students, teachers, knowledge and the milieu". She further argues that this conception of curriculum stands in contrast and in opposition to a prevailing "product conception" of curriculum as a document or plan. As far as curriculum knowledge is concerned, it is the selection, organization, treatment and distribution of knowledge made available to students that is of particular concern. This availability of curriculum knowledge to students refers to opportunities to

construct, reconstruct, or critique knowledge as well as the more common offering of knowledge as if it were a commodity or product.

Cornbleth (*ibid.*) also argues that curriculum as a practice cannot be understood adequately or changed substantially without attention to its context or setting. Curriculum is therefore *contextually shaped* and the relevant context is both structural and socio-cultural (Lotz-Sisitka, 2002). Another perspective, proposed by Grundy (1987) is similar to the perspective by Cornbleth. Grundy (1987:115) proposes a perspective which views curriculum as praxis. According to her, curriculum as praxis:

...is a social process that develops through the dynamic interaction of action and reflection. That is, curriculum is not simply a set of plans to be implemented, but is rather constituted through an active process in which planning, acting and evaluating are all reciprocally related and integrated into the process (*ibid.*:115).

According to Lotz-Sisitka (2003) Grundy's view therefore reflects a perspective in which a curriculum is constructed within actual learning situations with actual students.

Learning is a social process and curriculum is socially constructed. This may involve different views of what counts as legitimate knowledge. She (*ibid.*) notes further that Grundy's perspective on curriculum reflects an "emancipatory" view of curriculum, in that actors, that is, teachers and learners are encouraged to actively critique and evaluate the curriculum as it unfolds and to critique the way in which knowledge is presented in the curriculum. This perspective shows a concern for knowledge or power in curriculum (*ibid.*).

According to Lotz-Sisitka (2003), governments in many countries around the world are trying to combine product centred and process centred approaches to curriculum, by using outcomes-based models. In Outcomes-Based Education, the product of learning is defined by a set of outcomes, but there is "freedom" to design different processes of learning in different contexts to achieve the outcomes. South Africa has adopted an outcomes-based approach to curriculum. In outcomes-based curriculum models, not only the products of learning are assessed or examined but processes of learning are also assessed. According to the DoE (2002) the revised NCS (R-9) emphasizes both content and process (see section 2.3.1 above).

2.7.2 Teacher participation in policy implementation

Policy-makers at national levels usually produce policy and the schools and teachers remain in the background. The emphasis is clearly on policy production and to a lesser extent on the implementation of policy. These are seen as two separate processes whereas they should ideally complement one another. Smit (2001:68) argues that despite the growing literature on educational change and policy change, relatively little research has been done on the experiences of primary school teachers in countries like South Africa. She further argues that literature that is available on teachers' experiences of policy change relates to educational contexts where the schools are well resourced, teachers are highly qualified and the teacher-pupil ratios are low. Even if this is the case teachers are required to change themselves and what they do, to meet the specifications laid down by policy-makers who neither know them or the contexts in which they work.

One of the problems which is associated with the implementation of Curriculum 2005 as cited by Rogan (2000:121) is that the training is directed at teachers, many of whom are operating at stage one or two and are expected to move to a stage four mode of operation. According to Beeby (1966) as cited in Rogan (2000:118) schools can be categorized and classified as belonging to one of the four growth stages known as Dame School, Formalism, Transition and Meaning. In a Dame School the teachers are ill-educated and untrained and they are characterized by being disorganized, users of relatively meaningless symbols who have very narrow subject content, very low standards and concentrate on memorization. In the Formalism Stage the teachers are ill-educated but trained. They are characterized by the fact that they are highly organized, but use symbols with limited meaning. They follow a rigid syllabus, emphasis is on the 3Rs, rigid methods: one best way; one textbook; external examinations; inspection stresses; discipline is tight and external; memorizing is highly stressed and emotional life is generally ignored.

Schools that are in a Transition Stage are characterized by having better-educated, trained teachers. They have roughly the same goals as those schools in the Formalism Stage but they are more efficiently achieved. There is more emphasis on meaning but this is still rather 'thin' and formal, syllabus and textbooks are less restrictive but the teachers hesitate to use greater freedom. Final leaving examinations often restrict

experimentation and there's little in the classroom to cater for the emotional and creative life of child (*ibid.*).

The schools that are in the Meaning Stage have well-educated and well-trained teachers. In these schools meaning and understanding is stressed, and the curriculum is somewhat wider. There's a variety of content and methods, and individual differences are catered for. Activity methods, problem solving and creativity, internal tests, and relaxed and positive discipline influence a focus on emotional and aesthetic life as well as intellectual aspects of schooling and development. Closer relations exist with the community; better buildings and equipment are essential. In the South African context, there is little concentrated support provided to assist schools to make the transition from stage to stage.

This view is supported by Welton (2001:179), who says that there is no full 'up to school' systematic national or provincial programme to support change in the management of learning, and no coherent strategy for education management development. He further argues that the national policies are well accepted at provincial and local levels, and the main call is for help in the interpretation and how to implement the new policy. He sees a problem of capacity and readiness for change. Welton (*ibid.*) sees the problem being the capacity to change rather than readiness to change, a finding which is supported by the Curriculum Review Committee (2000b) when they note that there are high levels of support for OBE, but less capacity to deal with its challenges for re-orientation and transformation.

This capacity issue, Welton (2001) argues, can be addressed by conducting training which will provide an opportunity for greater understanding of the nature and need for change, leading to improved motivation and 'readiness for change'. In my experience, I have found that teachers are willing to change but they are overwhelmed by the enormity of the task. They were never consulted about their needs and indeed these were often not considered. The focus of most of the training is on what the policy requires of the teachers. Rogan (2000) argues that, if the teachers were consulted they might have suggested some modest changes which would have helped them into the first rung of the ladder and boosted their confidence. According to Rogan (2000:121):

... innovation is most likely to succeed when the teacher takes a series of small steps towards the ultimate goal rather “one giant leap”. Taking the small steps then becomes a habit and one finds that there are always new ways of achieving the goal and the goal becomes a moving target and the teacher becomes a life long learner and innovator.

The other problem which has been cited in the Report of the Review Committee on C2005, (DoE, 2000b:57) is that the training that was conducted focused on teaching the terminology rather than engaging with the substance underlying the terminology. The Review noted further that complexity of the terminology has not allowed teachers to come to grips with the basic implications of outcomes-based education for classroom practice.

The NEEP – GET has responded to this issue by coming up with some guidelines for ‘*Lesson Planning for a Healthy Environment*’ (NEEP-GET, 2004) which engages with:

- (a) **the curriculum framework** (see aspect (a) – (e) in Table 2.1 below),
- (b) **the substance of teaching and learning**, including a focus on learning processes (see aspect (f) – (j) in Table 2.1 below), and
- (c) **school community linkages** (see aspects (k) and (l) in Table 2.1 below).

This NEEP – GET publication draws on lesson planning work conducted in the NEEP – GET, and aims to provide an interactive text which will allow educators to explore not only the technical dimensions of the curriculum framework (for example, how outcomes and assessment standards are linked, or how integration should be planned for) but also issues associated with changes in teaching and learning approaches (for example, thinking about learning, using resource-based approaches to further enhance learning, and considering the use of learning support materials to enhance learning), thus emphasizing the importance of learning processes in curriculum change. The publication also addresses ways of supporting school-community links through lesson planning. It also introduces a specific section on considering context in lesson planning (NEEP-GET, 2004). This framework therefore provides a useful orientation for supporting lesson planning development, given that it addresses many of the issues raised in the critiques of policy implementation above. In this study I aim to draw on this framework in critically reviewing strategies used by subject advisors and facilitators to support lesson planning (see chapters 4 and 5).

Table 2.1 Framework for contextualized lesson planning (NEEP, 2004 :36 - 59)

RECOMMENDED ASPECT FOR LESSON PLANNING	JUSTIFICATION
<p>CURRICULUM FRAMEWORK ASPECTS:</p> <p>(a) Links between outcomes and assessment standards</p> <p>(b) Interpreting environmental focus in the learning area</p> <p>(c) Interpreting the curriculum principles</p> <p>(d) Planning for assessment</p>	<ul style="list-style-type: none"> • Ensuring links between outcomes and assessment standards helps teachers to interpret what is required for the learning outcomes at each of the different phases and grades. • It also provides some “content” guidance although it does not limit the teacher. • It therefore ensures that appropriate activities are structured for learners at different grades and phase levels ensuring progression and high content, high skills. • An environmental focus is embedded in each of the learning areas, since environment is an integral part of each of the learning areas according to the revised National Curriculum Statement (R-9). • When an environmental focus is interpreted in each of the learning areas it is important that the essence of each learning area is brought out and reflected. • Each of the learning areas has a contribution to enabling learners to understand the relationship between human rights, social justice, a healthy environment and inclusivity. • Each of the learning areas also has a contribution to make in enabling the values of sustainable living, as outlined in the South African Constitution and curriculum aims, which hope to develop learners that show respect for the environment. • Through interpreting the curriculum principles into lesson planning, learners can explore the issues, but also explore solutions. • Integrating the curriculum principles into lesson planning draws attention to key social priorities in re-orienting South African society towards a more socially just and environmentally sustainable future for all. • Ensures that assessment activities are integrated in the lesson plan and that different assessment tools can be used to assess learning. • Ensures that assessment activities are based on assessment standards and assessment activities and tools are planned alongside the learning activities.

<p>(e) Ensuring meaningful integration</p>	<ul style="list-style-type: none"> • Ensures that assessment is based on evidence of learning and that assessment can be easily recorded during the learning activities. • To create meaningful activities for active learning. • To strengthen the learning outcomes in a particular learning programme. • To ensure greater relevance and application of learning and provide learners with a more holistic learning experience. • Helps to situate 'classroom learning' in real-life experience and context and helps the learners to understand these better. • Helps the learners to experience the value and purpose of the different learning areas, and what each learning area brings.
<p>LEARNING PROCESS ASPECTS: (f) Thinking about learning</p>	<ul style="list-style-type: none"> • In order to support learning in different ways (e.g. through mobilizing prior knowledge, providing appropriate cognitive challenges, allowing for learner interactions; considering how activities and materials can scaffold learning etc.). • In order to develop a deeper understanding of learning processes • To consider the pedagogical changes implicit in OBE.
<p>(g) Considering the context</p>	<ul style="list-style-type: none"> • Environmental issues and risks are often context-specific, when teachers deal with these they need to consider the context from different perspectives. • The different perspectives will provide insights into the context and these help in understanding the context better. • To enhance relevance and transfer in curriculum activities
<p>(h) Mobilizing indigenous knowledge</p>	<ul style="list-style-type: none"> • To help learners encounter more than one way of knowing and more than one knowledge system (the education system is currently dominated by Western / Scientific knowledge frameworks). Learners will be able to explore indigenous knowledge in local cultural context.
<p>(i) Using different teaching methods</p>	<ul style="list-style-type: none"> • To foster environmental learning in each of the learning areas.

needs of the learners. The revised NCS (R-9) provides more comprehensive guidelines on how to interpret the learning outcomes and assessment standards, how to conduct assessments, and how to undertake learning programme and work schedule planning at the phase and grade level, with some guidance provided on lesson planning (DoE, 2004). This guidance does not, however, deal with lesson planning in any detail. Educators will need to be supported and assisted by subject advisors and other facilitators in doing this school-based curriculum development work through continuous in-service courses, as well as through monitoring and support. The NEEP – GET guidelines thus provide some guidance on how this can be approached for supporting the environmental focus in the learning areas, which is the focus of this study.

However, subject advisors themselves are experiencing problems because they were never prepared for the positions that they now hold, and they have few opportunities for professional development. This is supported by the findings in the formative monitoring and evaluation conducted for NEEP – GET. A report by Mphaphuli *et al.* (2003, cited above), entitled “*Perspectives on the Role of Curriculum Support Staff*” mentions that the Curriculum Support Staff (subject advisors) lack capacity and confidence to support educators (see section 2.4 above). This is partly due to the limited support from the head office and the fact that people are made “jack[s] of all trades and master[s] of none” due to the shortage of personnel (Mphaphuli *et al.*, 2003:17). Many subject advisors are also new to the profession, having recently been teachers, and providing curriculum support to teachers is a new skill for them. However, Williams (2002:61) indicates that the department is responsible for ensuring that the official curriculum is implemented within the agreed upon framework, with integrity and commitment to the goals of the curriculum, with a sense of pride and accountability. He also notes that the department has to ensure that the curriculum’s emphasis on social justice, human rights, inclusivity and a healthy environment permeates every classroom in the country. The revised NCS (Grades R-9) training programmes show that emphasis is being placed on ensuring that all educators (school and office-based) have an understanding of OBE, that they subscribe to its principles and philosophy, that they are *au fait* with appropriate teaching and assessment techniques, that they are certain about the authority they have to make decisions and are also clear about the limits of the authority, that they are enthusiastic and committed and that they have at least the basic resources to make curriculum implementation possible.

The revised NCS (Grades R-9) also provides some guidance on lesson planning, but most of this is limited to providing a structural framework for lesson planning (Raven & Lotz-Sisitka, 2004; DoE 2004). The guidance provided does not address issues of 'thinking about learning' or the learning process aspects as identified by NEEP – GET (2004) or an emphasis on school-community links and improvements as identified by NEEP – GET (2004, see Table 2.1 above). It would seem therefore that the NCS (Grades R-9) lesson planning support is limited to aspects (a) – (e) in Table 2.1 above. While it provides better scaffolding than that provided during the first phase of C2005, this offers a somewhat limited framework to guide subject advisors in providing support for teachers, that may not address the issues associated with policy implementation as identified by Rogan (2000); Welton (2001); Smit (2001); Reddy (2001) and Moll (2002) as cited above.

These issues are, however, not being ignored by the Department of Education. As mentioned by Williams [the Chief Director: Schooling in the DoE] (2002) the revised NCS (Grades R-9) implementation team should ensure that the activities of the various line-function units should be coordinated so that ongoing curriculum development, monitoring and evaluation links with learning support materials, education management and governance and teacher development are conceptualized, planned, resourced and delivered within the shared strategic and operational framework. Williams (2002) notes that the implementation team therefore needs to focus on a number of areas that require attention e.g.

- How will the curriculum be implemented in practice and converted into teaching and learning? [implying a concern for lesson planning and learning]
- How will learning programmes emerge? [implying a concern for context and articulation of learning programmes within context]
- How will Learning Support Materials(LSM) be developed and how would LSM get into the hands of the learners, how would they be optimally utilized and would they be retrieved at the end of the year? [implying a concern for learning processes]
- How would bureaucracy internalize a project like curriculum reform? [indicating a concern for the complexity of the curriculum transformation process] (*ibid.*).

Another issue which needs to be emphasized is the diversity of context, and that more than one way of implementation may be needed. In this regard it is important to acknowledge that people come from different contexts and different backgrounds. As indicated by the NEEP – GET in Table 2.1 above, a consideration of context is important for environmental learning because of the diverse and often complex nature of environmental issues and risks, which manifest differently in different contexts. Williams (2002) further notes that the basic prerequisites that are vital to make successful curriculum delivery possible include a combination of professional expertise and preparation, basic learning support materials and equipment, stable organized schools with adequate management and administrative capacity, and ongoing support from office-based departmental personnel (subject advisors are key in providing support for curriculum implementation).

2.8 THE ROLE OF SUBJECT ADVISORS

According to Mphaphuli *et al.* (2003: 10), the roles and responsibilities cited by the subject advisors that they interviewed included:

- Guidance, assistance and support of educators (development of 'support systems').
- Providing support to teachers to implement C2005
- Training (OBE, curriculum, teaching strategies), including organization of workshops
- Facilitation of OBE implementation/learning/classroom teaching
- Capacity building of teachers
- Monitoring the implementation of the curriculum
- Monitoring CASS and OBE implementation
- Implementation of Assessment policy
- Teacher professional development ('improving teacher capacity')

These responsibilities involve a range of activities including school visits, organizing workshops, interpretation of policies and development of 'frameworks' to guide teachers' implementation of all aspects of the curriculum.

It has also been noted that most of the subject advisors found it difficult to identify their key performance areas as they did not have formal job descriptions that were recorded (*ibid.*). However job descriptions for the subject advisors do exist in the Eastern Cape Province, and are described below.

2.8.1 Job descriptions

According to the Department of Education in the Eastern Cape (undated) the key areas of responsibility for subject advisors are:

Development, support and training of school-based educators in:

- **Curriculum policy.** This is done by disseminating official curriculum documents to schools; facilitating the correct interpretation and common understanding of curriculum policy; responding to all queries in curriculum and inputting into curriculum development processes.
- **Curriculum implementation.** In this case the subject advisors advise, guide, train and support educators on lesson planning, preparation and presentation; classroom management; learner assessment; the content of specified learning areas and phases; development and improvisation of the educator's own teaching or learning support material. They also facilitate the establishment of effective functioning of curriculum groupings; networking between schools; and organize exchange programmes and analyze examination results and identify key trends.

Office administration. This is done by responding to correspondence from schools; writing circulars to educators; updating schools and writing up regular reports; establishing and maintaining a relevant information database to inform planning and decision making and preparing regular plans and budgets.

District, provincial and national examinations. This is done by working with Education Development Officers (EDOs) to coordinate, manage and monitor examinations and year marks and also the learners' portfolios.

Monitoring. This involves monitoring how educators are implementing the curriculum and ensuring that the curriculum is being implemented in accordance with national and provincial policy. This includes performing duties which are related to processes of Quality Assurance.

As indicated in section 2.4 above, these functions are impacted upon by contextual constraints including logistics, attitudes and capacity to deliver these functions.

2.8.2 Training of subject advisors

Although the Eastern Cape Department of Education has laid out these key areas of responsibility for the subject advisors, there has been no intensive training which will enable the subject advisors to perform their roles effectively. This may be attributed to the insufficient amount of time spent by the existing provincial personnel in supporting the subject advisors due to the performance of multiple functions. The NEEP – GET project in the Eastern Cape provides one of the few training opportunities for subject advisors at a provincial level, and only works with a small number of the subject advisors, and is thus not adequate for addressing the broad-based needs for supporting subject advisors.

2.8.3 Innovative strategies

Despite all the problems mentioned, subject advisors have developed strategies to guide teachers in interpreting and implementing policy to enable them to develop learning programme units. An example of such strategies are workshops in which the specific outcomes for each learning area are “unpacked”. “Unpacking” the outcomes involves guiding educators to look at each specific outcome to determine what skills, knowledge, values and attitudes can be developed through a particular specific outcome in a particular learning area (see chapter 4). This is done to help build the capacity of teachers, school management teams and departmental support personnel to develop, implement, manage and support the development of learning programmes (DoE, 2002a).

2.9 Conclusion

According to Lotz and Olivier (1998) educators are no longer seen as top-down authorities or social engineers, nor as background facilitators, but as active mediators of knowledge and values. Learning programmes which, for example, encourage joint investigations of local environmental problems reflect these changes in understanding

about teaching and learning and are congruent with the social constructivist orientation proposed within Curriculum 2005 and the revised NCS (R-9) national policy documentation (Janse van Rensburg and Lotz-Sisitka, 2000; Raven & Lotz-Sisitka, 2004).

The NEEP – GET project, which forms the focus of this case study, was established to build capacity in the system to respond to policy implementation challenges, particularly the need to develop an environmental focus in the learning areas of C2005. To this end, the NEEP – GET has contributed to curriculum policy, and has established clusters of subject advisors and teachers who are working at implementing an environmental learning focus in the provincial education departments, in accordance with policy requirements. As noted above, the policy context has changed rapidly over the past four years, involving a curriculum review (DoE 2000b) and the implementation of a revised National Curriculum Statement (R-9). This has been accompanied by improvements in training programmes to guide and implement the revised curriculum. However, this process still appears to focus heavily on the structural features of the curriculum, and according to researchers such as Rogan (2000), Welton (2001), Moll (2002), Reddy (2001) and Raven and Lotz-Sisitka (2004) there is a need for further attention to be given to learning processes and transformations at school level, where teachers are experiencing a new responsibility for curriculum development. Lesson planning is a key dimension of this work, and some guidelines for lesson planning have been provided by the DoE (2004) in the context of the revised NCS (Grades R-9) training programmes and materials. The NEEP – GET has also developed a set of lesson planning guidelines, which focus on lesson planning for a healthy environment (see Table 2.1 above) which could prove to be useful for subject advisors in their support function at school level. Currently the subject advisor's position is characterized by problems associated with logistics, capacity and attitudes. These are directly linked to the problems more broadly experienced in the system to implement curriculum policy change, indicating that providing support to teachers for lesson planning is not an easy matter.

In the next chapter I describe the research methodology that I used to investigate this phenomenon in more depth in the context of the Eastern Cape NEEP – GET professional development clusters.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 INTRODUCTION

In research conversations the terms methodology and method are often used interchangeably. However, Harding (1987) as cited in Gough (undated) points out that distinguishing between method and methodology is necessary. For her a research method refers to a technique of gathering evidence (a way of proceeding in) whereas methodology refers to a theory of producing knowledge through research and provides a rationale for the way a researcher proceeds. I have decided, for the purposes of this study, to use an interpretive case study methodology, and I have used different qualitative research methods to generate the data. I discuss the methodology and the methods in the section below. I also provide an overview of how I analysed the data, and I discuss ethical issues and validity issues in the study.

3.2 A CASE STUDY

According to Bassey (1999:58) a case study is an empirical study, which is conducted within "a localised boundary of space and time into interesting aspects of an educational activity or programme or institution or system". It is conducted mainly in its natural context and within an ethic of respect of persons. Cohen and Manion (2000) concur with Bassey (1999), when they say that a case study researcher typically observes the characteristics of an individual unit – a child, a clique, a class, a school or a community. The purpose of such an observation is to probe deeply and to analyze intensively the "multifarious phenomena that constitute the life cycle of the unit". The unit that I was studying was the subject advisors and facilitators participating in the Eastern Cape NEEP – GET cluster. This was because they were all involved in providing support to teachers to develop lesson plans with an environmental learning focus. It also included teachers from the Makana cluster (one of the teacher clusters affiliated to the Eastern Cape NEEP – GET cluster) so that I could observe lesson planning support in practice.

Cohen, Manion and Morrison (2002:181) note that case studies provide a unique example of "real people in real situations", enabling readers to understand ideas more clearly. They further say that case studies establish cause and effect and one of their strengths is that they observe effects in real contexts, recognizing that the context is a powerful determinant of both causes and effects. Contexts are unique and dynamic; hence case studies investigate and report the "... complex dynamic and unfolding interactions of events, human relationships and other factors in a unique instance" (ibid.).

Yin (1993: 1) concurs with Cohen, Manion and Morrison (2002) when he says that a case study is a method of choice when the phenomenon under study is "not readily distinguishable from its context". The inclusion of the context as a major part of the study creates distinctive technical challenges. These challenges are:

- The richness of the context means that the ensuing study will likely have more variables than the data points,
- The richness means that the study cannot rely on a single data collecting method but will require the use of multiple sources of evidence, and
- Even if all the relevant variables are quantitative, distinctive strategies will be needed for the research design and analysis (ibid.).

Walker (1985:33) also states that a case study is the examination of an instance in action. He further says that it is the study of "particular incidents and events, and the selective collection of information on biography, personality, intentions and values". There are several different types of case studies, which have been identified by various writers. Yin (1984) as cited in Cohen, Manion and Morrison (2002: 183) identifies three types of case studies and these are identified in terms of their outcomes. These three types are the exploratory case study, descriptive case study and the explanatory case study. Merriam (1988) as cited in Cohen, Manion and Morrison (2002:183) also identifies three types of case studies and these are: the descriptive, interpretative and evaluative case studies. This case study is an interpretive case study and aims to describe the strategies used by subject advisors and facilitators to support lesson planning with an environmental focus.

3.2.1 An interpretive case study

Interpretive research, according to Mc Taggart (1991:3), seeks to understand what is happening in terms in which participants in events actually understand the events themselves. This means that this study will be concerned with understanding daily occurrences as well as the meanings people give to phenomena. According to Conole (1993), the task of a researcher in an interpretive case study becomes that of understanding what is going on, the definition of the situation at least in the first instance. This situation does not require detachment but active involvement in the process of negotiated meaning. The researcher becomes able to identify patterns of meaning that emerge. Meanings are generated and shared through language. Stake (1995:47) states that a study is interpretive if:

- its researchers rely more on intuition, with many important criteria not specified;
- its on-site observers work to keep attention free to recognize problem-relevant events, and
- if it is attuned to the fact that research involves researcher-subject interaction.
-

In this study I aim to document, describe and interpret the strategies which are used by subject advisors in helping teachers to interpret policy in order to develop learning programme units with an environmental learning focus. I chose these participants because they are involved with helping teachers to develop learning programme units with an environmental learning focus in the NEEP – GET.

3.3 DATA PRODUCTION TECHNIQUES

I have decided to use the term data production instead of the commonly used term data collection. According to Gough (undated) data is not collected or gathered as if it is “out there” waiting to be “gathered” or “collected”(or, for that matter, “discovered”) but is produced and constructed by the activities of the researchers. In this research process I used the following techniques for data production: questionnaires; interviews; document analysis and participant observation. I discuss each of these techniques briefly, to provide insight into the way in which the techniques were used to produce data.

3.3.1 Questionnaires

Wilson and McLean, 1994 (in Cohen, Marion and Morrison, 2002:245) define the questionnaire as “a widely used and useful instrument for collecting survey information, providing structured, often numerical data, being able to be ministered by a researcher, and often being comparatively straight forward to analyse”. Schmuck (1997:52) concurs with the above definition when he defines questionnaires as “printed lists of interrogative or declarative statements that individuals respond to in writing”. He (ibid.) further notes that individuals normally fill out the questionnaires privately, but groups can be asked to respond to a questionnaire via discussion and polling.

Irwin (2002), notes that using a questionnaire has a number of advantages that include reaching a number of respondents at a low cost. He (ibid.) further notes that questionnaires place emphasis on writing rather than on verbal skills. He notes that this might be both an advantage and disadvantage. While he recognizes the advantage of using questionnaires, he notes that there may be little or no opportunity for respondents to clarify questions they are not certain of or to ask questions of their own.

In this study I wrote a letter (Appendix A) to subject advisors and facilitators requesting them to complete a questionnaire (Appendix B) which was one of my data producing techniques. I did not get any response from my colleagues so I decided to attend a NEEP – GET provincial meeting which was held in King William’s Town and a workshop which was conducted for Foundation Phase subject advisors which was held in East London where I asked the subject advisors and the facilitators verbally to help me complete the questionnaire, which they were given in the same meeting and workshop. Some of them were able to complete the questionnaire in the meeting and in the workshop and some of them promised that they would complete the questionnaire later and send it to me. Out of the 20 questionnaires which were handed out, I managed to get eight questionnaires back. These questionnaires are referred to as Q1-8 in chapters 4, 5 and 6.

Through the questionnaires I wanted to gather information on several aspects which relate to my research question. I asked questions like: What have the subject advisors or facilitators done to help teachers develop learning programme units with an

environmental learning focus?; Do they assist the teachers to design activities that are relevant to the learning outcomes or the specific outcomes? If they are doing so, they should explain how they offer that assistance. They were further asked whether they are supporting teachers to undertake assessment; to mention just a few (see Appendix B). The questionnaires were followed with interviews.

3.3.2 Interviews

An interview is an important source of data production in interpretive studies. Interviews provide descriptive data in the interviewee's own words and also enable one to access that which is unobservable. According to Patton (1990) as cited in Arskey and Knight (1999:32) "the purpose of interviewing is to find out what it is in and on a person's mind,... to access the perspective of the person being interviewed,... to find out from the things we cannot directly observe." Seidman (1991:3) states that the purpose of interviewing "is an interest in understanding the experiences of other people and the meaning they make of experience" He further argues that being interested in others is the key to some of the basic assumptions underlying the interviewing technique. It requires that we as interviewers "keep our egos in check and realize that we are not the center of the world" (ibid.). It demands that our actions as interviewers indicate that others' stories are important. Interviewing provides access to the context of the people's behaviour and thereby provides a way for researchers to understand that behaviour. The interviews therefore focus on the informants' understanding rather than checking on the interviewer's account. Interviews also allow answers to be clarified. This is also supported by McNiff, Lomax and Whitehead (1996:101) when they say "Interviews have distinct advantages over a questionnaire because you can get a richer feedback as a result of being able to probe further".

Semi-structured interviews using an interview schedule (Appendix C) were conducted with eight Subject Advisors and facilitators of the NEEP – GET cluster in the Eastern Cape Province (listed as I1-8 in chapters 4 and 5). According to Akroyd and Hughes (1981), in a semi-structured interview the interviewer normally has to ask the specified questions but is free to probe beyond them as necessary. Semi-structured interviews were used because they would give me a better chance to follow up on the responses. Semi-structured interviews also provide opportunities to respond to both predetermined

questions and free responses. This results in the production of richer data. The interviews were audio taped and were transcribed into print form. The typed transcripts were returned to the interviewees for validation and supplementary comment if required. I initially planned to interview subject advisors that were responsible for the Natural Sciences and Human and Social Sciences Learning Areas in the Senior Phase. These Learning Areas have been chosen for this study because they have a strong focus on environmental learning (see Lotz-Sisitka & Raven, 2001; Rosenburg, 2003). A strong focus on environment is articulated in the specific outcomes of each of these Learning Areas. Due to several problems encountered during the study I ended up interviewing the subject advisors and facilitators that I managed to get hold of irrespective of their Learning Areas. This did not affect the validity of the study in any way, as all the Learning Areas have an environmental learning focus (Rosenburg, 2003; see also NEEP-GET, 2004) and a range of educators from different Learning Areas participate in the NEEP – GET cluster. The interviews were followed with document analysis.

3.3.4 Document analysis

Document analysis provides additional information to that which may be accessible through interviewing and observation. It further helps to clarify other data. Hitchcock and Hughes (1995:212) define documents as mainly written texts which relate to some aspect of the social world. These range from official documents to private and personal records. Taylor and Bogdan (1998:81) concur with Hitchcock and Hughes (1995) when they say that written documents such as official reports, memos, correspondence, contracts, salary schedules, files, evaluation forms and diaries provide a potentially important source of data. They further argue that these documents should be examined not as objective data but rather to give insight into organizational processes and the perspectives of the people who write and use them as well as to alert the researcher to fruitful lines of inquiry.

The documents that were analysed in this study include the preparation books of the subject advisors and facilitators as well as any documents produced prior to and in the workshops. Three teacher portfolios belonging to three teachers participating in the Makana cluster were analysed (Teacher I, Teacher A and Teacher J). These portfolios were quite expansive, and included two years of work in the Makana cluster (teachers

meet for 10 to 12 three-hour workshops per year). In analysing these portfolios I looked at three lesson plans [called learning programme units in the portfolios] that were developed by the teachers in this cluster. In order to consider the lesson plans and the associated support provided critically I drew on the NEEP – GET framework for lesson planning (see Table 2.1). This provided a lens through which I could examine different aspects of lesson planning, as reflected in the teachers' lesson plans. I also looked at the teacher reflections which were included in the portfolios. I also looked at the comments which were made by the facilitators who helped these teachers in the development of these lesson plans and I examined learners' work (samples were contained in the portfolios, as these provided additional insights into lesson planning, but the learners' work was not a main source of data). I also reviewed the Makana cluster reports report produced by Timmermans and Gon (2003). This was done to gain an insight into, and a deeper understanding of the responses that were given during the interview sessions and also what was observed during the workshops.

3.3.5 Observations

Observations were conducted when the Makana cluster had a cluster meeting and when there was a NEEP – GET workshop for Foundation Phase subject advisors. In this way I was able to observe aspects of subject advisor and facilitator practice. Stake (1995:60) states that observations enable the researcher to work towards greater understanding of the case. During the observation, the qualitative case study researcher "... keeps a good record of events to provide an incontestable description for further analysis and ultimate report writing" (*ibid.*). Observations as cited by Cohen, Manion and Morrison (2002:305), enable the researchers to:

understand the context of the programmes, to be open-ended and inductive, to see things that might otherwise be unconsciously missed, to discover things that the participants might not freely talk about in interview situations, to move beyond perception-based data and to access personal knowledge.

Observations were undertaken to enable me to discern ongoing behaviour as it occurred, and to make appropriate notes on behaviour as I observed. In this case study I was a participant observer. Scott and Usher (2000:100) state that being a participant observer allows better access to the meanings of participants in the research, and this is because participants' meanings are frequently opaque, misleading and incomplete. Without some

form of participation, there is "...no possibility of researchers understanding the effect that their presence has on the setting, which means that they are not able to reflexively construct the process of data collection" (*ibid.*). Participation may have a more profound purpose, in that it allows researchers direct experience of the activities they are observing. Thus, instead of understanding from a detached stance, participation has a direct experiential value. In order for the participant observers to effectively understand the constructs used by the participants, they need to understand both the context of the activities they are observing and how the data about them was collected. The observations were done to provide additional insight into the interview data and to find out whether there are any issues relating to the research questions, strategies, which were not mentioned during the interview session or in the questionnaires or document analysis. Observations also enabled me to gain in-depth insight into how the different strategies used by subject advisors and facilitators are applied.

According to Patton (1990:203-5, cited in Cohen et al., 2000:305) observation affords the researcher opportunities to gather information on 'live activities from live situations' and enables the researcher to understand the context of the programmes and discover things not mentioned in interviews and questionnaires. Observation schedules were used to capture data during observations. (Appendix D).

3.4 VALIDATION OF DATA PRODUCED AND TRUSTWORTHINESS

In order to validate the research findings **triangulation** was used. Mathison (1988:13–17) argues that good research practice 'obligates' the researcher to triangulate and that means one has to use multiple methods and data sources to enhance the validity of the research. Miles and Huberman (1984 as cited in Mathison 1988) indicate that triangulation is supposed to support a finding by showing that the independent measures of it agree with it or at least do not contradict it. Ashwell (1997) defines triangulation as a method of comparing and contrasting evidence using a number of different research tools or situations, in order to find points of agreement. Lather (1986) concurs with Mathison (1988) and Miles and Huberman (1984 as cited in Mathison [1988]) when she says that triangulation is critical in establishing data trustworthiness. As noted above, I used more than one method to generate data in this study, and data derived from these methods was triangulated during the analysis phase.

Arskey and Knight (1999:21) argue that triangulation is not an end in itself and they further say that researchers who consider it need to think carefully about it and also what they hope to achieve. They say that it serves two purposes, these being 'confirmation' and 'completeness'. I agree with them because in following up the interviews with observation and document analysis I wanted to confirm that the strategies mentioned by the Subject Advisors and Facilitators were actually applied during workshop situations. This also contributed to the completeness of the data produced.

Lather (1986:271) argues that though '**face validity**' has been treated lightly and dismissed, it is important in research. Lather (1986) further cites Reason and Rowan (1981:248) and says 'Good research ... goes back to the subjects with tentative results and refines them in the light of the subjects' reactions'. I ensured face validity by taking the transcripts and gave them to the interviewees for them to look at. I asked them to indicate whether I had interpreted what they were saying correctly. Lather (1986:271), further critically comments that "analysis which only takes account of actor's perceptions of their situations could result in research being incorrectly declared invalid".

In order to ensure the trustworthiness of this research I have used **thick description** to reflect what I read from the questionnaire responses, documents analysed as well as what I heard from the interviews. According to Patton (1990:375), it is important that "... coherent answers to major descriptive questions should be put together before one starts to interpret the data" and this is known as "thick description". Also Firestone (1987) cited by Merriam (2001: 199), says the qualitative study provides the reader with "... a depiction of enough detail to show that the author's conclusions make sense".

Merriam stresses that:

... no matter what the type of research, 'validity and reliability are concerns that can be approached through careful attention to a study's conceptualization and the way in which data were collected, analyzed and interpreted and the way in which findings were presented' (Merriam, 2001: 199 – 200).

3.5 DATA ANALYSIS

Cohen, Manion and Morrison (2002:147) note that data analysis "involves organizing, accounting for, and explaining the data; in short, making sense of the data in terms of participants' definitions of the situation, noting patterns, themes, categories and regularities". They further argue that in qualitative research, data analysis commences

during the data collection process. According to Patton (1990:372) data analysis in interpretive research study takes on a particular orientation:

... there are no absolute rules to do the very best with your full intellect to fairly represent the data and communicate what the data reveals given the purpose of the study. This does not mean that there are no guidelines to assist in analysing data. But the guideline and procedural suggestions are not rules. Because the qualitative [interpretive] inquiry depends, at every stage on the skills, training, insights and capabilities of the researcher, qualitative analysis ultimately depends on the analytical intellect and style of the analyst. The human factor is the great strength and the fundamental weakness of qualitative inquiry and analysis.

“Progressive focussing”, according to Parlett and Hamilton (1976) as cited in Cohen, et al. (2002:148), starts with the researcher taking a “wide angle lens” to gather data and then “... through sifting, sorting, reviewing and reflecting on them, the salient features of the situation emerge”. These are then used as the agenda for the subsequent focussing. In this study I used a process of coding and defining analytical categories to assist me with this process of ‘progressive focussing’.

At the start of the data analysis process I compared the responses to the questionnaires and the interview transcripts to find out issues that might impact on the research question. Through a process of coding (using different coloured stickers), I sorted the raw data into broad categories and I drew on the step-by-step guide suggested by Bassey (1999:85–88). The data was sorted and colour coded and comments were made to illuminate aspects of the data. The following analytical categories and subcategories emerged during the process of data analysis. These are shown in table 3.1 below

Table 3.1 Analytical categories and subcategories used in data analysis:

CATEGORIES	SUB CATEGORIES
Role of subject advisors /facilitators	<ul style="list-style-type: none"> • Experience • Involvement in the NEEP – GET Cluster • Relevance of NEEP – GET work to Learning Areas of Subject Advisors
Strategies used in helping teachers develop Learning Programme Units (LPUs) with an environmental learning focus	<ul style="list-style-type: none"> • Workshops • School Visits • Curriculum guidance • Assessment guidance • Assistance to understand environmental issues • Pedagogical support
Issues emerging	<ul style="list-style-type: none"> • Professional development for both teachers and subject advisors. • Policy implementation issues

The findings, organized into categories and subcategories, are discussed in chapters 4 and 5. In chapter 4, I provide a detailed discussion of all the categories and subcategories that emerged in my study. In chapter 5, I discuss the findings in more depth, by using the framework provided by the NEEP – GET (2004, see Table 2.1) guidelines for lesson planning. This helped me to re-interpret the data and to gain further insights into challenges faced by subject advisors to provide support to teachers in lesson planning.

3.6 ETHICAL CONSIDERATIONS

Bassey (1999: 73) notes that research ethics centre around a) respect for democracy, b) respect for truth and c) respect for persons. He says:

‘In trying to tell a story, the researcher may claim a democratic right to investigate and publish the findings, and may insist that the evidence is trustworthy and portrays the truth of what happened, but may find that the people who provided evidence insist on the privacy to which they are entitled.’

To ensure ethical issues were attended to in the study, a letter (Appendix A) was written to the participants informing them of the research. I also asked permission from them to undertake the research, and I asked them if they would be willing to participate in the research. During the interview sessions the interviewees were also asked to give the researcher permission to audio tape their responses to be able to capture their responses. The participants were also assured that their identity would be kept anonymous and their responses would be treated with confidentiality. The participants have therefore been allocated “coded identities” to ensure anonymity.

3.7 CONCLUSION

In this chapter, I have provided an insight into the research methodology used, the methods and the research design decisions that were made to conduct this research. As I indicated I chose a case study where data was collected by using a variety of research methods. The research methods used were identified and the choice of the method was justified and explained. Data analysis strategies were explained. Validation and

trustworthiness of the data produced was discussed and a detailed account was provided of how ethical issues were dealt with.

In the next chapter, I report on the findings generated through the use of the methods mentioned.

CHAPTER 4

STRATEGIES USED BY SUBJECT ADVISORS AND FACILITATORS TO SUPPORT LESSON PLANNING

4.1 INTRODUCTION

In this chapter I present my findings on the strategies that are used by subject advisors / facilitators to help teachers develop lesson plans with an environmental learning focus. This chapter describes through “thick description”, the role played by subject advisors and facilitators in the implementation of curriculum policy, as discussed in chapter 2. It focuses particularly on school-based curriculum development, and the new responsibilities teachers are experiencing to develop learning programmes and lesson plans. The focus is mainly on lesson plans. The findings shared in this chapter include an overview of the different strategies used by subject advisors, based on interview and questionnaire data. More detailed observations, in-depth interviews and document analysis in the context of the support provided by facilitators and the subject advisor in the Makana cluster supplements the data generated through the questionnaires and interviews, providing a “richer picture” of support strategies associated with lesson planning. Through the analysis of teacher lesson plans, further insight is shared on issues associated with lesson planning, which has implications for support provision (see chapter 5 for a more in-depth discussion on this).

I firstly consider aspects related to the role of subject advisors and facilitators in this support process. I then consider the subject advisor participation in the NEEP – GET project to gain more insight into the need for lesson planning with an environmental focus. I then discuss the strategies used by subject advisors/facilitators in some depth, drawing on a range of data sources, as discussed above and in chapter 3.

4.2 ROLE OF SUBJECT ADVISORS / FACILITATORS

When interviewed, and through the questionnaires subject advisors indicated that their role is to facilitate curriculum delivery in the districts that they are working in. They do this by:

- monitoring and evaluating curriculum implementation
- providing guidance in learner assessment
- providing support for professional growth of teachers
- running workshops on the revised National Curriculum Statements and Continuous Assessment (CASS) for grades 9 and 12
- moderating Continuous Assessment (CASS)
- training grade 10 teachers in Outcomes-Based Education (OBE)
- facilitating other educational programmes such as the National Environmental Education Programme in the General Education and Training band (NEEP – GET) and IMBEWU (a project of the Eastern Cape which is involved with the improvement of primary schools), and
- visiting schools. (Q1 – 7)

In a provincial workshop which was held in East London in August 2003 for the Foundation Phase subject advisors, the subject advisors who were there saw their role as:

- Orientating teachers in the implementation of the revised NCS (Grades R-9)
- Assisting teachers to apply the principles of the NCS (Grades R-9) in the classroom situation.
- Making teachers aware of the environmental focus in the learning outcomes.
- Helping teachers to interpret the assessment standards and integrate assessment in the learning activities and
- Encouraging teachers to be involved in local projects (workshop observation August 2003).



In terms of experience there is considerable variation. Most of the interviewees have more than ten years experience generally, mostly as teachers or college lecturers, but relatively few have more than five years as subject advisors or facilitators. Different districts present different profiles in this respect with the majority of districts in the Eastern Cape dominated by less experienced subject advisors. (Q1- 8). The NEEP – GET project has an explicit function to provide professional development to subject advisors, as it was found that there are very few professional development opportunities available to them (Nduna, pers comm., 2003). The role of the provincial NEEP – GET coordinator is therefore to run professional development workshops for subject advisors on the integration of environmental learning in the classroom within the OBE curriculum (Nduna, pers comm., 2003)

As can be seen from the above, subject advisors have a strong **curriculum guidance and support role**, which is reflected in the strategies they use (see below). The NEEP – GET project thus aims to support them in this curriculum guidance and support role.

4.3 INVOLVEMENT WITH THE EASTERN CAPE NEEP – GET CLUSTER

The involvement of subject advisors in the NEEP – GET project ranged from six months to three years. According to Raven (2003:6) the Eastern Cape NEEP – GET cluster agreed on a programme for Curriculum Support staff which was to be comprised of two 2-day workshops per quarter and one reflection meeting every month. It became impossible to convene workshops this frequently due to budgetary constraints and complications and as a result three workshops were held in 2002, with one reflection workshop. In 2003 only one provincial cluster meeting was held. This was due to the shift of the focus of the project to respond to the Ministerial directive for a programme of intensive Foundation Phase training within the NCS (Grades R-9) framework. Many of the NEEP – GET activities were re-aligned within the NCS (Grades R-9) and were integrated into other provincial training processes. The Eastern Cape NEEP – GET therefore concentrated on working with the Foundation Phase subject advisors in 2003, and a cluster of 24 Foundation Phase subject advisors was established, to implement environmental education in the Foundation Phase.

4.3.1 Relevance of the NEEP – GET work to the learning areas of the subject advisors and facilitators

According to Raven (2003:13) the NEEP – GET project has provided a real opportunity for the Curriculum Support Staff as they are starting to get to grips with the socio-ecological issues that are reflected in the curriculum through their focus on environmental learning in their learning areas. The focus on environmental learning has also been embraced through their association with their newly developing understanding of OBE.

The subject advisors and the facilitators felt that NEEP – GET was relevant because it:

- is integrating environmental education within their learning areas
- unpacking learning outcomes with an environmental learning focus, and
- helping in the development of lesson plans.

They also felt that the ideas and activities are appropriate and positive and these enable them to transfer the skills developed through the project through to some schools (Q1-8).

4.3 STRATEGIES USED BY THE SUBJECT ADVISORS AND FACILITATORS TO SUPPORT LESSON PLANNING

Several strategies have been used by the subject advisors and facilitators to support teachers to develop lesson plans with an environmental learning focus. These strategies include the following, and are discussed in more detail below.

- Workshops,
- School visits,
- Curriculum guidance,
- Assessment guidance,
- Assistance to understand environmental issues,
- Pedagogical support and
- Professional development.

4.4.1 Workshops

Workshops seem to be the most common strategy used by both the subject advisors and facilitators (Q1-8, see also Raven, 2003: 27-63). This was also confirmed when I interviewed the participants. When presenting data on workshops the following will be discussed:

- Purpose of workshops,
- Timing of workshops,
- Content of workshops,
- Use of learning support material in workshops, and
- Service provider input in workshops.

4.4.1.1 Purpose of the workshops

From the analysis of the data it is clear that many subject advisors as well as facilitators use workshops as an organizational strategy to help teachers develop lesson plans (Q1–7). For the provincial coordinator the purpose of the workshops is to work with subject advisors and monitor and support teacher support work in cluster meetings (Q8). This indicates that in this project workshops are also used for providing support for subject advisors and facilitators.

In the workshops organized by subject advisors and facilitators for teachers, it seems that both the teachers and subject advisors share their experiences during the workshops so that they can learn from each other (Q1, 2, 3). For example a particular issue which might be a challenge for one person, could be experienced as a success for someone else, and these workshops provide space for teachers to share experience (1 2, 8).

In the Makana cluster the purpose of the workshops was more than sharing experiences. The Makana cluster had an intensive programme which was run over two phases, the first phase being the one where teachers were introduced to the NEEP – GET project and to teacher portfolios. During this phase they did an audit of their school to identify school-community issues and they developed School Environmental Policies for their schools. They also explored active learning process and tried out some activities

with learners (Timmermans & Gon, 2003). The second phase was involved the development of lesson plans using learning and teaching support materials, and continuation of the work on teacher portfolios. According to Raven (2003:48) during the first phase the workshops focused on:

- the analysis of environmental issues,
- the identification and analysis of local environmental issues,
- starting up school-based environmental activities using the framework of the School Environmental Policy Pack,
- the use of an active learning framework for developing environmental activities in the classroom, and
- the development of teacher portfolios and the reflections therein.

Lesson plan development in the second phase focused on the development and application of three lesson plans, in which teachers and learners engaged in teaching and learning processes to respond to three of the environmental issues that were identified with the learners (through the audits and school environmental policy development) during the first phase of the project.

According to Raven (2003:48) the main foci of the workshops in this phase was to:

- Recap on the understanding of environment and environmental education,
- Recap on identifying the environmental focus in the curriculum,
- Develop lesson plans (learning programme units) with an environmental focus,
- Encourage teachers to revisit their School Environmental Policies and identify how the issues that they were going to identify through their lesson plans and associated field trips were going to link with their policies and the action plans that they were developing for their schools, and
- Give portfolio feedback and develop the second year portfolios.

As can be seen from the above, this represents a comprehensive workshop programme aimed at supporting lesson planning with an environmental focus.

4.4.1.2 Timing of the workshops

According to the subject advisors, workshops for the teachers are run either during school hours or in the afternoons after school, depending on the context of the area. Eastern Cape is mainly rural and some clusters are composed of schools which are far away from each other. Moving from one school to the other becomes a problem at certain times of the day. Subject advisors noted that one of the reasons for holding workshops during school hours is the problem of transport (Q3, 5, 6), because “the taxis are usually moving towards town in the morning and towards home in the afternoon” (I 3). These workshops are normally run at a central venue, which is assumed to be accessible to all the teachers (Q 3, 5, 6).

In the Makana cluster the workshops were held after school and the teachers gathered in the Rhodes University Environmental Education Unit (RUEEU). They were also provided with something to eat before attending the workshop or cluster meeting. The geographical distance is not a problem as in the other areas of the Eastern Cape. The subject advisor from the district office came to this venue for cluster meetings, and also came to this venue to do cluster planning when needed.

4.4.1.3 Content of the workshops

In teacher workshops the teachers are guided in the identification of environmental issues in their contexts (Q1). For example, one respondent indicated that:

Firstly we help teachers to gain a clearer understanding of what they consider to be ‘environment’. Then we encourage teachers and learners to investigate local environmental issues and ask them to select one or more issues on which to develop learning programmes. The School Environmental Policy Pack has been used in helping teachers and learners to formulate policy statements and prioritise issues to which they would like to respond. They have been supported in finding environment in the assessment standards of the Revised National Curriculum Statement. We have also made use of the active learning framework to help structure the learning programmes. This framework helps to design learning programmes that consider prior knowledge and encourage activities for working with information, investigating issues in local contexts, taking actions on the problems identified and reporting on their activities (Q7).

In trying to help the teachers critically analyse environmental issues in the Makana cluster, the facilitators looked at what the teachers considered to be the environment (Timmermans and Gon, 2003:7). The teachers listed the aspects of what they considered to be the environment and the facilitators built this list into a diagram reflecting the social, political, economic and biophysical dimensions of their local environment. In the workshop the teachers completed a Work Together Task⁴ where they studied photographs of waste and considered the same dimensions of the environmental issues that were represented by the photographs. Teachers were then given a Work Away Task where they were expected to analyse a paper by David Weir entitled "Run into the Wind". What was observed was that half the teachers did the activity very successfully and the other half seemed to have misunderstood the task and instead analysed the dimensions of local environmental issues as was done in the workshop (*ibid.*). This misunderstanding has been attributed to the fact that teachers joined the project late. Overall the facilitators were happy because the teachers reflected that they were confident in their ability to analyse environmental issues from a number of different dimensions. To show confidence in the activity some teachers decided to do a similar exercise with their learners. The facilitators interpreted this as an illustration of their understanding of and confidence in the work and the materials used during the workshop (*ibid.*). This activity was undertaken because teachers work in different contexts, for example, the teachers came from rural areas, townships as well as farms (Raven 2003: 42), and the activity allowed them to explore different understandings of environment, in relation to these contexts.

According to Timmermans and Gon, (2003:12) teachers explored how their respective learning areas can contribute to environmental learning and environmental improvement. In this activity the teachers were guided by the handouts that they were given during the Work Together Task. These handouts were extracts from the NEEP – GET start up materials which focused on environmental focus in each learning area. Timmermans and Gon (2003) further report that many teachers had difficulty in finding an environmental focus in their respective learning areas during the first phase of the project but in phase two there were some improvements. For example in an analysis of a teacher lesson plan

⁴ The NEEP – GET used a strategy of work together and work away tasks in the professional development programmes.

produced under the broad environmental focus of 'resource issues in our community' Teacher I addressed "Environmental risks that are associated with the production of electricity". This was a lesson plan prepared for the natural sciences learning area and was focused on the prescribed content in this learning area on energy. Other content covered in the workshops is indicated in section 4.3.1 above.

4.4.1.4 Use of learning and teaching support material in workshops

According to Lotz-Sisitka and Raven (2001:50) the learning and teaching support materials and their use in professional development enables a better understanding of the environment, environmental education processes and integration of environment in the curriculum. Learning and teaching support materials also provide the teachers with practical ideas for developing lesson plans for use in their school contexts.

An important focus of the NEEP – GET workshops run by the subject advisors, is related to the use of learning and teaching support materials (Q1-8). In the workshops teachers are provided with guidance on how to use learning and teaching support materials effectively. One of the facilitators said:

In the Makana cluster we have aimed to support teachers in using and adapting available learning support material. In 2002, teachers were given Work Away Tasks over a series of workshops. The first Work Away Task was to develop learning units based on a comprehensive set of activities. Teachers had to work with either a set of materials focusing on waste or a set of materials focusing on waste and hygiene. Both of these sets were developed by the RUEEU in association with teachers and other service providers. The second Work Away Task was to work with one of the three of Makana service providers and with some stimulating information or activity suggestion and adapt the ideas or learning support materials they were given by the service providers into a learning unit.

The service providers provided the following for the learners:

- Millennium Tree Planting Project (MTTP) – information on how to plant a tree, some tree 'information cards' and some suggestions for tree planting activities.
- Umthathi – some information on nutrition and a suggested activity.
- REFYN – an article on a *Pelargonium* which is being heavily harvested in the Makana district for medicinal use by a foreign pharmaceutical company. (Q 7).

It was also clear from the findings that the subject advisors and the facilitators provided the teachers with this learning and teaching support material provided by the above-mentioned service providers as well as by the Department of Water Affairs and Forestry (DWAF), Birdlife and the Albany Museum (amongst other groups) (Qs. 1; 2; 3; 5; 6; 7 and 8). The material that was handed out during the workshops, depending on what was going to be discussed in those particular workshops, included: The Water Cycle poster, Underground Water posters, Enviroteach magazines, a Water Quality Study Kit from (DWAF); a Climate change booklet from the Department of Environmental Affairs and Tourism (DEA&T), and the NEEP – GET start up materials as well as resource packs from Rhodes Environmental Education Unit (Q1, 3 and 7). Some subject advisors mentioned that the guidance given on how to use the learning and teaching support material effectively was given “to some extent only but not thoroughly” (Q5).

An analysis of the report by Timmermans and Gon, (2003:41) indicates that it is evident that facilitators need to be sensitive to the contextual needs of teachers when developing lesson plans using the learning and teaching support material. They (*ibid.*) indicate that it is also important to note that the “... agendas of some service providers may not necessarily suit the needs of the teachers”. This has implications for the facilitators who therefore need to support teachers to select, use, adapt and discard the materials where necessary. According to Nduna (2003:27), the NEEP – GET clusters in King William’s Town worked with (DWAF) in aligning DWAF learning support material by developing learning programme units and identifying the gaps. She further argues that the exercise gave the curriculum support staff and teachers the opportunity and skills to critically review the DWAF materials in relation to the curriculum requirements and the lesson plans that they have developed for the specific grades. The teachers were also challenged to clarify why they made certain decisions regarding the use or non-use of the materials provided and to justify why they have designed the alternative activities in certain ways. It has been reported that during the second phase of Makana cluster, the facilitators noted an improvement in the way materials were used. Timmermans and Gon, 2003:41 note that the teachers adapted the learning and teaching support materials in a number of ways, through redesigning and photocopying the materials, and through designing new activities and worksheets.

In all the lesson plans analyzed (Teacher I, A and J) it was evident that teachers were using learning and teaching support materials (see section 4.4.3.3 below).

4.4.1.5 Service provider input in the workshops

Some service providers play a significant role in the workshops for the teachers. An example of such service providers is the Wildlife and Environmental Society of Southern Africa (WESSA). The service providers who were involved in some of the NEEP – GET workshops ensured that materials were produced to enable the workshops to run efficiently. As a service provider Rhodes University had two people who worked on the programme. In other cases, service providers provided learning and teaching support material. Some of the service providers were also engaged through sharing information with the teachers and /or learners during the fieldtrips. For example in the Makana cluster, the REFYN project was involved in the cluster activities and helped the subject advisor and facilitator to arrange a fieldtrip for the teachers. Following the teacher workshop where teachers went on a fieldtrip, the REFYN project then supported the teachers to take their learners on a similar fieldtrip. The Makana Municipality's environmental health section also supported teachers with a fieldtrip to a waste dump and later supported teachers to take the learners on the same fieldtrip. Teachers similarly took the learners to Thomas Baines nature reserve, and were supported in this fieldtrip by the Museum.

4.4.2 School visits

All subject advisors and facilitators involved in this research project indicated that they visit the schools (Q1 – 8). School visits were seen as a way of checking whether the teachers are implementing the lesson plans that were developed during the workshops. As school visits have much potential for supporting teachers where they work (in classrooms) with lesson planning, I discuss these in more detail. I include a discussion on the purpose of school visits, the actions taken during school visits, as well as issues associated with school visits.

4.4.2.1 Purpose of school visits

According to one of the questionnaire respondents, the purpose of these visits is to:

Monitor and support teachers and discuss their master portfolios with them and help them refine their learning programme units (Q 8).

An interviewee indicated that, in her view, the purpose of school visits is to:

Get an individual teacher's perception of what was done in the workshop, you get insight into how the teacher has interpreted what was introduced to him or her in the workshop (Maselana, pers. comm. /08/2003)

Both responses indicate a monitoring and support function. Monitoring and support here means that "... the subject advisor / facilitator continuously visits the teachers in their schools and sits together with them and discuss the problems that they might be encountering with their work " (in this case with lesson planning) (Nduna, pers. comm./08/2003). The subject advisor / facilitator also checks the progress of the teachers to consider the coverage of work. This allows the subject advisor / facilitator to give advice on certain aspects of the work and in some cases the teachers also share their experiences and learn from each other.

4.4.2.2 Issues associated with school visits

When the teachers are going to be visited by a subject advisor or facilitator they are informed either telephonically or through their school managers and in most cases a programme for school visits is delivered to schools (Gon, pers. comm./08/2003). This is done so as to make the teachers comfortable and not to feel that the subject advisor or the facilitator is visiting the teacher for the sole purpose of inspection, but for developmental purposes (Maselana, pers. comm /08/2003). For some subject advisors these visits become successful because of the availability of transport but for others they do not work so well because of transport problems. In some of these districts there is only one means of transport, which is shared by all the personnel in those districts (I 1-4). Gon (2003:3) in reporting on the Makana cluster school visits notes that some teachers only start working on their lesson plans once they have been notified that they will be visited. When noting this slow implementation of the learning programme units it appears that many teachers need constant and continuous support in developing their lesson plans.

This could be explained by the fact that many of these teachers appear to feel that the work of NEEP – GET is an “add on” to the workload that they already have, and do not realize that the support from the NEEP – GET cluster is going to capacitate them for the revised National Curriculum Statements where environmental learning is a component of all the learning areas. This has also been reported in the pilot research of the National Environmental Education Programme (NEEP) where teachers who were involved in the programme felt that this was add on work to their existing workloads (Lotz-Sisitka and Raven, 2001:63).

4.4.2.3 Actions during school visits

During the school visits the subject advisors / facilitators report to the school managers' office that they have arrived and they indicate the purpose of their visit. The school manager then enables the teacher or teachers concerned to meet with these facilitators (Qs. 4,6). Depending on the availability of accommodation and the purpose of the visit, the subject advisors / facilitators meet with the teachers concerned in their classrooms or in the school manager's office. The subject advisors request the teachers to bring to the meeting their master portfolios as well as samples of learners' portfolios. The subject advisor then goes through the master portfolio checking it against the learners' portfolios for the quality and the amount of work done. In the master portfolio the subject advisor checks the learning programme units, which have been developed by the teacher. What is actually checked is whether these lesson plans are comprehensively designed (Q1-8). The aspects which are usually checked are whether the lesson plans have been designed to include the learning outcomes or specific outcomes, assessment standards as well as the activities which match with those assessment standards, whether resources have been indicated, whether how the achievement of the learning outcomes is going to be assessed. The subject advisor also checks whether the outcomes that are chosen actually match the activities that have been designed (I3). The criteria that are used for the assessment of the learners' work are also checked. In some cases the teachers are observed during the implementation of a particular lesson plan (Maselane, pers comm. /08/2003). Depending on the purpose of the visit the subject advisor becomes a participant observer or a completely passive observer (Nduna, pers comm. /08/2003). After the presentation of the lesson plan the subject advisor sits together with the teacher and they both reflect on what happened during the presentation and how the

teacher can improve on the involvement of learners during the lesson. Reflection is also focused on how the learning and teaching support materials were used by both the teacher as well as the learners (Q 1). As indicated above, this is a time consuming and intensive process, but has much potential for supporting ongoing action and reflection relating to lesson planning.

4.4.2.4 Impact of school visits

One of the subject advisors has indicated that now that she is involved with NEEP – GET she is well received by the teachers, unlike previously when she visited the schools in her capacity as an ordinary departmental official (Q 1). She attributes this to the fact that the teachers know in advance when the visits will take place, and they also know that the visit is not for inspection or judgmental purposes but for support purposes. She further notes that “they see the project as transparent and contributing to their professional development” (Maselana, pers. comm. 08/2003)

The teachers view the feedback that is given by the subject advisors/ facilitators as beneficial (*ibid.*). Nduna (pers comm. /08/2003) notes that many teachers claim that once you know that will be visited they work hard to prepare for the visit, and they also appreciate being able to discuss the challenges that they are encountering with somebody else (*ibid.*).

A concern has been raised that if the subject advisors do not continuously visit the teachers in their schools some of them may revert to their old ways of teaching. These school visits have also created good relationships between the subject advisors and the teachers. It has been reported by some subject advisors that the teachers feel very comfortable to invite them to their schools. (Nakani, pers comm., 2003; Maselane, pers comm., 2003).

4.4.3 Curriculum guidance

As noted above subject advisors have an important curriculum implementation function. They provide teachers with guidance on how to interpret policy. In this study it was found that providing opportunities for action and reflection, and the development of portfolios were also important dimensions of curriculum guidance. These are discussed below. To

provide deeper insight into the processes of lesson planning, a number of actual lesson plans produced by teachers (Teacher I, A and J) which were included in their portfolios and analysed as discussed in chapter 3. The analysis of these lesson plans provides useful insight into the kind of curriculum guidance that can still be given, to improve planning (see chapter 5). The lesson plans are also discussed below. One of the strategies used to provide curriculum guidance is the provision of policy interpretation materials, which is discussed below.

4.4.3.1 Policy interpretation materials

In providing curriculum guidance the subject advisors and the facilitators exposed teachers to curriculum documents. For example, they have been exposed to Curriculum 2005 policy statements as well as the Revised National Curriculum Statements. In helping teachers to interpret the environmental learning focus in the different learning areas, teachers were exposed to a workbook produced by NEEP – GET entitled “*Environmental Learning in the Foundation Phase ‘A Workbook for Educators to Support Implementation of the Revised National Curriculum Statement’*” (NEEP-GET, 2003). The contents of this book is as follows:

- Environmental learning in the Foundation phase
- Learners, learning and environment
- Know your curriculum statements
- Environmental learning in the Life Skills learning programme
- Environmental learning in the Literacy learning programme
- Environmental learning in the Numeracy learning programme
- Reviewing learning programmes and lesson plans
- Environmental learning resources for the Foundation Phase (*ibid.*).

An analysis of this book indicates that it is a resource book that is aimed at helping teachers identify environmental learning opportunities for the Foundation Phase learners. It guides teachers by giving them some possible activities that they can consider for learning processes in the Foundation Phase. It also provides the teachers with exemplars of the core outcomes for the three learning programmes and how these outcomes could be integrated with each other within each learning programme and with other outcomes from the other learning areas. This book plays a role in helping teachers

to examine each of the learning area statements and in this way teachers are able to get to know the curriculum statements in more depth. Teachers, for example, are advised to review the learning outcomes in any learning area, and then they must identify one outcome that reflects a concern for the environment (*ibid.*). To do this teachers are advised to read through the assessment standards carefully to see how the learning outcome reflects environmental knowledge, skills and values and what is expected of the learners in each Grade. This book also plays an important role in supporting broader planning in the Foundation Phase as it shows some exemplars of environment in each of the learning programmes and provides guidance on some ideas for preparing a work schedule. It also provides some examples of lesson plans and in these lesson plans the possible content and context as well as the possible focus for activities is outlined. This has been done for each grade in the Foundation Phase.

This book also provides guidance on how teachers can integrate more than two learning outcomes to expand the learning opportunities provide for the learners (*ibid.*). The booklet provides questions that serve as a guide in helping the teachers to review their learning programmes, work schedules as well as lesson plans. Coupled with these are questions to check whether the lessons allow for meaningful learning and also whether the learning programmes, work schedules and lesson plans reflect the principles of the Revised National Curriculum Statement. Lastly, it provides the teachers with resources to support environmental learning in the Foundation Phase (NEEP-GET, 2003; Nduna, pers comm., 08/2003). According to Nduna (*ibid.*) this book has been popular, and has been used by subject advisors and facilitators participating in the NEEP – GET project. This was confirmed by subject advisors who were interviewed.

In addition to this booklet a lesson plan (learning programme unit) template (based on the DoE framework for lesson planning) was designed by the Makana cluster facilitators for the Makana cluster teachers. Figure 4.1 below shows this template.

Figure 4.1: Lesson plan template

Grade		Name of LPU:		Environmental issue you will address	
Learning Area		Learning Outcome	Assessment Standard	Teaching and Assessment Activities	Resources and LSM

Duration:				
Context:				

In this template the teachers have to specify the learning area, learning outcomes and assessment standards, teaching and assessment activities as well as resources and learning and teaching support material. The teachers were advised to choose a focus area / issue that is relevant to the grade and the phase that they are teaching and to link these with the school priorities identified in their School Environmental Policies. They were then asked to develop activities and indicate how assessment is going to take place (teacher portfolios).

Very few teachers in other clusters (besides the Makana cluster) used the lesson planning template provided as a planner. Raven (2003:56), reporting on the project's implementation in the Eastern Cape, notes that teachers seemed to be struggling with the development of their lesson plans, especially when they were encouraged to include all the activities that are associated with the Active Learning Framework⁵ (*ibid.*). Gon (2003) when reporting on Makana activities, also observed that during the school visits many of the lesson planning templates were incomplete and many teachers had difficulty in filling in the lesson planning template, despite the support they had been provided in the cluster context.

Teachers are guided by the subject advisors and facilitators to focus on the chosen learning outcomes or specific outcomes and are assisted to design activities using themes with an environmental learning focus (Q1-8). They debate and agree on the skills they want to develop and they indicate how they will assess these and what resources will be used (Nduna, pers comm., 08/2003). Having planned their lessons, teachers are encouraged to try them in their schools. In the Makana cluster, teachers were encouraged to reflect on these lesson plans, and to include them, as well as evidence of their implementation in their portfolios.

⁵ This is a framework used in the NEEP – GET to encourage teachers to plan for active learning. It involves thinking about a) how to mobilize prior knowledge, b) thinking about information that is needed for teaching and learning process, c) planning investigations, d) planning action taking activities and e) thinking of ways for learners to report on what they have learned.

4.4.3.2 Action and reflection and portfolio evidence

As indicated above, teachers in the Makana cluster were encouraged to keep examples of their lesson plans in portfolios. This appeared to be an important additional support process, not provided by other subject advisor. In this cluster teachers were expected to develop portfolios that showed evidence of reflective practice and these portfolios were assessed for accreditation within the Advanced Certificate in Education (Environmental Education) (ACE-EE) offered as a two-year inset programme by Rhodes University's Department of Education. The portfolios were likely to form part of a process of recognition of prior learning for which teachers were going to get 24 credits towards the ACE which consists of 120 credits at level 6 of the National Qualifications Framework, and is also an upgrade qualification that is recognized by the Department of Education.

After discussions on the portfolios at a provincial level, the facilitator in the Makana cluster developed a structure for the development of the portfolios. Each portfolio comprised of two sections. Section one of the portfolios provided an overview of the context of learning and section two was focused on the reflections on professional development processes. The sections mentioned are made up of the following:

SECTION ONE

- photo of the teacher and biography;
- school, community, teacher and classroom profiles;
- the NEEP – GET professional development processes; and a cluster meeting reflection sheet (see section 4.4.7, figure 4.2).

SECTION TWO

This section is divided into different foci that were covered in cluster meetings and it also provides a framework for teacher reflections. The foci that were used in the first year of the programme include:

- analyzing environmental issues;
- environment in the curriculum;
- identifying local environmental issues;
- using an active environmental learning framework; and
- active learning.

Within each of these foci teachers were encouraged to consider the professional development outcomes and how each of these were achieved and included in their portfolios:

- a 'quick' reflection using the reflective clover leaf method;
- a reflection sheet with guided reflection questions;
- a section for general reflection on the particular focus;
- relevant work together tasks;
- relevant work away tasks; and
- relevant examples of learners' work (teacher portfolios).

An analysis of the three portfolios indicates that the teachers produced three lesson plans. The teachers were supported by the facilitators as well as the subject advisor in the Makana cluster in developing three lesson plans focusing on:

- Conservation issues in the Makana District;
- Health issues in the Makana District; and
- Resource use in our community.

These topics were prioritized in a cluster meeting, and were based on the issues which were isolated during the identification process undertaken in the first year programme.

Before the teachers embarked on the development of the three lesson plans they were given support through a set of work together tasks. For example, for both the first and the second lesson plans the teachers went a fieldtrip. The first fieldtrip was focused on finding indigenous medicinal plants and collecting some samples of these. Teachers were then asked to choose one plant from the collected samples and continue working with it so that they could get more information about it. They were further asked to write notes on any information they learnt about invasive alien plants in the Grahamstown area. They were also required to include some ideas for the activities that they could do with their learners. In doing this activity the teachers were provided with learning and teaching support material that served as a stimulus for finding more about these plants. It also helped to develop the teachers' conceptual knowledge of the topic to be taught in schools.

For the second lesson plan the teachers also took part in a fieldtrip where they had to make observations on the health of Grahamstown's catchment area. They specifically focused on the catchment pollution as well as water quality audit. Again they were

provided with learning and teaching support material so that they continue with their investigation. Again the support provided them with the opportunity to develop their knowledge of catchment health issues, and to try out activities that could be used with learners.

The purpose of the third lesson plan was to focus mainly on assessment. During the work together task some aspects of assessment were discussed and teachers were engaged in doing an assessment task by practising drawing up an assessment sheet using any activity from the lesson plans that they had done previously (i.e. lesson plan 1 or 2). As a work away task they were asked to develop an assessment sheet for one of the activities in their third lesson plan (Timmermans and Gon, 2003:).

4.4.3.3 Lesson plans

To gain further insight into the support provided, as well as the support needed for lesson planning, I analyzed three lesson plans produced by three teachers (Teacher I, A and J) in the Makana cluster (a total of nine lesson plans). In analyzing these lesson plans I have tried to consider some of the aspects of lesson planning that different teachers considered in compiling the lesson plans. To do this I drew on in the NEEP-GET guidelines (see Table 2.1). I also indicate in this analysis whether any form of support was provided in the cluster meeting and at school. I also included insights into the teacher reflections where relevant (all evidence is contained in the teacher portfolios).

Teacher I – Lesson plans

Lesson plan: Conservation issues in the Makana District

Learning Area : Natural Sciences

Grade : 5

Title: Aggressive Alien Plants

Environmental issue addressed: Threats Alien plants pose to indigenous plants

Aspects considered for lesson planning	How were these aspects addressed in the lesson plan.
(a) Linking outcomes with assessment standards	In the first activity the teacher chose Scientific Investigation as the learning outcome but the assessment standard that was chosen was for Grade 4 learners.
(b) Planning for assessment	The teacher instructed the learners to complete a mind map which was going to show evidence of their understanding of alien plants.
(c) Using teaching and learning support material	The teacher supplied the learners with an information sheet which they individually read and thereafter they had to

	report and discuss answers to the questions as groups.
(d) School –community links	Learners were taken on a fieldtrip where they were guided by an expert from the Museum, who is recognized for his expertise on local plants and their uses (including alien plants). They investigated the alien plants in the area and they took an action of clearing the alien plants in their school.
Support provided in the cluster.	Before the teachers developed this lesson plan they were introduced to conservation issues by the Inongwe Project. They were also engaged in a field trip where they were expected to identify and collect samples of medicinal plants and also to identify alien plants. During the process they were supported by being given some teaching and learning materials that they referred to when they engaged in the activities.
Reflection Activities	In her 'clover reflection' sheet the teacher wrote that : <ul style="list-style-type: none"> • 'I was surprised to see how keen the learners were on the field trip, also during the activities in class. Some wanted to stay the entire day!' • 'I was afraid that the big class would cause disciplinary problems during the field trip'. • 'I enjoyed designing the learning programme. I had so much information'. • I hope my next field trip will be much better than the first one'.
Reflection on professional development outcomes	The teacher reflected on these but it is not clear to me how these were achieved through the activities that she engaged in.

Teacher I: Lesson Plan 2

Lesson Plan: Health Issues in the Makana District

Learning Area: Natural Science

Grade: 5

Title: Good Sanitation for the Nation

Environmental issue addressed: Sanitation

Aspects of lesson planning considered	How were these addressed in the lesson plan
(a) Linking outcomes with assessment standards	The assessment standard matched the learning outcome and the teacher further qualified the construction of knowledge by asking the learners to identify and describe the environmental problems that were depicted in the cholera poster.
(b) Planning assessment	The assessment activities matched the assessment standards and these activities were also relevant to the context of the learners of this teacher.
(c) School-community links	Learners were helped to develop their own questions so as to interview people who are still using the bucket sanitation system.
(d) Considering the context	The teacher considered the contexts of the learners here by introducing them to different types of sanitation systems as they came from homes with different types of sanitation systems. She further asked the learners to identify the advantages and

(e) Using learning and teaching support material	disadvantages of the different types of sanitation systems. Learners were given the cholera poster and they were asked to identify and discuss the problems that were depicted in the poster. The water and sanitation handbook was also used.
Reflection activities	On the guided reflection sheet the teacher was able to indicate that her learners were very interested and keen to talk about the problems they were experiencing in their homes with the bucket system. She also said to improve her learning unit for future use there will be more activities for active learning and she will also think of an action programme to address the issue. For the 'clover reflection' sheet the teacher wrote: <ul style="list-style-type: none"> • I enjoyed presenting this learning unit. It was so relevant to our learners' environment.' • 'I was surprised to discover how strongly the learners felt against using the bucket system. They were appalled!' • 'I was afraid that they would not be able to conduct the interview with the community.' • 'I hope to address this issue further with them in the future.'
Support provided	Teachers were taken on a field trip to investigate health issues in the catchment area. The cholera poster was handed out to teachers in the cluster. The teacher found other materials on her own. Active learning approaches were shared with the teachers prior to this lesson planning.

Teacher I: Lesson plan 3

Lesson Plan: Resource use issues in our community

Learning Area: Natural Sciences

Grade: 5

Title: Electricity

Environmental issue addressed: Environmental issues associated with the production of electricity

Aspects considered for lesson planning	How were these aspects addressed in the lesson plan
(a) Linking outcomes with assessment standards	The teacher mobilized learners' prior knowledge by asking them to identify examples of how they use electricity. In their homes, in this way the learners were encouraged to construct scientific knowledge by recalling meaningful information (a natural sciences learning outcome). They also had to find information sources, and uses as well as the environmental risks that are associated with these sources. These activities directly addresses the learning outcome focused on the investigation and the associated assessment standards.
(b) Using learning and teaching support material	Learners were provided with old magazines to cut out pictures, information strips, picture of energy production and a textbook on climate change to find out the sources of electricity.
Support provided	The learning and teaching support materials were provided in the cluster. The teacher was also given support for assessment and also support for planning the activities. Teachers had previously been introduced to environmental issues and risks.

From the above it seems that Teacher I benefited from the support provided in the cluster, particularly the guided support for lesson planning (involving a focus on the links between outcomes and assessment standards) and the provision of learning and teaching support materials. Previous support activities on exploring environmental issues, considering the local context and the introduction of active learning approaches appear to have also influenced the lesson plans produced by this teacher.

Areas that appeared 'new' and caused some uncertainty included: undertaking a fieldtrip; encouraging learners to undertake community-based interviews and active learning approaches. Contextual approaches to lesson planning also seemed 'new' as the teacher indicated her surprise at how relevant the lesson (based on contextual issues) had been to learners. These all have implications for support to teachers in lesson planning (as will be discussed in chapter 5).

Teacher A's lesson plans:

Teacher A: Lesson plan 1
 Lesson plan focus: Conservation Issues in the Makana District
 Learning Area/s: Human and Social Sciences and Language, Literacy and Communication
 Grade : 5
 Title: Conservation
 Environmental issue addressed: Alien Plants

Aspects of lesson planning considered	How were these addressed in the lesson plan
(a) Linking outcomes with assessment standards	Through a mind map the teacher asked the learners to indicate the plants that are alien or foreign to Africa and the learners were able to name these. They also listed the uses as well as the dangers of these plants. Learners were also asked to indicate any cultural beliefs that they know of. These activities reflected Natural Sciences learning outcomes and assessment standards.
(b) Using different teaching methods.	In this lesson the teacher prepared her learners for the fieldtrip by (a) finding what the learners already know about the alien plants, (b) Asking them to interview their parents about indigenous as well as alien plants and come with this information and share it with others in their classroom and (c) engaging one of the parents to accompany them during the fieldtrip so that learners could be shown which plants are indigenous and which ones are alien.
(c) Ensuring meaningful integration	This was done through giving learners a passage to read and thereafter answer some questions based on the passage. They then had to construct sentences from the given words and have a discussion about alien

(d) School-community links	and indigenous plants (integrating Natural Sciences and Languages). The teacher involved an expert from the Museum and a parent from the local community.
(e) Using learning and teaching support material	In the resources and LSM column of the template the teacher has indicated the Begelly Forest and the Enviro Fact – Invader plants but it is not clear as to whether these were used.
Support provided	Teachers were taken on a fieldtrip where they learned how to distinguish between alien and indigenous plants, and they were given materials on this topic. They were also supported in how to plan fieldtrips with learners.

Teacher A: Lesson Plan 2

Lesson plan: Health Issues in the Makana District

Learning Area/s: Human and Social Sciences and Life Orientation

Grade: 5

Title: Water

Environmental issue addressed: Quality of water

Aspects of lesson planning to be considered	How were these addressed in the lesson plan
(a) Linking outcomes with assessment standards	The teacher used specific outcome 6 of HSS which reads as follows: Demonstrate an understanding of the interrelationship between society and the natural environment. She chose as her assessment criteria: Identify information from various sources and use information to propose solutions to the problem. In
(b) Using learning and support material	Textbooks, Envirokids magazine and a questionnaire were used in the activities. Envirokids was used to design activities about water use and the water cycle. From the learners' work it is also evident that some elements of the water testing kit were used such as the turbidity disk, pH sticks and worksheets on animals to be found in water.
(c) School-community links	As one of the activities learners were expected to educate the community members about better ways of using the ground water.
Support provided	Teachers were given learning and teaching support materials. They were also taken on a fieldtrip to investigate the catchment health and undertook a water audit, using a toolkit.

Teacher A: Lesson Plan 3
 Lesson Plan: Resource use issues in our community
 Learning Area/s: Mathematics and Technology
 Grade/s: 4 and 5
 Title: Water
 Environmental issue addressed: Uses of water – audit

Aspects of lesson planning considered	How were these addressed in the lesson
<p>(a) Linking outcomes with assessment standards</p> <p>(b) Interpreting the curriculum principles</p> <p>(c) Ensuring meaningful integration</p>	<p>Some "content" guidance has been provided through the linkage. The learners have been asked to use a table to list the domestic uses of water over a period of five days although this is not clear in the teacher's instructions. They were then asked to add up the amounts used and represent these in the form of a pie graph. They were then asked to indicate which domestic activity uses most water and which one uses the least water.</p> <p>Identifying areas and methods of saving water draws attention to key social priorities in re-orienting the South African society towards a more socially just and environmentally sustainable future for all.</p> <p>As a follow up on the activities which were done for Mathematics, learner were required to design a device that will be used to water trees and plants as the watering of these seemed problematic. The teaching activities for the technology learning outcome and assessment standards will help the learners to situate "classroom learning" to real-life experiences..</p>
Reflection activities	<p>For this learning unit, the teacher did not reflect on both the professional development outcomes and the guided reflections. The teacher reflected on the clover as follows:</p> <ul style="list-style-type: none"> • 'I was impressed at the way the pupils design and create their designs as I can't draw.' • 'I was very glad at the way the pupils came up with ways of saving water.' • 'I wish that the pupils could educate their peers and parents on how to save water.' • 'I enjoyed the way the pupils tabulated the way they use water'.
Support provided	Content guidance was provided. Teachers were supported to use the active learning framework.

From the analysis of the three lesson plans given above, it seems that in particular the fieldtrip support appears to have influenced lesson planning. Teachers were 'replicating' their own fieldtrip, with their groups of learners. Again the provision of learning and teaching support materials appears to have influenced the development of lesson plans. Teachers also drew on expertise in the local community to assist with the lesson plans and the teaching of the lessons.

Teacher J's lessons:

Teacher J: Lesson Plan 1
 Lesson Plan: Conservation Issues in the Makana District
 Learning Area: Mathematics
 Grade: 1
 Title: Alien Plants
 Environmental issue addressed: Identification of alien plants

Aspects of lesson planning considered	How were these addressed in the lesson plan
(a) Linking outcomes to assessment standards	The first activity was introduced by having a discussion with the learners about where alien plants are found, what problem they pose and how they can get rid of them. The learners were then engaged in pick p trees for investigation in their school yard. Learners also had to get samples from their homes where they were expected to ask their parents questions about the trees that are found in their homes. Learners were also requested to sort and paste the alien twigs in worksheets and name them. They were also asked about the shapes of the different leaves they collected. These activities linked well to Mathematics learning outcomes.
(b) School-community links	This was done by involving an expert from Albany Museum and learners' parents. Learners had to ask both parties which trees are indigenous and which ones are alien and what are they used for.
(c) Using learning and teaching support material	The teacher produced simple and effective worksheets for learners to practise their counting skills. She also mounted samples of alien plants from the school grounds on the card and these were identified by the learners.
Support from the cluster	The facilitator commented on why this teacher chose to draw the plants on worksheets instead of giving the learners the real specimens so that they count from them.
Reflection on activities	On the reflection clover the teacher indicated that: <ul style="list-style-type: none"> • 'I was afraid that I may not come to the point through to the level of children, I work with.' • 'It was a little bit difficult to find the relevant activities.'

Teacher J: Lesson Plan 2
 Lesson Plan: Health Issues in the Makana District
 Learning Area: Life Orientation and Mathematics
 Grade: 1
 Title: Water Audit
 Environmental issue addressed: Water Quality

Aspects of lesson planning considered	How were these addressed in the lesson plan
(a) Using different teaching methods	Since the learners were taken to a river to conduct a survey, finding out which animals are found in that river gave them a range of different opportunities for learning about the topic.
(b) Using learning and teaching support material	The teacher provided learners with Ph paper to check the acidity and the alkalinity of the water. They also

	used methylene blue to check whether there were any diseases that were associated with water.
(c) Considering context	The context of the learners was considered in that the investigations were done in a nearby river.

Teacher J: Lesson Plan 3
Lesson Plan: Resource use issues in our community
Learning Area: Life Orientation
Grade:
Title: Water and Hygiene
Environmental issue addressed: Sanitation and personal hygiene

Aspects of lesson planning considered	How were these aspects addressed in the lesson
(a) Using learning and teaching support material	Learners were provided with a cholera poster and they had to go through the questions on the poster. They were then asked to put a cross over each situation that is causing people to get sick. They were also asked to draw some things that will improve the picture.
(b) Considering the context	Since the toilets of these learners did not have any taps next to them, the learners were asked to make taps using bottles and nails (available material) in their context.
(c) Interpreting the curriculum principles	Through this lesson the learners were able to explore the issues that are problematic and they were also able to explore the solution to the problem.
Support provided	Learning and teaching support materials were provided, and teachers were given support for lesson planning as indicated in the other lesson plans above.

From an analysis of Teacher J's lesson plans, it seems that again provision of teaching and learning support materials was an important source of support process. Similar to the other teachers, the fieldtrips seem to have influenced lesson planning, as has the active learning framework and discussions on contextual factors affecting learners and learning. Teacher J's reflections indicate that she appeared to need support for development activities and also for ensuring that activities were relevant at a particular level. However, she seems to have selected appropriate activities relevant to the level of the learners.

All teachers appear to have developed lesson plans that are contextually relevant. They also appear to have used the materials they were introduced to in the cluster meetings (e.g. the water testing kits). This seems to reflect that resource-based learning approaches to professional development and an emphasis on context are two important support processes that were provided in the Makana cluster, to guide lesson planning.

Several reflections were done by the teachers as they were busy with their lesson plans. Some reflections include *'I struggled in doing reflection and on reflection on professional development'* ; *'I enjoyed working with alien and indigenous plants at first I had not known the difference. Now I'll be observant whenever I come across a tree'*; *I hope that this does not stop as more parents were enthusiastic about planting trees'*; to mention just a few. These indicate that teachers appreciated the support provided, but that they are struggling to get to grips with lesson planning. In particular, reflections on their own professional development (and related outcomes) appears to have been difficult showing that they are by and large unfamiliar with meta reflections. These reflections also provide insight into the potential of strengthening school-community relationships. This was evident in all of the lesson plans above. As indicated earlier, teachers were also provided with assessment guidance. Assessment plays a central role in fostering learning processes, and is a central feature of OBE curriculum. As outlined in the programme of this cluster (above), assessment only became a focus towards the end of the cluster programme (lesson 3), indicating that this area of support may need further examination for its potential. Further insight into assessment guidance provided to teachers is incorporated below

4.4.4 Assessment guidance

All the subject advisors responses emphasized the importance of providing assessment guidance (Q1-8). For example, one subject advisor noted that the teachers were exposed by means of workshops to different types of assessment. "I always advise them to link assessment with assessment standards. If the assessment standard requires the learners to conduct an audit, the teacher should assess if the learners can conduct an audit" (Q1). Another subject advisor reflects:

If, for example, the learning unit that is being developed is from the Natural Sciences learning area, the teachers are advised to look for an outcome that has some focus on environmental learning. For example, if they choose learning outcome number 3 which is about Science, Society and Environment, they will then take an assessment standard which reads as follows for grade 8 learners: We know this when the learner 'Understands sustainable use of the earth's resources: Identifies information required to make a judgement about resource use'. The teacher would then be advised to design activities that, for example, include:

- Planning of an audit of all uses of water around the school premises.

- Carrying out an audit of all uses of water around the school (including gardening, car-washing and drinking)
- Developing an implementation plan to improve water management in the school.

The teachers are then advised to develop assessment tools that they will use in order to assess the learners when they are engaged in the activities mentioned (Maselana, pers.comm. 08/2003).

According to data produced teachers are supported to undertake assessment “by building tools of assessment for language like, for example, designing rubrics for self, peer and group assessment” (Q3). Focus is placed on the criteria that are to be assessed and whether the outcomes have been achieved (Q3 – 8). Assessment is integrated in lesson plan design and teachers have to explain the assessment strategies and tools for each activity. It has also been mentioned that teachers (Maselana, pers comm.,08/2003)are required to examine assessment standards within learning outcomes that have an environmental focus and are encouraged to design activities that will help learners to achieve particular outcomes with depth and scope required by the assessment standards.

In the Makana cluster the teachers were introduced to assessment by doing a work together and work away task which focused on the NEEP – GET Professional Development Outcome: “Select and apply relevant methods and assessment processes and reflect on their appropriateness for environmental learning”. The teachers were referred to the scope and depth dimensions for this professional development outcome which is included in the list of these professional development outcomes (Appendix E). They were guided to see that the focus will be on reporting on assessment criteria or standards, within the context of assessment of environmental learning processes. Aspects of assessment were discussed during the cluster meeting and teachers also engaged in an assessment task that was going to give them practice, drawing up an assessment sheet using an activity from their previous learning programme units. As a work away task teachers were required to develop an assessment sheet either using or modifying or redesigning the sheet that they were provided with to suit their purpose for one activity in their third learning programme unit. An example of the assessment activity which was produced during the work together session is shown below (see table 4.2).

This workshop on assessment led to an improvement in the way teachers approached assessment when they first designed their lesson plans. The portfolios show a marked improvement in the specificity of assessment activities from lesson plans 1 to 2, and then in lesson plan 3, where they were to focus on assessment (teachers' portfolios). In teacher I's first lesson plan, she indicated that she would be using educator group assessment, whereas in the third lesson plan (as shown below in figure 4.2) the teacher was able to identify what evidence she would be looking for and how this related to the activity and the learning outcome. She was also able to describe what she expected from the learners, and she also had a 'rubric' which helped to do a qualitative assessment of learner achievement. Providing more in-depth support for assessment therefore appears to be needed if good quality assessment planning (which is central to lesson planning) is to be achieved.

Figure 4. 2: Work Together Task – Assessing an Activity

Grade 5 Learning Area: Natural Science
Name of Learning Unit: Sanitation

Learning Activity: 3		What we want to assess and how we collect evidence of learning:
Enquiry The learners in pairs or individually conduct an interview in the community with people who are still using the bucket system		<ol style="list-style-type: none"> 1. The learners' ability to draw up their own questions. 2. Their ability to record the relevant information 3. Their ability to report the information. Learning Outcome: 1 Scientific Investigation
Code	Comment	What we expect from the learners – Assessment Standard
1	Could not complete the questionnaire	<ol style="list-style-type: none"> 1. They should be able to come up with relevant questions. 2. They should be able to record relevant information. 3. They should be able to report in such a way that the other learners understand the information.
2	Learners only accepted yes/no answers	
3	Learners were able to draw up own questions and record information.	
4	Excellent choice of questions. Were able to record accurately the disadvantages.	

4.4.5 Assistance to understand environmental issues

In order to assist teachers to understand environmental issues field trips were organized in the Makana cluster. One such fieldtrip was organized with a service provider where teachers were to look at indigenous plants. During this fieldtrip the teachers were asked to collect plants and press them into books. The field trip drew on the teachers' prior knowledge and stimulated much enthusiasm, activity and debate (Raven 2003). Apparently there were several plants, which were known as '*Inongwe*', and this led to several spirited discussions as to which were the 'real' ones. Teachers were then asked to feed the outputs from this field visit into the learning programme unit that they were developing. Since the teachers were introduced to fieldtrips some of them also decided to organize fieldtrips for their learners (*ibid.* and see lesson plans above). It was noted that one teacher discussed what she would like to be done during the fieldtrip. In the process the worksheets for the learners were developed and these provided a strong focus for the visit. An example of the worksheet that was used by this teacher is shown in Figure 4.3 below.

Figure 4.3 : Example of worksheet given to learners

Gr. 5C	Field Trip	8 May 2003
<u>Identifying alien plants</u>		
<u>Activity 1:</u> Our guide will take us through the area. Listen to the information. Make sure that you observe as much as possible.		
1 Do you see many indigenous plants in the area? (If not, give a reason)		
2 Do you see any water / moisture in the area? (If not, give a reason)		
3 The guide told you some interesting facts about roots and leaves. Try and explain it.		
<u>GROUP ACTIVITY:</u> Each group has to investigate <u>one</u> alien plant.		
1. What is the name of the plant?		
2. Describe the size.		
3. Do you see any flowers?		
4. What would you use this plant for if you chop it down?		
5. Pick a leaf and draw it in this space. (Keep the leaf)		
6. If possible, make a drawing of the root system.		

(Source: Teacher I's portfolio)

According to the worksheet that was drawn up by this teacher the main purpose of the fieldtrip was to identify alien plants. She informed the learners through the worksheet

that they will be taken through the area by a guide and also asked them to listen to the information that would be shared by the guide. Learners were also instructed to observe as much as they could. This assisted the learners in their investigations.

The first question on the worksheet asks whether the learners have seen many indigenous plants in the area. This indicates that the teacher is trying to find out what the learners already know (according to the Active Learning Framework (see Section 4.4.6) the teacher is trying to mobilize the learners' prior knowledge). The second question asks the learners to indicate whether they see any water or moisture in the area. The group activity required the learners to investigate one alien plant. They were expected to give the name of the plant. This indicated that the teacher was attending to another aspect of the Active Learning Framework where learners had to find information from the learning support material with which they were provided by their teacher. The teacher also asks the learners to draw the root system of this plant. Through the various activities the learners were required to think about and understand the impact of alien plants and consider the benefits and problems of alien plants.

The other teachers from other schools arranged the field visit with another service provider, but did not discuss their requirements beforehand, and although they required information on alien plants, the service provider had little and sometimes questionable information on these and focused instead on indigenous plants (Raven, 2003). Even here the service provider provided some erroneous information, identifying two indigenous plants as aliens. These fieldtrips therefore lost focus and the teachers 'handed over' their learners completely to the service provider (Raven, 2003). It was therefore noted that for any fieldtrip to be a success teachers should be advised to discuss it with the service provider beforehand so that there "... could be a clear focus on what is to be done and this in turn will be of benefit both to the teacher and the learners" (Gon, pers.comm., 08/2003)

Some subject advisors indicated that they had a problem in assisting teachers to understand environmental issues as they themselves do not have an understanding of the concept of environment and as a result they failed to understand the environmental focus within the learning outcomes or the specific outcomes (Q3, 4, 5 and 6). Mphaphuli, et al. (2003:7) concur with the statement above when they say:

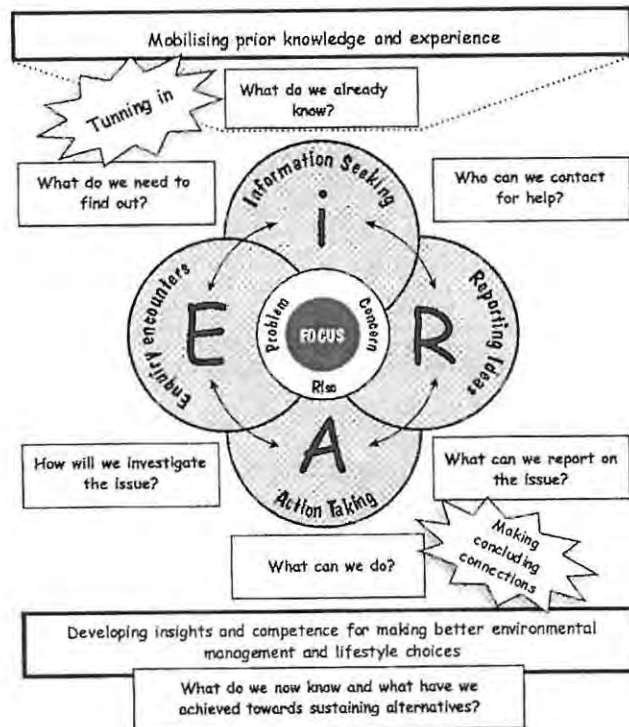
Apart from a very few individuals who claimed quite considerable experience of environmental learning in different contexts, the great majority of Curriculum Staff appear to have had little or no such experience. For most their first such experience has in fact been with the NEEP – GET project. A few have been involved with aspects of environmental learning within their subject areas in the old curriculum. These included some aspects of active ecology work within the area of Environmental Studies and foundation phase ecology.

The above information is also supported by a subject advisor (Maselana, pers.comm., 08/2003) who expressed a concern that many subject advisors do not have an understanding of or focus on the concept environment, as a result they sometimes fail to understand what is an environmental focus within the learning outcomes. This participant feels strongly that there has to be a stronger intervention made within the National Environmental Education Programme (*ibid.*).

4.4.6 Pedagogical support

The teachers were introduced to the Active Learning Framework (ALF), resource-based learning and issues-based learning (Nduna pers.comm. 08/2003). The ALF has been introduced through the booklet developed by O'Donoghue (2001) for the NEEP – GET. Teachers have been supplied with a copy of this book. Many teachers, according to the Formative Monitoring and Evaluation report (Raven 2003:57) still have difficulty in both understanding the implications and full potential of the framework, and working with it in any depth. "The focus of most learning programmes developed using the framework has been on action, and there was little evidence of analysis of issues, or justification of particular actions" (*ibid.*).

Figure 4.4 The Active Learning Framework (O'Donoghue, 2001)



To provide further insight into the pedagogical support provided to teachers in lesson planning, I will discuss how the Active Learning Framework (ALF) was used in the development of lesson plans by three teachers from the Makana cluster. The first step in the ALF is mobilization of prior knowledge. When analyzing the three lesson plans developed by each of the Teachers A, I and J, it is clear in Lesson Plan 1 that teachers A and I used the mind maps in mobilizing the learners' prior knowledge. When we look at information and local enquiry, Teacher I gave learners an information sheet to read. This was followed by a fieldtrip where the learners were guided by an expert. They listened to what the expert was saying, took some notes, collected some samples and followed the instructions on the activity sheet provided. Teachers A and J involved the expert from the Albany Museum as well as the parents. Teacher J also engaged in a fieldtrip whereas Teacher A did this local enquiry in the school grounds where the learners had to identify alien plants.

In as far as the action component of the ALF is concerned Teacher I's learners were going to take action through clearing the alien plants. For teachers A and J it is not clear in this lesson plan what the learners were going to do. Although this might be the case there was still some improvement in lesson plan 3, for example, Teacher J's learners constructed taps out of plastic bottles and Teacher A's learners calculated how much water was used for different purposes and they had to discuss different ways of saving water. This was done for the Mathematics learning area. For the Technology learning area, they designed and constructed a device for watering their trees as a water saving technique.

There seems to be confusion between the notions of 'actions' and 'activities'. In order to address some of these concerns the facilitators organized more workshops to encourage the teachers to have a better understanding of the need for the environmental education processes to deal with and encourage change in the local contexts through responsive and collaborative initiatives. According to Raven 2003:57 this would enable them to better understand the need for:

- Informed decision-making in bringing about change (this motivates for the information dimension of the active learning framework)
- Research into the status of particular environmental issues in local contexts (which motivates for the dimension of local enquiry in the active learning framework)
- Actually responding to identified issues (which motivates the action component of the active learning framework)
- Reflection on the successes and challenges of their activities (which motivates for the reporting component of the active learning framework).

The aspect of providing pedagogical guidance and support to teachers appears to be a vital element of lesson planning, as shown in the lesson plans and portfolio evidence of these three teachers. Providing scaffolding for this pedagogical support (for example, through the using the active learning framework) appears to be a useful strategy for this dimension of lesson planning. While all subject advisors were introduced to different pedagogical approaches, there was little evidence in the questionnaire data or the interviews that this had been a key focus of teacher support in other clusters. As I did not study the outputs of the teachers in these clusters in the same level of detail I was unable to ascertain whether the subject advisors had provided pedagogical support, or what the nature of this pedagogical support had been.

4.4.7 Professional development

Professional development in the Eastern Cape NEEP – GET is driven by a spiral curriculum model with work together and work away tasks, and discussions and reflections during the workshops (see chapter 1.). In the Makana Cluster teachers were introduced to the NEEP – GET professional development outcomes and these were pasted in the teachers' portfolios for regular reference (Raven 2003; teacher portfolios).

The professional development process was started by giving teachers files in which they were asked to keep everything that they were given in the workshops, that is, their work together tasks, work away tasks and examples of learners' work. This created some problems for the teachers because they were not clear on how to structure their portfolios for assessment purposes (Timmermans and Gon, 2003). The file became too big, unstructured and meaningless for review purposes and hence it was decided that the teachers should produce portfolios for a more structured and focused reflection. They were then encouraged to produce portfolios that showed evidence of three important aspects of reflexive practice and these are: selection of appropriate materials for a portfolio; reflection on these materials and improvement on practice (*ibid.*). The teachers were expected to reflect on their professional development. For reflection on their professional development, teachers used a number of strategies and these are explained below. They reflected on professional development as directed by the professional development outcomes that have been designed by NEEP – GET (Appendix E). A 'reflection clover' (Appendix F) was also used where the teachers had to take a few minutes to think quickly about their successes, hopes, fears, difficulties, challenges (Timmermans and Gon, 2003:35). This is an example of what was written by Teacher J for the Lesson Plan 3:

"I struggled in doing reflections and on reflecting on professional development outcomes"; "I wonder if all the learners can keep all the health rules to avoid unsafe health"; "I was pleased to see the founder of the NEEP-GET. I thought she was going to tell us the more good news about the project"; "I am glad that we have come to the end without dropping during the course of the year".

This reflection is done in the workshops and it helps to focus feedback sessions. It was noted by Makana cluster facilitators that focusing the feedback was important, otherwise the teachers tended to take up a lot of the workshop time in giving a detailed description of what they had done (Gon, per comm.,2003; Timmermans & Gon, 2003). The teachers

were also exposed to a guided reflection sheet where they were guided with specific questions about their work together tasks, work away tasks and learners' work. Figure 4.4 below shows an example of a guided reflection sheet.

Figure 4.5 Guided reflection sheet

<p>LEARNING PROGRAMME 3: RESOURCE USE ISSUES IN OUR COMMUNITY (Please paste in a copy of your Learning Unit template. Pg. No. ____)</p>	
1.	What environmental issue/focus did you have for your Learning Unit?
2.	For what learning area was your Learning Unit developed?
3.	What learning outcome/s were addressed (use C2005 or the revised national curriculum statements here)?
4.	What environmental assessment standards did you use to assess whether these outcome/s had been achieved?
5.	How did you assess whether these were met (include examples of assessment strategies/plans: Pg. No. _____)?
6.	Did the learners meet the requirements for the assessment standards and how (include 2 examples of learner's work to show evidence: Pg. No.____)?
7.	What active learning processes were your learners involved in? <ul style="list-style-type: none"> • How did you mobilize prior knowledge about environmental issue/focus (if appropriate insert worksheets or evidence of learners' work: Pg. No.____)? • What information (LSMs, textbooks, posters, other service provider materials) did the learners use (insert examples: Pg. No. _____)? • What local enquiries did the learners undertake in their community (if appropriate insert worksheets or evidence of learners' work: Pg. No.____)? • How did the learners respond to environmental issues (through action projects) (if appropriate insert worksheets or evidence of learners' work: Pg. No.____)? • How did the learners report on what they did/achieved (if appropriate insert evidence of worksheets or learners' work: Pg. No. _____)?
8.	What element/s of the Schools and Sustainability Pack does your Learning Unit link to?
9.	Describe the relevant aspects of your policy statement for this/these element/s.
10.	Describe the relevant action plans for this/these element/s.
11.	Was the Learning Unit relevant to your school/community? If so, how?
12.	Describe the strengths of your Learning Unit?
13.	Describe any weaknesses of your Learning Unit.
14.	How would you improve your Learning Unit for future use?

When I analyzed the reflections of the teachers in their portfolios I noted that some teachers were still struggling to reflect on how they have developed using the prescribed NEEP – GET professional development outcomes. However there is also evidence that teachers have gained confidence in developing lesson plans when they are being supported continuously. For example, through the reflection clover Teacher I said “I enjoyed designing the learning programme. I had so much information.” Without them

being given support through work together tasks this teacher would not be claiming that she has so much information.

When the portfolios of the teachers were assessed after the first phase of the project by the facilitators, it was noted by the facilitators that most of the teachers misunderstood the purpose of the NEEP – GET outcomes and that they were reflecting “more on how the learners achieved the outcomes rather than on how they as teachers had achieved them”. It was also noted that teachers tended to misinterpret the outcomes such that it was difficult to assess their professional growth on reading the reflections (Timmermans and Gon, 2003:35). The facilitator felt that this was due to the fact that teachers were asked to choose aspects of the scope and depth of the particular outcomes on which to reflect and this resulted in the scope and depth aspect of the outcome often being seen in isolation from the main outcome (*ibid.*). These experiences led the facilitator to make the following recommendations regarding the way in which the outcomes should be approached and used:

- Be more selective and choose one or two outcomes on which to reflect for each session.
- Reflect each time on the actual outcome and use the scope and depth aspects of outcomes in which to guide teachers on their reflections.
- Spend more time in ‘unpacking’ the meaning of the selected outcomes.
- Emphasise the purpose of the outcomes as a mechanism for reflection on personal professional development.

This, as mentioned above, also points to a lack of familiarity with the met-reflection processes (reflecting on own professional development). Professional development has also been shown through the reflections, which were done by teachers in the workshops and in the individual school reports. In the reflection meetings the teachers shared their portfolios and the lesson plans that have been developed. Teachers were encouraged to reflect on their work and they shared their successes and challenges and the discussions after the reflections helped the teachers to rework and refine their lesson plans. The teachers showed confidence in the presentation of work done and in sharing their experiences during the process of implementation (observations). This points to the potential of encouraging reflection processes in professional development, and such reflection is identified as another important support strategy provided by subject advisors and facilitators.

4.4 CONCLUSION

In this chapter I have presented the findings on the strategies which are used by subject advisors/facilitators in helping teachers develop lesson plans with an environmental learning focus.

From analyzing the questionnaires, interview transcripts as well as documents it was clear that a lot of strategies are employed by the subject advisors/facilitators. The strategies that were mentioned are workshops, school visits, curriculum guidance, assessment guidance, assistance to understand environmental issues, pedagogical support and professional development. Although most of the subject advisors I interacted with mentioned these strategies I was able to get more detailed information from the Makana cluster and therefore a more detailed insight into the support processes. It should also be noted that not all the NEEP – GET clusters provided such in-depth consistent support to the teachers as the subject advisors are not in a position to support the teachers in the same way as the Higher Education Institutions (HEIs) and Non-Governmental Organisations (NGOs) are, due to a number of reasons some of them stated in this study. Though this is the case, the support partnerships between the subject advisor in the Makana District Office and the HEI/NGOs enabled this support to take place.

In chapter 5 I will be discussing these strategies and other issues in more depth. To do this I engaged in a process of further second analyzing the data using the NEEP – GET framework for lesson planning (as described in Table 2.1). The discussions will dwell on lesson planning processes as well as the professional development of the subject advisors and facilitators.

CHAPTER 5

LESSON PLANNING: IMPLICATIONS FOR SUBJECT ADVISOR SUPPORT TO TEACHERS

5.1 INTRODUCTION

This chapter provides a more detailed analysis of the findings that emerged during the research process. The findings are discussed by drawing on some of the insights gained from the literature reviewed in chapter 2 and the data analyzed in chapter 4. The findings consider the support strategies used by subject advisors in more depth, particularly as these relate to lesson planning processes, as identified in this study, and in relation to other issues associated with school-based curriculum development work, as identified in chapter 2.

Key challenges for subject advisors /facilitators' supporting teachers to develop lesson plans are highlighted under a discussion in section 5.2 on curriculum, pedagogical and assessment guidance. These were identified as key strategies used by subject advisors to support lesson planning in chapter 4 (see sections 4.4.3, 4.4.6, 4.4.4). This is done through a consideration of the NEEP – GET lesson planning framework (see table 2.1). Issues for further consideration are identified, particularly the implications for support provision by subject advisors. These issues became visible through an analysis of teacher developed lesson plans in the Makana cluster of the NEEP – GET (see section 4.4.3.2).

Other strategies identified by subject advisors in chapter 4 such as workshops (see section 4.4.1), school visits (see section 4.4.2), assistance to understand environmental issues (see section 4.4.5) are then considered critically. In reviewing these support strategies critically, I will consider whether the strategies, as expressed by subject advisors in chapter 4, are adequate for responding to the curriculum, and pedagogical and assessment needs as identified in section 5.2 below.

Finally, in section 5.3 I discuss the need for professional development for subject advisors so that the strategies that they are currently using can be enhanced to enable better and more adequate strategies to support lesson planning, and teacher

competence for school-based learning programme development (lesson planning) as identified in chapter 2 (see section 2. 6).

5.2 CURRICULUM, PEDAGOGICAL AND ASSESSMENT GUIDANCE

From the literature that I reviewed it was strongly evident that there are problems that are associated with policy implementation in schools (see section 2.7). The NEEP – GET responded to this issue by coming up with guidelines for school-based lesson plan development processes. When analyzing the curriculum, and pedagogical and assessment guidance needed for the development of lesson planning, I consider the support that was given to teachers when developing lesson plans in more depth, as outlined in chapter 4. To get a more in-depth view of what curriculum and assessment guidance is needed, I will look at whether the aspects that have been recommended for lesson planning by the NEEP – GET (see table 2.1) have been considered in the lesson plans of teachers A, I and J (see section 4.4.3.2), and what the implications of these are for the support provided by subject advisors. These aspects include:

Interpreting the curriculum framework

- Links between outcomes and assessment standards;
- Interpreting the environmental focus in the learning area;
- Interpreting the curriculum principles;
- Planning for assessment;
- Ensuring meaningful integration;

Considering learning (pedagogical support)

- Thinking about learning;
- Considering the context;
- Mobilising indigenous knowledge;
- Using different teaching methods;
- Using learning and teaching support material;

Contributing to school improvements and school-community links

- School improvement ; and
- School community links.

(NEEP-GET, 2004:1)

Each of these are discussed below:

5.2.1 Interpreting the curriculum framework

5.2.1.1 Links between the outcomes and the assessment standards

From the findings it is evident that teachers were guided by subject advisors/facilitators to examine the outcomes and assessment standards of the learning area for the particular grade for which they are preparing the lesson (see section 4.4.3.1). For example, they were advised to carefully read through the assessment standards to see how the learning outcome/s reflect/s the environmental knowledge, skills and values and what is expected of the learners in each grade.

On analyzing the three lesson plans that were developed by Teachers A, I and J, I noted that the teachers tried to link the outcomes to the assessment standards. If, for example, we look at Lesson Plan 2 of Teacher I the Learning Area for which she prepared the lesson, was Natural Sciences. For this lesson where the environmental learning focus was sanitation she chose for activities 1 and 3 learning outcomes 2 and 1 respectively. Learning outcome 2 is about constructing scientific knowledge, and the assessment standard was recalling meaningful information. She gave the learners the "Cholera Poster" and she asked them to identify and describe the environmental problems that were depicted in the poster. She also assessed them on what they know about a healthy environment, focusing on sanitation. If we look at learning outcome 1 on Scientific Investigations in activity 3, the teacher asked the learners to conduct interviews with people who are still using the bucket system. The focus of these interviews was on the disadvantages of the bucket system.

For Teacher A, I will look at how the outcomes were linked with the assessment standards in Lesson Plan 3. The lesson was prepared for Mathematics and she chose learning outcome 5 on data handling. The assessment standard chosen for this outcome was "organize and record data using tallies and tables". Through this linkage there has been some guidance on mathematical content. In the activity learners were asked to use a table to list the domestic use of water and they were then asked to add up the amounts used per activity and represent this in the form of a pie graph. They were also asked to indicate which activity uses most water and which one uses least water. This in the end

was going to help learners to be able to represent information in the form of tables as well as in the form of graphs.

Teacher J's Lesson Plan 1 was prepared for the grade 1 learners. The environmental issue addressed in this lesson is the identification of alien plants. This is a Mathematics lesson plan focusing on learning outcome 5 – data handling. For activities 1 and 2 of this lesson plan the teacher chose assessment standards for grade 2 even though the lesson was meant for grade ones. For activity 3 and 4 learning outcome 2 was chosen and one of the assessment standards was for grade 2 learners.

If we look at the three examples cited above, we have noticed that two teachers (A and I) grasped the phenomenon of linking the outcomes with the assessment standards for the grade. For the other teacher there is a problem. Although the assessment standards tally with the learning outcomes, they are not for grade 1 but for grade 2.

This has the following implication for support processes provided by subject advisors:

- Ensuring that the support provided for linking outcomes and assessment standards is specific, so that teachers don't, for example, use the wrong assessment standards from the wrong grades when linking them to outcomes. This indicates that detailed attention should be given to this dimension of lesson planning.

5.2.1.2 Interpreting environmental learning in the learning area

In helping teachers to interpret environmental learning in their respective learning areas, teachers in the Makana cluster were given an activity where they were guided to explore environmental learning and environmental improvement (Timmermans and Gon, 2003:12). They were grouped according to their learning areas. What came out of this activity was that the language group for example identified the role that can be played by languages, e.g. reading, interpreting and reporting about environmental issues. The other teachers listed the skills developed by their learning areas but did not say how these contribute to environmental learning or improvement.

The other subject advisors involved in this study indicated that since they lack environmental knowledge it becomes difficult for them to assist teachers to interpret environmental learning in their learning areas (see section 4.4.5).

From the analysis of the three portfolios it is evident that the teachers succeeded in analyzing environmental learning associated with their learning areas, as is depicted through the environmental issues that were addressed per lesson plan (see section 4.4.3.2). However, although this is the case the teachers failed to clarify the environmental focus at the beginning of the lesson plan. What is evident in these lesson plans is that the teachers focused more on teaching about the issue rather than helping learners to develop skills of identifying and analyzing both general and local environmental issues, risks and concerns so that they can make a valuable contribution towards sustainable living and also show respect for the environment.

In all of the above, there was little use of documents to help them interpret the environmental focus in the learning areas. For example, the curriculum statement for the Natural Sciences could have been used, and teachers could have been asked to identify how the environment was being addressed in this curriculum statement. The Natural Sciences curriculum statement has a focus on biodiversity and life support systems, as indicated in the learning outcome on science, society and environment (learning outcome 3). An example of an assessment standard here is "Understand the impact of science and technology on the environment and peoples' lives: Identify the negative and positive effects of scientific developments or technological products on the quality of people's lives and / or the environment (Grade 5)" (DoE, Natural Sciences, 2002: 41). This provides guidance, in that teachers and learners need to understand the impact of scientific developments or technological products on the environment. For example they could explore the science and technology of coal-based energy production, which causes air pollution.

These findings have the following implications for support processes provided by the subject advisors:

- An understanding of the meaning of environmental issues, risks and concerns which will result in contribution towards the achievement of the learning outcomes in a learning area. This understanding should be based on the

outcomes and assessment standards of the different learning areas, which will help educators to interpret the environmental focus in the learning areas. The NEEP – GET publication on lesson planning (NEEP – GET, 2004) provides some guidance in this respect, as it provides a summary of how environment is represented in each of the learning areas.

- Future support programmes need to focus on developing the teachers' skills so that they are able to identify and analyze both the general and local environmental issues, risks and concerns in more depth, as these relate to the learning area outcomes and assessment standards. For example, grade 3 learners are expected to participate in a recycling project and to explain how recycling contributes to environmental health in the Life Orientation learning area (assessment standard 2, learning outcome 1) (DoE, Life Orientation, 2002c:17). This means that teachers will need to understand issues associated with waste management and recycling approaches. They should also have an understanding of recycling and environmental health. This example shows how the curriculum statements provide guidance on how to approach the professional development of teachers for environmental learning.

5.2.1.3 Interpreting curriculum principles

In order to enhance the teachers' understanding of the curriculum principles, teachers in the Makana cluster were taken through one of the curriculum principles in a workshop situation. In this workshop the teachers were required to work in groups and consider what the principle of social justice, a healthy environment human rights and inclusivity means. This was done through giving them an article to read and from this article they had to identify those parts of the article which belong to each of the aspects of the principle (source: teachers portfolios). They were also asked to draw a mind map of an environmental issue and look at it in terms of this principle.

The aspect of interpreting curriculum principles has to a lesser extent been addressed in the lesson plans that have been developed by the three teachers. For example, their lessons were planned such that the four principles were covered although not in great depth.

An analysis of the other subject advisor interviews indicates that they are not focusing on this aspect of lesson planning with teachers at present (see chapter 4). According to NEEP – GET (2004:41):

South Africa has a history that is marked by human rights abuses, social injustices, exclusions and environmental degradation and risk. This environmental degradation and risk often affects those that are formerly disadvantaged, or those that are most at risk. Through integrating the curriculum principles in lesson planning ... learners can explore the issues, but they can also explore solutions. Integrating the curriculum principles into lesson planning draws attention to key social priorities in re-orienting South African society towards a more socially just and environmentally sustainable future for all.

This indicates that this is an important, yet seemingly neglected, dimension of lesson planning. In the RNCS training process, this principle is also emphasized (DoE, 2004). This has the following implications for the support processes provided by the subject advisors:

- Organizing structured workshops where the principles will be dealt with in more detail such that one can actually see that these have been interpreted in the lesson plans that are developed.
- Working with teachers to identify the links between environmental problems, social justice issues and human rights, so that learners in schools can investigate these problems, and also find solutions, as suggested by NEEP – GET above.

5.2.1.4 Planning for assessment

According to the responses of the subject advisors and facilitators, teachers are always advised to link assessment with assessment standards (see section 4.4.4). In the Makana cluster a special workshop on assessment was arranged for the teachers. In this workshop a presentation on assessment was done and thereafter the teachers filled in an assessment rubric using one of their activities from their previous lesson plans and they reported on what they have done to other teachers. They then had to use the activity again in the context of the third lesson plan.

From the analysis of the three portfolios it was only Teacher I who defined assessment activities in lesson plan 1. Although this is the case the depth and the specific activities associated with the assessment were not clear. This is due to the fact that the teacher

emphasized assessment strategies, rather than assessment activities (i.e. what exactly she was planning to assess). For example she indicated 'educator group assessment' and 'educator observation' (teacher portfolios). It is not exactly clear what to be assessed. But after a special workshop on assessment the teachers came up with improved assessment tools (see Figure 4.2). In the rubric that was designed by Teacher I, for example, what she wanted to assess, and how she was going to collect evidence of learning were clear. This has the following implications for support processes provided by subject advisors to ensure that the workshops organized focus on assisting teachers to:

- Develop support strategies that allow teachers to plan assessment activities based on the assessment standards chosen.
- Expose teachers to specific assessment tools that are relevant to the assessment standards, and encourage them to plan their assessments using the tools.

5.2.1.5 Ensuring meaningful integration

In almost all the lesson plans analyzed this aspect of lesson planning is not attended to except for Teacher A in lesson plan 1. She integrated outcomes from Human and Social Sciences with outcomes from Languages. This she did by giving learners a passage to read and asking them to answer questions based on the passage. They then had to construct sentences from given words taken from the text and have a discussion about indigenous and alien plants. Most of the evidence that is in the learners' work illustrates that sentences written by the learners are not contextualized with the story, for example, for the word 'dangerous' two learners wrote 'the dangerous is big'; 'The dog is dangerous'. Even though these sentences did not relate to the topic, the learners were awarded some marks (evidence in teacher portfolios).

From the evidence gathered in this study, it seems that a specific session on integration was not organized in the Makana cluster as part of their programme. The interviews with the subject advisors also provided no further evidence that subject advisors were considering integration as an important aspect of providing support to teachers for lesson planning. As shown in the example above, drawn from the teacher portfolio, it seems that this is also not widely practised by teachers, and the case above also

illustrates that there are mis-interpretations associated with integration i.e. integration can take place, but it may not be meaningful to the context of the lesson.

The NEEP – GET guidelines on lesson planning, emphasize the need for *meaningful integration*. The NEEP – GET guidelines on lesson planning (NEEP – GET, 2004:45) indicate that:

Meaningful integration can also strengthen the learning outcomes in a particular learning programme. Meaningful integration can also ensure greater relevance and application of learning and it provides learners with a more holistic learning experience. Meaningful integration also helps to situate classroom learning in real-life experience and context, and helps learners to understand these better ... Meaningful integration is central to environmental learning as environmental issues and risks require integrated solutions.

This has the following implications for support processes provided by subject advisors:

- Develop strategies to support teachers to develop lesson plans that create meaningful, relevant, holistic and challenging learning experiences for learners in response to environmental issues and risks.
- Develop strategies that can help teachers to extend their lesson plans with learning outcomes from the other learning areas.

5.2.1.6 Summary

In supporting teachers to interpret the curriculum framework, it would seem that subject advisors are paying much attention to the following aspects:

- **Making links between outcomes and assessment standards:** The discussion above, however, reveals that careful and detailed attention needs to be given to this dimension of lesson planning, so that teachers do not apply assessment standards incorrectly .
- **Planning for assessment:** The discussion above reveals that there is a need to introduce and expose teachers to different assessment tools and to encourage them to use them in practice.

In supporting teachers to interpret the curriculum framework, it would seem that subject advisors are giving less (or no) attention to the following aspects:

- Interpreting the environmental focus in the learning area.
- Interpreting the curriculum principles in lesson planning.
- Ensuring meaningful integration of learning areas.

As indicated in the discussion above, these are all important dimensions of environmental learning in post-apartheid South Africa. In particular it would seem important for subject advisors to develop strategies for supporting the interpretation of the curriculum principles and the environmental focus in the learning areas, so that learners are given opportunities to explore the relationship between human rights, a healthy environment and social justice can be realized in classroom practice. Through meaningful integration, lesson plans and learning can be more holistic, and can be further strengthened (NEEP – GET 2004).

5.2.2 Focusing on learning processes (providing pedagogical support)

5.2.2.1 Integrated support for learning

The NEEP – GET (2004) guidelines on lesson planning identify five dimensions that focus on learning processes in lesson planning. The first of these involves thinking about learning in the lesson plans. The document notes that “learning is the heart of all lesson planning” (NEEP – GET, 2004:47). It discusses recent developments in education, and notes that mediating learning “...means that a teacher should support learning in different ways”. They give an example which illustrates how a teacher supported learning by a) situating the learning in an appropriate context; b) giving the learners questions to guide investigations; c) giving them information resources to extend their current knowledge; and d) asking them to try the same activity again. This example shows that supporting learning requires a range of integrated strategies.

The guidelines further indicate that supporting learning takes place differently in different contexts. The document also emphasizes the importance of mobilizing prior knowledge, and makes the point that in an African context, this may involve a mobilizing of indigenous knowledge. This is important because it allows learners to “encounter more than one way of knowing, and more than one knowledge system” (*ibid.*51). The book further indicates that using different teaching methods gives learners “... a range of

different opportunities for learning about the topic." (*ibid.*53). This also allows different learning styles and variety which helps to keep interest. Opportunities such as individual learning and independent research, group work, fieldwork and other methods provide learners with different opportunities for knowledge construction (*ibid.*). The document further notes that use of learning and teaching support materials assist learners to construct new knowledge. "They provide new information that can inform investigations and action planning to solve or address problems. They also provide useful structure and guidance for ... investigative or action-centred activities ... The materials should be carefully mediated by the teacher to ensure that they *support learning*" (*ibid.* 55, emphasis original).

This means that if subject advisors are to provide support to teachers to think about learning, there is a need to a) focus discussions on learning processes; b) think about relevance and context; c) mobilize prior knowledge, including indigenous knowledge; d) use different teaching methods and provide a variety of learning opportunities for learners to construct knowledge; and e) use learning and teaching support materials in ways that *support learning*. In the next sections these dimensions are discussed, drawing on the data presented in chapter 4.

5.2.2.2 Thinking about learning

There were a variety of processes that indicated a focus on learning, particularly in the Makana cluster work. For example, the Makana cluster facilitators organized fieldtrips so as to enhance the teachers' knowledge of the environmental issues that were going to be looked at. Teachers were asked to brainstorm the environmental issues of interest to them. In planning their lesson they were asked to focus on the issue that is relevant to their particular environments so that their learners can learn about something which is relevant to them. This was done to assist teachers to develop lesson plans that were relevant to context, so that lessons could be based on learners' prior knowledge and experience in this context. As indicated in chapter 4, all teachers appeared to have done this successfully in their lesson plans.

In the lesson plans it seemed that teachers considered learners' prior knowledge in their lessons. For example, in Teacher I's lesson plan 2, she indicated that learners were very

interested and keen to talk about the problems they were experiencing in their environment. She reflects that "I enjoyed teaching this learning unit [lesson plan] ... It was so relevant to our learner's environment" (teacher portfolio). This shows a link between relevance and prior knowledge.

Other strategies that focus on learning were applied in this cluster programme to assist teachers to think about learning, but they are discussed below in the different sections. Subject advisor interviews did not reveal that they were paying explicit attention to learning processes in their support of teachers (see chapter 4).

One of the key strategies introduced in the NEEP – GET project to scaffold and support learning processes and a consideration of these in lesson planning, was the introduction of an active learning framework. As noted in section 4.4.6, this was done through providing teachers with a booklet (O'Donoghue, 2001) and by focusing on this in cluster-based workshops for subject advisors (Nduna, pers. comm., 2003).

Evidence in teacher portfolios indicates that this assisted teachers in the Makana cluster to consider learning processes in their lesson plans, and all teachers indicated a variety of activities associated with this framework. These include: mobilizing prior knowledge; undertaking investigations; working with information; taking action and reporting on the actions. Examples include: Teachers A, I and J, in lesson plan 1 used mind maps to mobilize learners prior knowledge. Teacher A gave learners an information sheet to read, which was followed by a field trip. Learners undertook an enquiry in the school grounds and reported on this activity (teacher portfolios). Teacher I indicated that the learners were going to take action through clearing alien plants, but this was not evident in the same way in the other lesson plans. This shows that the use of this framework strengthens 'thinking about learning' when doing lesson planning.

The NEEP – GET pilot research also showed that teachers responded well to the active learning framework (Lotz-Sisitka & Raven, 2000:42) for example participants in KwaZulu Natal (KZN) noted that "...the active learning framework was very helpful because it became a solution to help implement OBE". Although the active learning framework proved to be useful in introducing teachers to a way of thinking about learning, the lesson plans developed clearly indicated that the teachers also faced challenges in using

this framework. These include: teachers were not always able to indicate what actions were to be taken by learners and it was not always appropriate to have action-taking for all lessons. Similarly, investigative strategies are new to many teachers and require careful planning for them to be successful. The teachers in the Makana cluster also struggled to work with information, particularly when they encountered a situation where information was contradictory.

While the active framework was introduced to all subject advisors participating in the NEEP – GET project, the interview data did not show that this framework was being used. To assess this, I would need to analyze portfolios from other clusters.

This has the following implications for subject advisor support to teachers:

- A more explicit focus on learning processes needs to be integrated into teacher development programmes.
- The active learning framework provides a useful scaffolding to assist teachers to think about learning, but there is a need to consider the different aspects of the active learning framework carefully in relation to the context in which it is being used.

5.2.2.3 Considering context

Activities such as the fieldtrip, and encouraging teachers to identify local environmental issues were incorporated into the Makana cluster programme. These activities were used to help teachers to focus on the socio-ecological context in which learners live, so that environmental issues could be identified and addressed. Teachers were encouraged to identify priorities that needed attention in their schools and communities and this was used as the basis for lesson planning. For example, Teacher J planned a lesson on sanitation and personal hygiene as she identified these as pressing issues in the school and community. Teacher I planned a lesson on sanitation for the same reason, and Teacher A developed a lesson plan on water use in the school. These lesson plans were derived from a cluster-based discussion on priorities that needed addressing in the Makana District, which included local health issues, conservation issues and resource use issues.

From the Lesson Plans analyzed this aspect was prominent in Lesson Plan 3 of Teacher J and Lesson Plan 2 of Teacher I. In both cases the environmental issue addressed was Sanitation (and personal hygiene for Teacher J). In Teacher J's lesson the learners lived in a context that did not provide them with taps for washing their hands after they had gone to the toilet. The learners were then asked to make taps using plastic bottles and nails (available materials) in their context. Teacher I considered the contexts of the learners came from homes with different sanitation systems by introducing them to different types of sanitation systems. The learners were further asked to identify the advantages and the disadvantages of the different types of sanitation systems. By doing this, both these teachers were helping these learners to understand their contexts better as the environmental issues are context-specific (see section 2.7.2).

In the subject advisor interviews, subject advisors showed a concern for addressing environmental issues, which shows that they have some concern for context in learning. However, as they felt that they did not have much knowledge on environment, they did not feel confident to support teachers in this work.

This has the following implications for support processes provided by subject advisors:

- Making sure that the teachers' lesson plans consider the specific and unique contexts of the learners.
- Ensuring that the specific contexts are linked to the understanding and interpretation of the assessment standards and the learning outcomes.

5.2.2.4 Mobilizing indigenous knowledge

From the lesson plans that were developed by the three teachers there is no indication of how indigenous knowledge has been mobilized. There was similarly no indication of a concern for this aspect of learning amongst the subject advisors interviewed. This shows that there is little debate about different knowledge systems in the current educational system.

This therefore has the following implications for the support processes provided by the subject advisors:

- Develop strategies to support teachers to understand what is meant by indigenous knowledge, and how they can support learners to mobilize local knowledge in school-community contexts.
- An understanding of considering different ways of knowing and different knowledge systems in education.

5.2.2.5 Using different teaching methods

Teachers in the Makana district were exposed to a variety of teaching methods. These teaching methods include fieldwork, resource-based learning, and methods associated with the active learning framework.

It is evident in the lesson plans that teachers tried to use a range of different teaching methods when engaging learners in the activities of the lesson plans. The methods which seem to be most prominent are: group work, co-operative learning, resource-based learning, active learning processes of mobilizing prior knowledge, undertaking investigations, taking actions and reporting on the actions (see 5.2.2.2 above), field work and dramatization (teacher portfolios), some are discussed below:

- *Group work*: For Teacher J, the group work method was used for lesson plan 3, activity 2 where the learners were required to look at the “cholera poster” go through questions which were in the poster. This was done with grade 1 learners.
- *Field work*: Field work was done by all the teachers but it has come out clearly that only Teacher I made preparations for the field work (see section 4.4.5).
- *Active learning processes*: All teachers tried to involve learners in investigations, and some used action taking approaches. Different activities (e.g. mind mapping and questioning) were used to mobilize prior knowledge.

In the interviews and questionnaires subject advisors noted that they supported teachers to use group work as an important method. Group work has become a popular method in OBE, as identified in the NEEP – GET pilot research (Lotz-Sisitka & Raven 2001).

The discussion above points to the following implications for the support processes provided by the subject advisors:

- Continue helping teachers develop appropriate group work activities that will help the learners achieve the learning outcomes.
- Focus on a broader range of methods, other than just group work. For example fieldwork, investigation, drama etc. can be explored in workshops with teachers.
- Provide proper guidance on what needs to be done before one engages in fieldwork and what has to be done during and after the fieldwork (help teachers to plan for fieldwork).

5.2.2.6 Using learning and teaching support material

As has already been discussed in section 4.4.1.4 the use of learning and teaching support material in professional development enables a better understanding of the environment, environmental education process and integration of environment in the curriculum. The learning and teaching support material provide the teachers with practical ideas for developing lesson plans for use in their schools.

In chapter 4 it was indicated clearly that subject advisors and facilitators provided the teachers with learning and teaching support materials, obtained from various service providers as well as some government departments (see section 4.4.1.4). However even though the teachers were given these, the way they used them varied from one teacher to the other. It is also clear from the responses in the subject advisor interviews that they also need to be oriented on how to use the materials given by the various service providers. This will enable the subject advisors to help the teachers use these materials during their lesson plan developments as well as during the actual implementation of the lesson plans.

According to the *Norms and Standards for Educators Policy*, (DoE, 2000a, see section 1.3.2) and the *Revised National Curriculum Statement Overview* document (DoE, 2002a :9), there are some practical, foundational and reflexive competencies associated with the roles that the teachers are required to achieve. One of these roles is that of teachers becoming able to design and interpret the learning programmes and learning support materials. As a practical competence teachers should also be able to 'adapt and design

and/or select learning resources that are appropriate to the context" (see section 2.6). It is also further noted by Lotz-Sisitka and Olivier (2000:75), that curriculum development requires a complex of processes and skills like "compiling, adapting and evaluating materials for curriculum development" (see section 2.6).

There was evidence of subject advisors and facilitators helping the teachers to select learning and teaching support materials from a variety of materials with learning outcomes, assessment standards and the active learning framework in mind. In the Makana cluster teachers were given work away tasks, which required the teachers to develop lesson plans using materials focusing on waste and hygiene. They were also provided with support to use learning support materials produced by other service providers, for example an information sheet provided by the Millenium Tree Planting Project, nutrition information provided by Umthati training project, and an article on a plant species provided by REYFN. The provision of materials from service providers seemed to be a strong feature of the lesson planning support provided by the other subject advisors interviewed as they indicated that they had given teachers materials provided by Birdlife Africa and the Albany Museum (amongst others). The Makana cluster facilitators indicated that there is a need to be sensitive to contextual needs when developing lesson plans using the learning support materials. Makana cluster facilitators noted that sometimes the agendas of the service providers do not meet the needs of the teachers. They indicated that the facilitators and subject advisors therefore have an important role to play in assisting teachers to select and adapt relevant materials (see section 4.4.1.4).

The analysis of teacher lesson plans in the portfolios showed too that teachers used a variety of materials, for example the cholera poster, information sheets on alien plants, magazines, and textbooks. In each case, activities were developed to scaffold learners in the use of the materials, for example, Teacher I, Lesson Plan 3 provided the learners with old magazines to cut out pictures and she also gave them information strips and a picture of energy production as well as a textbook on climate change to find out the sources of electricity. Teacher I, in lesson plan 2 gave the learners the cholera poster and they were asked to identify and discuss the problems that were depicted in the poster. However, Teacher A, in lesson plan 1 gave the learners an environmental fact sheet on invader plants, but it was not clear how the fact sheet would be used in the

lesson. Some teachers also made their own learning and teaching support materials, for example Teacher A, in lesson plan 3 produced simple and effective worksheets for learners to practise their counting skills. She also mounted samples of the alien plants on a card, and the learners used the cards to identify these plants in the school grounds. From the analysis of the teachers' portfolios it was clear that the use of learning and teaching support materials influences and strengthens the planning of lessons.

This has the following implications for the support processes provided by subject advisors:

- Develop strategies to support teachers to select and adapt learning and teaching support materials that are appropriate to the context and to the learning outcomes and learning area.
- Support teachers to develop their own materials
- Support teachers to make sure that the purpose of the materials is clearly indicated in the lesson plans.

5.2.2.7 Summary

From the analysis above, it seems that attention was given to providing pedagogical support to teachers for lesson planning. However, it seems that most of this support was provided in the Makana cluster. Evidence from other subject advisor interviews shows that they were focusing mainly on a) supporting group work and b) providing learning and teaching support materials as a way of providing pedagogical support. The Makana cluster activities show that the use of an active learning framework is a useful tool to support teachers to think about learning processes and different teaching methods, although careful attention needs to be given to how the different methods are used in context. There is evidence that subject advisors (not associated with the Makana cluster) were using the active learning framework (but this was not analyzed in this study). Nduna (pers comm., 2003), noted that the active learning framework was introduced at a provincial level and quite a bit of time was spent on this framework as a way of thinking about learning. Mobilizing prior knowledge emerged as an important dimension of thinking about learning in the Makana cluster, but this was not extended to a mobilizing of indigenous knowledge, to provide learners with other ways of knowing and as an introduction to other knowledge systems. Use of learning and teaching

support materials seemed to be an important strategy for supporting lesson planning in the Makana cluster, and there is evidence that this helped to strengthen lesson planning as teachers were exposed to, and used a variety of locally available materials. Some teachers also developed additional learning and teaching support materials. The other subject advisors also provided materials to teachers, although they also indicated that they need a better insight into the use support materials to be able to better share them with teachers.

This section has shown that to provide pedagogical support for lesson planning, subject advisors may need to consider a range of integrated approaches which focus on different dimensions of the learning process such as the importance of context, relevance, prior knowledge, different knowledge systems, use of teaching and learning support materials and different methods and active learning approaches.

5.2.3 School improvement and school-community links

5.2.3.1 Lesson planning, school improvements and school community links

The NEEP – GET (2004:57, 59) guidelines for lesson planning also emphasize school improvement and school-community links as aspects to consider in lesson planning. They note that:

... schools are the place where learners spend a large part of their day. Many schools in South Africa are in desperate need of school improvements to make the environment healthier and more conducive for learning. Taking positive action for a healthy environment will enable learners to develop a sense of ownership and pride in their schools... School improvement actions all contribute to the development of knowledge, skills and values that are needed for establishing a healthy environment in schools and communities... Environmental issues and risks are often context-specific. They affect the lives of the learners in schools as well as the community members. Often it is difficult for learners to resolve or address environmental issues in their communities and they may need the help of key members in the community. Involving community members in some of the lesson planning activities is one way of fostering better school-community links.

In the three portfolios analyzed almost all the lesson plans did not consider the aspect of school improvement in their lesson planning although I can say that to some extent,

Teacher J tried to incorporate this aspect in lesson plan three. She did this by asking learners to make taps using available materials so that when they come out of the toilet they are able to wash their hands. This is in one way of contributing towards a healthy environment in the school.

In order to address this aspect of lesson planning the three teachers involved the community members in their lesson plans. For example, when looking at lesson plan 2 of Teacher I, it is evident that the community members were involved since the learners were going to ask them about the disadvantages of using a bucket system. In lesson plan 1 all the teachers took their learners on a fieldtrip and they organized an expert from the Albany Museum to assist learners to identify alien and/or indigenous plants. The other two teachers, (I and J) also engaged the services of the parents during these field trips. Although this is the case it is not communicated clearly in the lesson plans what actions were taken by both the school and the community with the regard to the issue that was looked at or identified.

Many opportunities were provided in the Makana cluster for teachers to consider how lesson planning would contribute to healthy environments in schools and communities and, as noted above, lesson plan topics were developed in response to issues identified by the cluster as needing attention in the local environment. A range of service providers and community members were drawn in to provide additional support to the teachers in their lesson planning activities. There was not much evidence of this as an area of support in the subject advisor interviews or questionnaires.

This has the following implications for support processes provided by subject advisors:

- Ensuring that some of the lesson plans developed would enable the learners to identify problems in their school grounds, which will cause the learners to identify activities that would lead to the improvement of the school grounds.
- Ensuring that partnerships for a healthy environment are established at district level, so that teachers can draw on service providers and community members to contribute to lesson plans and to the teaching of lessons.

5.2.3.2 Summary

As an environmental education project, the NEEP – GET has considered the importance of the local environments in which learners find themselves. A focus on the school environment in lesson planning, through an emphasis on school improvements, the school-community relationships, and involving the community in lesson planning are ways of ensuring a healthier environment in the schools and communities. It seems that teachers responded well to this focus on the local environment in their lesson planning, although there was not much emphasis on school improvements in their lessons. They were able to make use of community members in assisting them with some of the lessons. This is important for a) addressing environmental issues and risks which are context-specific and b) for developing of a sense of ownership and pride in the school.

5.3 ADEQUACY OF EXISTING STRATEGIES USED BY SUBJECT ADVISORS

5.3.1 Challenges confronting subject advisors and facilitators

From the analysis above, it is clear that subject advisors are confronted by many challenges in the provision of the in-depth support that appears to be needed for high quality lesson planning to take place. These challenges relate to a) broadening existing interpretations and support activities related to an interpretation of the curriculum framework; b) strengthening pedagogical support and enhancing a focus on learning, which as NEEP-GET (2004) notes, is the 'heart' of lesson planning; and c) considering the contributions of lesson planning to school improvement and the fostering of school community links.

As indicated in section 4.4.1, subject advisors currently use strategies to provide support to teachers for environmental learning in addition to the support strategies that focus on curriculum interpretation and pedagogy. These strategies are a) workshops that focus on interpretations of the curriculum framework and b) school visits to support pedagogical activity and curriculum interpretation. These are now considered in the light of the above challenges.

5.3.2 Workshops

In section 4.4.1 it was indicated that workshops seem to be the most common strategy in helping teachers develop lesson plans with an environmental focus. In order for the workshops to respond to the above challenges with regard to lesson planning processes, they should be intensive and ongoing. It would seem from the above analysis of the curriculum and pedagogical and assessment guidance that once off, *ad hoc* workshops will not adequately provide the support that is needed. As shown in the Makana cluster, ongoing workshops over a period of time that encourage teachers to work together and to do work in schools appear to be needed. This may mean that subject advisors need to establish workshop programmes for a period of a year or more and that these workshops should focus on different aspects of lesson planning over this time. This will mean that the Department of Education should support the subject advisors in this process, so that continuity can be established and maintained.

It is also important that the different contexts from which these teachers come should be considered and, in the process, where possible other learning area specialists can be involved to strengthen the understandings of environment in the different learning areas. A team-based strategy for developing and running the workshops may be useful.

5.3.3 School visits

Interview data indicated that subject advisors do visit schools, but this is done irregularly, due mainly to contextual constraints and the large number of schools that they support. It seems that subject advisors currently use school visits to 'check up' on whether teachers are implementing the curriculum or the ideas introduced through workshops. In the case of the Makana cluster, the subject advisor indicated that through a focus on the lesson plans and how they were being done in school, she changed her approach to school visits to be more support orientated, and less 'checking up' orientated. She felt that this made a difference to her role, and also supported the teachers better. A more supportive approach to school visits may therefore strengthen lesson planning implementation, although this was not investigated in any depth in this study.

5.4 CONCLUSION

This chapter has reviewed the support strategies which are used by subject advisors and facilitators as they relate to lesson planning development, using the NEEP – GET (2004) lesson planning guidelines to frame this analysis. The key challenges facing subject advisors have been isolated and discussed and these present issues for further consideration. The implications for subject advisors support for lesson planning were identified.

The other strategies that were identified by the subject advisors were also reviewed critically to see whether they are adequate to respond to the challenges relating to the support needed for curriculum, pedagogical and assessment guidance for lesson planning.

In the next chapter I summarize my study and make recommendations for the improvement of support provision to teachers for lesson planning. I also consider the ongoing professional development needs of subject advisors as these relate to the findings of this study. I will also review the research process and make recommendations for further research.

CHAPTER 6

SUMMARY AND RECOMMENDATIONS

6.1 Introduction

As shown in this study, lesson planning within an outcomes-based education framework is a challenging dimension of policy implementation. Chapter 2 of the study highlighted some of the challenges associated with policy change and implementation in South Africa. As indicated in chapter 2, the role of subject advisors and facilitators who support teachers to make sense of the curriculum, is crucial, as they provide the interface between policy and practice. They are the people who work most with teachers, and have a responsibility for curriculum implementation. This study has tried to provide a deeper insight into the processes that are involved in providing support to teachers for lesson planning, which is the daily business of a teacher. From this study, it is clear that it is at the interface between subject advisor, teacher, lesson plan and learner that curriculum transformation actually takes place.

In this chapter, I firstly summarize the study by reviewing the different chapters in relation to the aims of the study. I then focus on some of the recommendations that have emerged from the research findings. These recommendations arise out of the discussions in chapter 5. Following this I briefly review the research process, and I make recommendations for further research.

6.2 Summary of the study

This study aimed to clarify the role of subject advisors and other curriculum support staff in providing support to teachers for lesson plan development with an environmental learning focus (see section 1.2). This study was influenced by different contextual issues which include policy changes in South Africa, inclusion of environmental education in the curriculum (see section 1.3.1 and chapter 2) and the establishment of the NEEP – GET project (see section 1.3.2). I also considered my own role as a subject advisor in the Umtata Education District Office. All of these contextual factors shaped and influenced

this study. In chapter 3, I described the methodology and the methods used to produce the data. I used interviews and questionnaires with subject advisors and facilitators, supplemented by in-depth document analysis in one cluster. Documents analyzed included teacher portfolios and cluster programmes and reports. Through this I was able to get a broader view, as well as an in-depth picture of the kinds of support provided to teachers with lesson planning. I found that it was important to analyze teachers' lesson plans, to establish what they had produced as a result of the support, and I analyzed nine lesson plans produced by three teachers. I also considered validity and ethical issues as well as the trustworthiness in this study.

In chapter 4 I presented the main findings that emerged through the data analysis. I found that there were several strategies which are used by subject advisors in supporting lesson plan development, of key importance were the range of strategies used to provide curriculum guidance and pedagogical support. In Chapter 5 I considered this dimension of subject advisor / facilitator support in more depth, through drawing on the framework for lesson planning support provided by the NEEP – GET project in 2004 (NEEP – GET, 2004). As this framework was not in use during the life of the project in the Eastern Cape, this analysis is not an evaluation of subject advisor / facilitator support processes, but was used to provide a broader perspective from which to analyze the practices as evident in the case study. This provided useful insight into potential implications for subject advisor support for lesson planning. The analysis in chapter 5 indicated that some strategies are used to provide curriculum and pedagogical support and guidance, but that these are superficially treated and others have not been attempted at all. This therefore shows that further growth in this area is possible amongst subject advisors, particularly in areas such as a) interpreting the curriculum principles in lesson planning; b) ensuring meaningful integration; c) mobilizing indigenous knowledge d) introducing more teaching methods to teachers; e) and more in-depth consideration of learning processes amongst others. This analysis has provided the scope for making recommendations that are relevant to a) subject advisors who wish to support teachers in lesson planning development and b) the Department of Education and other service providers (e.g. Higher Education Institutions) who are responsible for providing professional development to subject advisors (see 6.3 below).

Further analysis of strategies used by subject advisors also revealed other challenges. For example the workshops conducted do not seem to be intensive and they also do not seem to be held on a regular basis where teachers would be introduced to an aspect in the workshop and take this back to their schools where they would implement it and then come back for another workshop where a reflection of what happened in the schools would be done. Subject advisors are also faced with the challenge of having to provide more meaningful support during school visits, and with the even greater challenge of being able to visit schools (given the large numbers of teachers they are responsible for). Recommendations are also made with regards to this aspect of their support function.

6.3 Recommendations

6.3.1 Recommendations relating to curriculum, pedagogical and assessment support

Based on the discussion in chapter 5, I would like to make the following recommendations which relate to curriculum guidance, pedagogical and assessment guidance:

6.3.1.1 Interpreting the curriculum framework

Based on the discussions in section 5.2, in particular section 5.2.1, this study recommends that:

- Ensure that the support for linking outcomes and assessment standards is specific, so that teachers do not use assessment standards incorrectly in relation to outcomes or grades.
- Draw on the curriculum statements to identify the environmental focus in the learning areas, and then support teachers to understand the meaning of the environmental issues, risks and concerns, as reflected in the curriculum statements, and in the local context.
- Support teachers to identify and analyze environmental issues at a local level, as these relate to learning outcomes and assessment standards.

- Work with teachers to identify the links between environmental problems, social justice issues and human rights, so that learners in schools can investigate these problems and also find solutions.
- Expose teachers to specific assessment tools that are relevant to the assessment standards, and encourage them to use them to plan their assessments using the tools.
- Develop strategies that can help teachers to extend their lesson plans with learning outcomes from the other learning areas, in order to support the development of lesson plans that create holistic, challenging, meaningful and relevant learning experiences for learners in response to environmental issues and risks in the context of the learning outcomes.

In particular, attention should be given to processes that interpret the environmental focus in the learning areas, interpret the curriculum principles in lesson planning and ensure meaningful integration of learning areas as these currently seem to be neglected.

6.3.1.2 Providing pedagogical support (focusing on learning processes)

Based on discussions in section 5.2, and in particular section 5.2.2, the following recommendations are made to strengthen pedagogical support in lesson planning:

- Integrate a more explicit focus on learning processes in teacher development programmes
- Draw on approaches such as use of active learning frameworks, to scaffold and assist teachers to think about learning.
- Support teachers to consider how lesson plans relate to the specific and unique contexts of learners
- Ensure that the specific contexts are linked to the understanding and interpretation of the assessment standards and learning outcomes.
- Develop strategies to support teachers to understand that there is more than one knowledge system, and that they can support learners to mobilize indigenous knowledge in lesson planning.
- Focus on a broader range of teaching methods, other than just group work.

- Develop strategies to support teachers to select and adapt learning and teaching support materials that are appropriate to the context and to the learning outcomes and learning areas, and also support teachers to develop their own materials.

As shown in section 5.2.3 the current strategies that are dominant are: supporting group work and providing learning and teaching support materials. There thus appears to be a need to broaden engagement with learning processes, and a stronger focus on learning in lesson planning. This needs to include a consideration of different knowledge systems, and the mobilizing of prior knowledge (including indigenous knowledge).

6.3.1.3 School improvement and school-community links

Based on discussions in section 5.2.3 and specifically 5.2.3.1 the following recommendations are made to subject advisors:

- Ensure that some of the lesson plans focus on improvement of the school grounds, as this provides a practical way for learners to contribute to a healthy environment.
- Assist teachers to establish partnerships for a healthy environment at district level, so that teachers can draw on service providers and community members to contribute to lesson plans and to the teaching of lessons, in order to strengthen school-community links.

6.3.1.4 Recommendation for the Department of Education and Higher Education Institutions

Based on the recommendations outlined above in section 6.3.1.1-6.3.1.3, the following recommendation is made:

- Establish a process that provides for the professional development of subject advisors so that the above noted recommendations can be dealt with. As shown in this study, subject advisors appear to require additional capacity and professional support in the context of curriculum change, so that they are more

able to provide the necessary support to teachers. This finding is supported by similar findings in the study by Mphaphuli *et al.* (2003), and by research findings in this study which indicate that subject advisors have few opportunities for professional development, yet they face many complex challenges. Higher Education Institutions that provide professional development to subject advisors should consider the integrated challenges outlined above, which are relevant to the roles of subject advisors.

6.3.2 Recommendations to strengthen existing strategies used by subject advisors

Based on the discussion in section 5.3 the following recommendations are made:

6.3.2.1 Recommendations for subject advisors

- Change the model of *ad hoc* workshops to one which allows for ongoing workshop programmes for a period of a year or more, to support teachers with lesson planning, as this process requires intensive, longer term support. Plan programmes to ensure continuity between workshops, and encourage teachers to do work away tasks in schools, so that they can try out the ideas presented in the workshops.
- Where possible, try to change the approach to school visits from 'checking up' to providing support for deliberating on lesson planning issues in schools.

6.3.2.2 Recommendations for the Department of Education

- Support subject advisors to establish ongoing workshop programmes to allow them to work with groups of teachers for longer periods of time in ways that provide more intensive support.
- Reduce the load on subject advisors so that they are more able to visit schools and provide qualitative support for lesson planning work.

6.4 Reflections on the research process and recommendations for further research

Looking back at this research process I have faced a number of challenges. Firstly, it was difficult to identify subject advisors to interview, and secondly, I found it difficult to get responses to the questionnaires. Having not been part of the NEEP – GET and the General Education Training band more broadly (as indicated in chapter 1 I work mostly with the FET band at the moment, although I do have some responsibility for GET), I found it a little difficult to keep track of the changing process in the NEEP – GET. For example, I was not always able to attend the NEEP – GET workshops, despite the fact that I am working in the Eastern Cape.

Initially I found that the data I had generated was limited, in that it did not give me good insight into actual lesson planning practices. After discussion with my supervisor, I then decided to analyze some of the teacher portfolios in the Makana NEEP-GET cluster. This provided a rich source of data which showed up some of the issues associated with lesson planning as experienced by teachers. This allowed me to develop a better analysis of the lesson planning. I also found the NEEP – GET guidelines for lesson planning useful in doing this analysis as can be seen in chapter 5.

There are some areas in this study that warrant further research, and I make recommendations for further research below:

- As noted in chapters 4 and 5, the bulk of the detailed data in this study came from the Makana cluster. It would be of value to gather similar in-depth data linked to other subject advisors' work. This would provide a fuller picture of what is happening in the province more broadly. It will also highlight other challenges associated with lesson planning. This study recommends further research of this nature, with other subject advisors.
- It would also be useful to research a workshop programme developed by subject advisors over a longer time period to see if continuity in workshop programmes would strengthen lesson planning.

- More in-depth research is needed into the curriculum support function of subject advisors as this study showed that this is a complex and challenging area.
- More research is needed to explore different approaches to school visits organized by subject advisors, with special reference to the way that these support lesson planning.
- As shown in this study, 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. Further research can be done in this area as well.

6.5 Conclusion

As noted above, this study tried to research the strategies used by subject advisors to support teachers in lesson planning with an environmental focus. The study outlined this as an important dimension of curriculum transformation and policy implementation in South Africa, noting that teachers are faced with new challenges associated with school-based curriculum development. The study also noted that subject advisors and facilitators who support teachers, are similarly faced with these challenges. The study showed that various strategies are being used by subject advisors in supporting teachers with lesson planning. A key strategy is to provide curriculum and pedagogical support, which includes support for assessment.

The study showed, however, that the strategies used by subject advisors are limited, and that there is much room for expanding the work that they are currently doing if high quality lesson plans are to be developed. These findings were based on analysis of interviews and questionnaire data gathered from subject advisors, and in-depth document analysis of the programme and portfolios developed in one cluster in the Eastern Cape Province. The study also found that there is a need to support subject advisors through professional development, and recommendations were made to this effect.

In conclusion, this study has helped me to achieve what I intended, which was to learn more about the strategies that can be used by subject advisors such as myself, when supporting teachers to develop lesson plans with an environmental learning focus. As the FET curriculum is to be implemented next year, this research will no doubt help me to plan a workshop programme for the teachers that I support, and in doing this, will assist with curriculum implementation in the Life Sciences subject in the FET in the Eastern Cape Province. It is my hope that others will similarly be able to use this research to support their work with teachers.

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6. OUTCOMES GUIDING NEEP-GET PROFESSIONAL DEVELOPMENT PROCESSES

Based on the above scoping of key focus areas for the professional development of curriculum support staff and teachers in the NEEP-GET, a set of outcomes have been developed by NEEP-GET project staff. These outcomes are associated with the different 'branches' of the learning trees, and are similar for both teachers and curriculum support staff, except that the outcome on the management of professional development is only for curriculum support staff. Project staff have suggested some dimensions of the scope and depth of each of the outcomes, but this will need to be refined in interactions with the project activities over time, with educators involved in the cluster activities, and with accrediting partners. The outcomes themselves may also need to be refined in the life of the project.

AT THE END OF THIS PROFESSIONAL DEVELOPMENT PROGRAMME LEARNERS WILL / SHOULD BE ABLE TO ...

Interpret and apply an environmental focus in a learning area

Scope and depth may include:

- *Clarification of environmental foci in learning areas*
- *Sourcing and application of environmental content and process skills in relation to learning area requirements*
- *Acquisition of a broader understanding of learning area requirements and methodologies*
- *Interpreting assessment standards relevant to the environmental focus in learning areas*

Plan, implement and evaluate a unit of work with an environmental focus

Scope and depth may include:

- relevance of unit of work to environmental focus and learning area requirements
- knowledge of learner's needs and consideration of school and classroom context
- learning programme requirements for different phases
- action reflection skills
- ability to identify and scope relevant environmental focus in relation to curriculum requirements for appropriate scope and depth in different phases
- appropriate use of Learning Support Materials (LSM), (including worksheets, models, activities, etc) in the context of the Unit of work

Analyse environmental issues in local context

Scope and depth / detail may include:

- knowledge of context
- ability to identify and analyse the nature, causes and impacts of environmental issues, such as occupational health, water, waste, land use and healthy living.
- understanding of key ecological processes
- understanding of key local, national & global issues such as biodiversity loss & their relation to local issues
- demonstrate a broader understanding of environment, e.g. political, social, economical and bio-physical environments
- understanding of key concepts, particularly, sustainability, environmental management & life-style choices
- socially critical interpretations / perspectives on environmental issues

Adapt, use and develop learning support materials in the development of a unit of work

Scope and depth / detail may include:

- *contextual adaptation and use of different learning support materials*
- *source available materials*
- *selection of materials for different purposes*
- *development of Learning Support Materials, such as worksheets, models, activity sheets, for specific purposes*

Demonstrate an understanding of a range of ENVIRONMENTAL learning processes

Scope and depth may entail:

- *Strong focus on diverse learning processes in relation to learning area requirements*
- *Understanding of constructivist learning theories & social constructionist epistemology*
- *Ability to mobilise prior knowledge and experience (including indigenous knowing)*
- *Demonstrate an understanding of adult learning theories¹, and learning*
- *Apply learning theories to the mediation of learning*
- *Evaluation of different learning processes*

select and apply relevant methods and Assessment processes, and reflect on their appropriateness for environmental learning

Scope & depth may include:

- *Use of an open process framework to guide active learning*
- *Application of a range of different methods in the context of different learning areas, and in response to different environmental issues*

¹ The focus on adult learning theories is primarily in the programmes for curriculum support staff. Teachers would focus more on learning theories relevant to learners in school.

- *Assessment of environmental learning processes*
- *Reporting against assessment criteria / assessment standards²*
- *Application of different assessment strategies*
- *Reflection on different methods, associated assessment processes, and effectiveness of methods in relation to learning outcomes*

Interpret and apply policy in local context

Scope and depth / detail may include:

- *educational and curriculum policy*
- *local government policies*
- *national environmental policies*
- *international environmental agreements*
- *school environmental policy*

Manage and reflect on professional development processes for teachers that foster environmental learning³

Scope and depth /detail may include:

- *evidence of leadership skills*
- *research based implementation and action reflection skills*
- *development of confidence*
- *ability to work in teams/networking/relationships*
- *ability to plan and manage cluster activities*
- *presentation skills / facilitation skills/roles*
- *understanding different models of professional development (eg. the spiral model)*
- *resource-based implementation of professional development processes*
- *ability to work co-operatively with project partners, and co-ordinate environmental education activities in a given context*

² Note that the project is 'straddling' two curricula – the C2005 which uses assessment criteria, while preparing teachers to assess against assessment standards, as outlined in the National Curriculum Statement.

³ This outcome is designed only for use in the professional development of curriculum support staff.

5. INTRODUCTION TO AN ACTIVE LEARNING framework

Appendix F

Professional Outcomes Achieved

Use of an open framework to guide active learning.

How achieved Designing a learning programme which includes the framework foci action, information, enquiry, investigation and reporting

2. Development of learning support material such as worksheets, model activity sheets for specific purposes

How achieved : I used the framework as guide to develop learning support material to get learners actively involved eg, reporting, investigation, questionnaires

3. Acquisition of a broader understanding of learning area requirement and methodologies

How achieved Using the NEEP guidelines for facilitating and assessing active learning in OBE when learning programme were designed.

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