

**CURRICULUM REFORM IN LESOTHO: EXPLORING THE INTERFACE  
BETWEEN ENVIRONMENTAL EDUCATION AND GEOGRAPHY IN  
SELECTED SCHOOLS**

**THESIS**

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## Abstract

This study sought to explore the interface between environmental education (EE) and school geography with a view to understanding a process of curriculum reform in the context of Lesotho. The research was based on the curriculum reform process that was initiated by a Danish donor-funded project, known as the Lesotho Environmental Education Support Project (LEESP), which operated from 2001 to 2004. Driven by a sustainable development imperative, the project was intended to assist Lesotho in the implementation of local action for *Agenda 21* by introducing environmental education into the formal education system. Deviating slightly from much published research on geographical and environmental education, which focuses on how geography contributes to environmental education, this study explored how the latter has shaped the former in terms of content and pedagogy. Using the lens of critical curriculum theory, I sought to understand the political nature of the curriculum and of curriculum change, focusing on the LEESP curriculum policy development, dissemination and implementation at classroom level. The study employed Bernstein's concepts of classification and framing to illuminate issues of power and control between discourses, and between teachers and learners.

Operating within an interpretive qualitative research orientation, the study used a case study method focusing on five secondary/high schools in Lesotho. The data was generated through document analysis, interviews and classroom observations. The study examined the assumptions, values and ideologies underpinning environmental education curriculum intentions as reflected in LEESP documents. It also investigated the social process of conceptualising and disseminating environmental education to understand the challenges faced as education practitioners made sense of environmental education innovations in the specific contexts of Lesotho, and how these could possibly influence what happens at the classroom level. The analysis of the LEESP documents revealed that while there are many areas of synergy between the LEESP environmental education policy guidelines and the national education ideals in Lesotho, achievement of the transformational visions of action competence, which was the overarching concept in the reform process, would require major structural changes. The study also highlights issues of participation, contestations,

tensions and contradictions associated with the conceptualisation and dissemination of environmental education.

At implementation level, there is a disjuncture between environmental education policy intentions and practice. Geography teachers in the research schools generally understood the existence of environmental education in their schools in terms of environmental management. The findings also revealed that while there is generally a strong environmental dimension in geography content, as reflected in both curriculum materials and classroom practice, the subject still retains its disciplinary boundaries and makes little use of knowledge from other subjects or the everyday knowledge of the learners. Finally, it emerged that while the geography teachers in their rhetoric espoused learner-centred methods, in practice they generally employed traditional teacher-centred and book-centred methods. The study concludes that a lack of change in school geography in Lesotho, of the sort envisaged in LEESP, may be attributed to contextual and structural factors such as an overemphasis on examinations, and certain perceptions on the part of teachers and learners embedded in the history and culture of their society. A model of teacher professional development capable of supporting curriculum change is therefore proposed.

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## **List of acronyms/abbreviations**

AGOA	-	African Growth and Opportunity Act
ANC	-	African National Party
BCP	-	Basotho Congress Party
BNP	-	Basotho National Party
COSC	-	Cambridge Overseas School Certificate
EEASA	-	Environmental Education Association of Southern Africa
ECOL	-	Examinations Council of Lesotho
DANCED	-	Danish Cooperation for Environment and Development
DANIDA	-	Danish International Donor Agency
DELPHE	-	Development and Partnership in Higher Education
J.C.	-	Junior Certificate
LAT	-	Lesotho Association of Teachers
LCE	-	Lesotho College of Education
LEESP	-	Lesotho Environmental Education Support Project
LEINET	-	Lesotho Environmental Education Network
LFA	-	Logical Framework Approach
LHDA	-	Lesotho Highlands Water Project
LTTU	-	Lesotho Teachers Trade Union
MOE	-	Ministry of Education
MOET	-	Ministry of Education and Training
MRT	-	Monitoring and Research Team
NCDC	-	National Curriculum Development Centre
NCC	-	National Curriculum Committee
NEAP	-	National Environment Action Plan
NES	-	National Environment Secretariat
PAG	-	Project Activity Group

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# CHAPTER 1 INTRODUCTION TO THE STUDY

## **1.1 Introduction**

This study sought to explore the interface between environmental education (EE) and school geography, with a view to understanding a process of curriculum reform in Lesotho. The study was based on the reform process initiated by a Danish donor-funded project, known as the Lesotho Environmental Education Support Project (LEESP), which operated from 2001 to 2004. Driven by a sustainable development imperative, the project was intended to assist Lesotho in the implementation of *Agenda 21* by introducing environmental education into the formal education system. In this chapter, I introduce the study, describing its context and stating the research goal and questions that guided the inquiry. I indicate the potential value of the study and provide an overview of it.

## **1.2 Motivation for undertaking this study**

My interest in undertaking this study arose primarily from my concern about the need for curriculum reform in the formal school curriculum in Lesotho, especially in secondary school geography. The conceptualisation of the study began in 2006. At that time I had five years' experience as a university geography education lecturer in Lesotho. Prior to this, I had been a geography educator at the now Lesotho College of Education (LCE) for three years, and a secondary school geography teacher for six years. As a college and university lecturer responsible for curriculum matters pertaining to geography, I had been participating as a member of the geography national panel curriculum development meetings and geography teachers' workshops. My work as a geography educator and my professional involvement in curriculum development activities created an opportunity for me to interact with geography teachers at the national level and hear their concerns about the subject. From such interaction, I realised that some content areas of geography and new approaches to teaching and learning presented such challenges to teachers that some of them (and their learners) were losing interest in the subject.

While I had concerns about geography, as described in the foregoing paragraph, I became involved in LEESP activities, as a member of the project's monitoring and research team, which had been established to evaluate the project as it unfolded. I was inspired by the innovative pedagogic ideas introduced by the project, particularly as they pertained to geography. Through my involvement in LEESP, I came to realise that although teachers in different subjects were generally enthusiastic about environmental education, some were uncomfortable with the new ideas (Mokuku, Jobo, Raselimo, Mathafeng & Stark, 2005). I was thus inspired to undertake this research to advance my understanding of curriculum reform in the specific national context of a developing country where innovations are often externally driven.

### **1.3 The context of the study**

In this section I provide a brief contextual overview of the study, highlighting national policy responses to the United Nations' call, through the global *Agenda 21*, for orienting education towards sustainable development. I also introduce LEESP, and flag its curriculum policy intentions for the content of school subjects and classroom practice.

#### **1.3.1 The need for environmental education in Lesotho**

Lesotho is a signatory to a number of international environmental agreements, including *Agenda 21*. Chapter 36 of this document recognises the important role that education can play in addressing environmental problems (UNCED, 1992). In response to this international action plan, and with awareness of the extent of land degradation in Lesotho, the need to incorporate environmental education into mainstream education in Lesotho has been expressed in a number of policy documents. These include the *Lesotho Constitution 1993*, the *Report of the National Seminar on Lesotho Secondary Education Localisation of the „O“ Level Curriculum 1995*, *Environmental Policy for Lesotho, 1997*, and the *Lesotho Vision 2020*. These documents provide a broad national agenda for curriculum reform processes geared towards sustainable development. In particular, the *Report of the National Seminar on Lesotho Secondary Education Localisation of the „O“ Level Curriculum 1995*

(hereafter referred as to the „O“ *Level Localisation Report 1995*), makes the following recommendation for secondary education:

Secondary education must instil and promote awareness knowledge and understanding of environment, its importance to mankind, interactions with environment, care, protection and conservation of the environment. (Ministry of Education 1995, p.22)

Following the national concern for curriculum reform expressed in the „O“ *Level Localisation Report* and other previous policy documents, there were syllabus revisions in all junior secondary school subjects, and the new syllabuses were first trialled in 1999. In line with the goals for secondary education as stated in the „O“ *Level Localisation Report*, subject panels of what were then referred to as carrier subjects for environmental education had been asked to include curriculum objectives that address environmental issues. Geography was one of these carrier subjects (LEESP, 1997).

As a strategy to strengthen the integration of environmental education in formal education, the Lesotho government, in collaboration with the Danish government, initiated LEESP in 1997, which was almost entirely funded by the Danish government. In the next section, I outline curriculum reforms that were introduced through this project.

### **1.3.2 The LEESP curriculum reforms**

Although LEESP was initiated in 1997, it was only implemented in 2001 due to administrative delays and the 1998 political turmoil in Lesotho (LEESP, 2000). By this time syllabus revisions had been completed and new syllabuses were already on trial. Consequently, the project could only make adjustments to the existing syllabuses (ibid.). LEESP was a three-year project that ended in 2004. It was initiated within the Ministry of Education and Training (MOET) as a follow-up to early environmental curriculum initiatives in Lesotho (LEESP, 2000). As stated in the project document, LEESP was designed to pursue:

a strategy of strengthening capacity in the educational sector for optimising the curriculum implementation already in progress and enable the relevant authorities and teachers in the future to cope with new curriculum developments. (ibid., p.7)

The project aimed to introduce fundamental changes targeting all school subjects and classroom instructional practices at all levels of formal education. It endeavoured to achieve these aims by building the capacity of all the stakeholders involved in curriculum development, and by suggesting curriculum amendments for all subjects (ibid.).

After its implementation in 2001, a series of stakeholders' workshops were held with the aim of conceptualising environmental education in the context of Lesotho. These workshops involved representatives from the major stakeholder institutions involved in curriculum development in Lesotho (see Section 2.5). The major outcome of these workshops was a draft *Reference Note for Environmental Education in Lesotho* (hereafter referred to as *Reference Note*, 2001), which was revised in 2004. One other outcome of the later phases of the project was the Environmental Education Handbook for Teachers (hereafter referred to as teachers' handbook). This teachers' handbook was produced to provide guidelines for the integration of environmental education into specific subjects (LEESP, 2003). It proposed attachments to the syllabuses that had been introduced in 1999 as part of the 1995 *Localisation Reform*.

The *Reference Note* was considered to be a key policy text defining environmental education in terms of content and intended pedagogy. As described in that document, the LEESP environmental education programme is built on a **sustainable development** imperative with the intention to "alleviate the causes to the present environmental problems such as overgrazing, soil erosion, water pollution, handling of solid waste, poverty, HIV/AIDS etc". (LEESP, 2004, p.1). With respect to pedagogy, the LEESP programme espoused a social constructivist **learner-centred pedagogy** underpinned by an **action-competence** philosophy which was, as will be noted in Chapter 3 (see Section 3.2.4), a dominant educational concept in Denmark and other Scandinavian countries. The broad environmental issues and learner-centred pedagogy proposed for LEESP curriculum reform projected a certain view of the

curriculum and prescribed new roles for teachers and learners within the teacher-centred Lesotho education system (see Chapter 2).

As part of its dissemination strategy to reach schools, LEESP adopted a whole-school development approach, focusing on the formal curriculum and organisational aspects of schools. The project conducted ten dissemination workshops in twenty schools (10 primary and 10 secondary/high schools) drawn from the ten districts of Lesotho. These schools were subsequently expected to act as “model schools” for the further dissemination of environmental education to other schools. At the time of this research, out of the ten secondary schools, only one was offering geography at junior secondary level. This school had managed to conduct a few dissemination workshops in three of its neighbouring schools. For this reason it was considered the best model school among the ten secondary schools.

#### **1.4 Nature of the research problem and focus of the study**

While the LEESP intervention might seem to be a necessary strategy to support curriculum change in the Lesotho education system in general, and in secondary school geography in particular, some paradigmatic tensions and contradictions were noted during the initial stakeholders’ workshops, which were intended to conceptualise environmental education in the context of Lesotho (Mokuku et al., 2005). Mokuku and his team report that, although the participants were generally optimistic about the integration of environmental education into school subjects, there were concerns about the clarity of the concept. Some stakeholders felt that the current national syllabuses, which are organised on a narrow interpretation of the principles of Bloom’s Taxonomy, would most likely undermine the transformational vision of action competence. In her study focusing on the implementation of donor-funded projects in Lesotho, Monaheng (2007) reports similar concerns and challenges associated with the implementation of LEESP at the national curriculum development level.

Apart from the problems associated with LEESP, a wider perspective on the history of curriculum reform in Lesotho (see Section 2.6) suggests that innovations are either partially implemented or not institutionalised at all in the school system (Ministry of

Education, 1995; Raselimo, 1996; Ansell, 2002; Muzvidziwa and Seotsanyane, 2002; Mpetla, Nketekete & Fieter, 2003). This seems to suggest that there is a culture of resistance to change in the Lesotho education system, possibly the result of a mismatch between the innovations and the local contexts which shape teachers' beliefs about teaching and learning (Prawat, 1992; Spillane, Reiser & Reimer, 2002).

Given the tensions and challenges noted by Mukuku et al. (2005) and Monaheng (2007) during the early phase of LEESP, this study sought to describe, interpret and explain such challenges, contradictions and tensions as arose during the conceptualisation, dissemination and implementation processes of LEESP curriculum change. The study was intended to illuminate the complexities and difficulties resulting in the differences between curriculum as **intended** and curriculum as **implemented**.

Given my special interest in geography, in this inquiry I explored the interface between environmental education (as conceptualised in LEESP) and junior secondary school geography (Grades 8, 9 and 10), focusing on one LEESP model school and its two neighbouring schools where environmental education had been introduced. For a deeper understanding of this reform process, I also covered two other schools that did not receive LEESP workshops (see Chapter 5, Table 5.1). More specifically, I investigated the interface between environmental education and junior secondary school geography in terms of what is taught and how it is transmitted, and the attendant ideologies and values. The study did not cover assessment at the levels of public examination and classroom practice, or explore the curriculum as **attained** by learners, because to have done so would have been beyond the scope of a single project of this nature.

### **1.5 Research goal and questions**

The goal of this study was to explore the dynamic interface between LEESP's curriculum change processes and junior secondary school geography in Lesotho, in terms of knowledge (what is taught) and how knowledge is transmitted and acquired (pedagogy), with a view to understanding curriculum reform in the context of Lesotho.

To achieve the above goal, the study sought to answer the following research questions:

- What is the view of knowledge and pedagogy underpinning environmental education, as reflected in the LEESP's documents?
- What is the nature of the social process through which LEESP was conceptualised and implemented?
- What is the nature of the interface between LEESP and junior secondary school geography at the level of curriculum documents and textbooks?
- What is the nature of the interface between environmental education, as conceptualised in LEESP, and school geography at the level of classroom practice?

### **1.6 Potential value of the study**

The subject of curriculum reform has attracted the attention of many curriculum scholars in Lesotho (Raselimo, 1996; Nketekete, 2001; Ansell, 2002; Muzvidziwa & Seotsanyane, 2002; Mokuku et al., 2005; Monaheng, 2007). However, there is little or no research into how curriculum reforms have shaped or are shaping school subjects at the level of classroom practice. This is the first study, to my knowledge, to have looked at how a curriculum reform process has shaped a specific school subject in Lesotho. The study provides information on *what* geography is being taught and *how* it is being taught in the three schools, following the environmental education curriculum reform. It also probes structural and contextual factors that could be associated with the problem of curriculum change. In this regard, the study contributes towards an understanding of the complex process of curriculum reform in the context of Lesotho.

In addition to informing my practice as a teacher educator in Lesotho, the findings of this study should provide some useful insights for the National Curriculum Development Centre (NCDC) into the implementation of LEESP curriculum change. Little of the research done on LEESP has focused on implementation problems as perceived by stakeholders during the early phase of the project. Such studies as have

been conducted do not analyse the actual social context for the development of environmental education policy guidelines (Mokuku, et al., 2005; Ansell, 2006; Monaheng, 2007). Moreover, they do not focus on how teachers translate environmental education ideas into practice. This study addresses this perceived gap in the research and makes a contribution towards an understanding of whether and how LEESP curriculum change ideas are being implemented in geography classrooms in the model schools which participated in the LEESP school-based training workshops. It is hoped that the study will help to enable a deeper understanding of curriculum reform processes in a specific national context, that of Lesotho, where curriculum reform processes have been characterised historically by continuities rather than discontinuities (see Section 2.6).

### **1.7 Structure of the dissertation**

This dissertation consists of twelve chapters. In Chapter 2, I describe the national context of Lesotho to set the scene for the study. Chapter 3 explores the field of environmental and geographical education. It traces the evolution of environmental education from 1972 to 2005, when the Decade of Education for Sustainable Development (DESD) was launched. The chapter focuses on global influences on changing conceptions of environmental education both internationally and in the region of southern Africa. This is followed by an exploration of international trends and developments in school geography in relation to environmental education. I situate school geography in the evolving concept of environmental education in order to highlight possible ways in which changes in the concept may have influenced the current international understanding of geography. Such analysis is useful in terms of exploring the empirical field of the study (secondary school geography in Lesotho) against the background of international developments in the subject.

Chapter 4 positions the study within the field of curriculum theory in general, and critical theory in particular. I examine different curriculum paradigms, assessing their assumptions about knowledge and pedagogy in order to develop an analytical framework for engaging with the research questions of this study. Drawing on relevant literature, I examine theories of the curriculum policy-making process,

outlining international influences on curriculum reforms as well as contextual factors constraining curriculum change.

Chapter 5 concerns research methodology. It outlines and justifies the methods used in this research. It also describes the research process, outlining the procedures I followed to gain access to the research schools and documents. I describe the analytical tools employed, as developed from the work of Bernstein (1990, 1996, 2000). I also *reflexively* describe the strengths and limitations of these analytical tools and explain the kind of methodological decisions I made in responding to such limitations. The chapter also considers issues of validity, trustworthiness and ethics.

Having described the methodology used in this study in Chapter 5, I provide, in Chapter 6, an analysis of environmental education policy guidelines in Lesotho in response to the first research question of this study (see Section 1.5). In this chapter I examine the view of knowledge, teaching and learning as expressed in LEESP documents. I also attempt to uncover paradoxes and tensions implicit in the policy guidelines.

In Chapter 7, I explore the social processes of developing and disseminating environmental education under the LEESP, with a view to understanding issues of participation and contestation at the macro-level of curriculum policy development and implementation in Lesotho.

Chapter 8 provides an analysis of the junior secondary geography curriculum document, in which I explore the degree of congruence between environmental education and geography at the level of the curriculum document. In this chapter I also analyse the geography syllabus attachments introduced by LEESP, in order to identify changes made by the project to the substantive geography syllabuses for the junior secondary classes (Forms A, B and C). I use Bernstein's theoretical concepts of classification and framing to analyse the structure of the curriculum, focusing on the content and intended pedagogy, and compare these with the view of knowledge and pedagogy underpinning environmental education as conceptualised under LEESP.

Chapter 9 offers a content analysis of three geography textbooks that are intended to support the geography curriculum document. The purpose of this chapter is to further explore the nature of the interface between environmental education and geography at the first level of curriculum interpretation.

In Chapter 10, I present data generated through interviews with geography teachers in the research schools with a view to understanding how they interpreted environmental education in their specific contexts in relation to the LEESP intervention. I also examine contextual factors that may be constraining or enabling the intended change in school geography, as perceived by the teachers.

Chapter 11 analyses classroom observational data to generate insights into how geography teachers are enacting environmental education curriculum innovations into classroom practice, with a view to identifying any possible tensions between curriculum as **intended** and curriculum as **implemented**.

Finally, in Chapter 12, I reflect on the research methodology and theories used to conceptually organise and analyse the data. I also offer a synthesis of the research findings as reported in chapters 6, 7, 8, 9, 10 and 11, to provide a broad picture of curriculum policy construction, dissemination and implementation in the context of this study. I then explore possible explanations for the main observations and draw conclusions. The chapter further makes recommendations for realising curriculum policy intentions at the level of classroom implementation. Finally, I outline the limitations of the study and make suggestions for further research.

## **CHAPTER 2**

### **THE NATIONAL CONTEXT OF THE STUDY**

#### **2.1 Introduction**

In this chapter I describe the national context of Lesotho, highlighting unique features of the country, including the physical terrain, the changing political situation and aspects of the education system. I also provide a brief history of curriculum reforms in Lesotho from the period after independence up to the year 2001, when the Lesotho Environmental Education Project (LEESP) was introduced.

#### **2.2 Background to Lesotho**

The country is completely surrounded by South Africa, and this gives it no direct access to the sea to engage competitively in trade with other countries overseas. It is one of the least developed countries in southern Africa, and depends heavily on South Africa for its imports, which constitute the major share of the total goods needed in the country. It is a small country (about 30 000 km<sup>2</sup>) with a fragile mountain ecosystem vulnerable to soil erosion. It has a beautiful landscape characterised by high mountains and perennial rivers such as Senqu River (also known as the Orange River), which flows through South Africa and Namibia all the way to the Atlantic Ocean. The country has two distinct relief regions, namely highlands and lowlands. About two-thirds of the country comprises highlands, with a maximum altitude of 3 482 metres above sea level, at the summit of Thabana Ntlenyana, the highest peak in southern Africa.

The population is about 2 million, of which about 75% reside in the rural areas, depending largely on subsistence agriculture and remittances from Basotho migrant labourers working in the mining industry of South Africa (Lesotho Government, 2004). Typically, Lesotho has a temperate type of climate characterised by generally warm and wet summers, cold and dry winters with heavy snow falls in the highlands. This climate is influenced primarily by the country's latitudinal position (29° south and 30° east), its altitude, topography and continentality (Chakela, 1997). The country is mainly grassland, with soft and palatable grasses in the mountains. The natural vegetation is characterised by indigenous trees and shrubs concentrated in the

lowlands, with rich biodiversity. This vegetation was and still is the major source of fuel, especially in the rural areas where there is no electricity. Some exotic trees are also found, mainly in the lowlands.

Lesotho has a small mineral resource base, exporting diamonds to the international market. The country also exports wool and mohair, which generate income for farmers and the government. Other major sources of government revenue include royalties from the sale of water to South Africa under the Lesotho Highlands Water Project (LHWP), revenue from the Southern African Customs Union (SACU), and sales of textile products.

The society is generally homogenous in terms of language and ethnicity, except for a few minority groups such as Baphuthi, Indians and, lately, Chinese. It is generally a peaceable country, as is reflected in the Basotho greeting *Khotso*, which literally translates as “peace”. The peacefulness of the country is also reflected in the national motto, *Khotso, Pula, Nala* (peace, rain, prosperity), and reinforced by shared indigenous language, history and culture (Government of Lesotho, 2004). Sesotho and English are used as official languages.

### **2.3 The changing national context: imperatives for curriculum change**

In recent times there have been changes in the environment, economy and society, which all threaten sustainable development in Lesotho. These changes provide a context for understanding curriculum change in Lesotho, especially the kind of change envisaged in environmental education policy guidelines.

#### **2.3.1 The changing environment**

With the changing global environment resulting mainly from El Nino, as noted in the early 1990s, Lesotho has experienced serious droughts affecting the vegetation, agriculture and the flow of rivers, and thus threatening food security – especially in the rural areas where the majority of the population resides. Due to prolonged droughts and an increasing population, among other factors, land degradation has become the most serious environmental issue in Lesotho. In 1989 it was estimated

that soil losses resulting from erosion were 15 million tonnes and 23 million tonnes of soil from cropland and rangelands, respectively, per annum (Government of Lesotho, 1989). An increase in population has also exerted pressure on the vegetation, leading to a loss of biodiversity, and to excessive run-off, causing siltation in dams and rivers.

### **2.3.2 Changes in economy**

In the late twentieth century, economic problems – resulting mainly from the retrenchment of Basotho men from the mining industry in South Africa and declining agricultural production – have posed a serious threat to sustainable development in Lesotho (Government of Lesotho, 2004). The winding down of the first phase of the Lesotho Highlands Water Project (LHWP) towards the end of the last century resulted in a further increase in unemployment (Ministry of Education and Training, 2005). Such problems have contributed to rising levels of unemployment and poverty, with the unemployment rate estimated at 40 percent in 2000 (ibid.). Estimates show that the economic growth rate decreased by 4% from 1983 to 2002/03 (Government of Lesotho, 2006). The situation is expected to worsen as export rates and job prospects in the textile manufacturing sector become uncertain with the revision of the African Growth and Opportunity Act (AGOA). A projected sharp decline of 60% in SACU revenue in 2010/11 fiscal year, as the budget speech shows, could aggravate the economic situation in Lesotho, as this revenue constitutes the largest percentage of the national recurrent budget (Parliament of the Kingdom of Lesotho, 2010).

While the country was once known as ‘the granary of southern Africa’ (Government of Lesotho, 2004), this situation has changed over the years. Lesotho is currently experiencing a serious problem of food security, to the extent that it imports most foodstuffs from South Africa. In view of the extreme poverty in the country, the *Lesotho Poverty Strategy* recognises the need to conserve the environment for improved production (ibid). The severity of the poverty, as described in the *National Vision 2020*, is exacerbated by HIV/AIDS, which is seen as a multi-sectoral development issue with social, economic, and cultural implications (Government of Lesotho, 2004).

### **2.3.3 Social changes**

The *Education Sector Strategic Plan 2005-2015* outlines a number of social changes impacting negatively on education in Lesotho (Ministry of Education and Training, 2005). The increasing poverty levels have obviously had an effect on social organisation in Lesotho. Some children have difficulty attending school as their parents cannot afford the costs of secondary education. Many children have had to become heads of their families as they have been orphaned by HIV/AIDS. It is also recognised that the HIV/AIDS pandemic has had a far-reaching impact on secondary education, as it is claiming the lives of many teachers (ibid). In response to these social problems, the government has increased grants to assist children to pay for education, even though financial resources are limited. In 2004, the government introduced a textbook rental scheme for junior secondary education.

### **2.3.4 Political challenges**

Curriculum reforms in Lesotho, as is the case in other developing countries, may be understood in the light of changes in the global political economy. Since independence in Lesotho, there does not seem to have been much change in government ideology, despite changes in governments. Generally, the country has adopted a populist ideology (Ansell, 2002), in terms of which access to education has been a key guiding principle. The lack of ideological change may be attributed to international pressure and to the heavy dependence of the country on foreign aid to finance education (ibid.). After the Second World War, Lesotho was incorporated into the global political economy, as illustrated by the presence of international donor agencies shaping education policy in the country.

In the early 1970s foreign aid increased considerably when the then Basotho National Party (BNP) began to show little support for the apartheid policies in South Africa by hosting a large number of African National Congress (ANC) exiles (Ministry of Information and Broadcasting, 1996). Many such exiles worked as teachers, especially in the secondary schools. The World Bank and other international donor agencies such as UNICEF have shown interest in funding education in Lesotho. Other donor agencies such as USAID, IRISH AID and DANIDA have also become major

donors, with the last-mentioned focusing mainly on environmental education curriculum initiatives. As Niewenhuis (1996) notes, this foreign aid contributed significantly to expanding school infrastructure. It is estimated that in 1996 about 90% of the education budget for capital costs was financed through external donor funding (ibid.).

Although Lesotho is known historically as a peaceful place, in recent times the country has been facing challenges of political intolerance, and internal and cross-border stock theft has threatened the livelihoods of rural communities and relations with South Africa. Political unrest has disturbed the peacefulness of the country and threatened democracy. In the 1970s, political struggles over the elections resulted in terrorist attacks orchestrated by members of the armed wing of the Basotho Congress Party (BCP), which was operating from outside the country. The pressure from this armed wing gained momentum in the early 1980s. This pressure, combined with pressure from the then South African government for a change of government in Lesotho, contributed to the 1986 coup. The country came under military rule for seven years, during which time the Constitution was suspended.

The year 1993 saw some developments in the political landscape of Lesotho, when the first democratically elected BCP government assumed power. A new Constitution was put in place. Of particular relevance to this study is that the Constitution expressed the government's intention to introduce environmental education (see Section 3.6.2). It also expressed the intention to democratise education at all levels of learning. Section 28 of that document states that:

Lesotho shall make education available to all and shall adopt policies aimed at securing that education is directed towards the full development of human personality .... strengthening respect for human rights and fundamental freedoms. (Government of Lesotho, 1993, p.42)

This commitment was reiterated in the 1995 Education Act, which expressed the intention to adopt a learner-centred approach as a guiding principle for education. But the Act was contested by proprietors of church schools, who alleged that it gave the Minister of Education too much control over the operations of schools.

In 1998 the Lesotho Democratic Party (LCD), emerging from the BCP, won the national election. Barely two months later, after parliament had been constituted, opposition parties sought to contest the election results. The political turmoil that resulted led to the looting of shops and the distraction of building structures in the city of Maseru. This was a serious setback to the national development plan (Ministry of Education and Training, 2005).

These circumstances conduce to a broad national agenda for curriculum reforms, particularly those relating to sustainable development. But before describing attempts thus far to reform education in Lesotho, I shall outline the basic features of the education system.

## **2.4 Some key features of the Lesotho education system**

### **2.4.1 Traditional education**

Long before the country became a colony of Britain in 1868, there had been formal education in Lesotho, conducted in initiation schools for both boys and girls. The purpose of this form of education was to prepare boys and girls to manage their families and fit into society in their adult life. The core values were discipline, respect and loyalty. In this sense, education was underpinned by the ideology of social efficiency, wherein the goal is socialisation and maintaining social order (Schiro, 2008). Informal education for children occurred through spontaneous observation in the family and neighbourhood, and through interaction with the physical environment. Some of the key aspects of this education were knowledge of clan members and communication, promoted through riddles and folktales usually told by grandmothers in the evenings. Formal education was compulsory and free. “There was no shortage of teachers, for every competent adult served as a model and a teacher, and every elder was potentially a reference library” (Ministry of Education, 1982, p. 1).

There were also beliefs and myths that were intended to control children’s environmental behaviour. For example, killing a hammer-kop bird or destroying its nest was feared to cause lightning. Some of these belief systems and traditional practices still prevail, especially in the rural communities of Lesotho. I have argued

elsewhere that such forms of indigenous knowledge have the potential to promote environmentally responsible behaviour among learners, provided they are selectively documented and incorporated into the formal school curriculum (Raselimo, 2007; see also Mokuku & Mokuku, 2004).

#### **2.4.2 The contemporary formal education system**

The current education system in Lesotho is rooted in British colonial education, which was introduced in the early nineteenth century during the expansion of the British Empire. As was the case in other British colonies, it was implemented by church missionaries with the primary purpose of promoting reading skills and thus training clerks to assist with the administration of colonial rule. Some practical skills were also taught, “for the early missionaries were self-reliant, building and making most of their churches, homes and furnishings” (Ministry of Education, 1982, p.2). The missionaries’ interest in skills promotion is illustrated by the establishment of technical and vocational schools for both boys and girls in Thaba-Bosiu, Thabana-Morena and Quthing (Manyeli, 1994). However, as noted in the *Education Sector Survey Report 1982*, the promotion of skills – especially around the turn of the twentieth century – was not the primary emphasis in missionary schools: “the central purpose of schools was to develop Christian character, not to offer vocational training” (Ministry of Education, 1982, p. 2). Aspects of modernity featured strongly in this type of colonial education, and these are still current in the education system (Mokuku et al., 2005). The following quotation succinctly captures these elements of modernity:

For a period of approximately three hundred years, from the European Enlightenment until the middle of the present century [20<sup>th</sup> century], knowledge was primarily influenced by Rationalist thinking. Knowledge was thought to exist independently of individuals, it was out there, waiting to be discovered, it was objective and God-given. Therefore, there was one reality and with it came an arrogant certainty. (Sugrue, 1997, pp. 20-21)

As the quotation suggests, in this type of education knowledge flow is unilateral and vertical; knowledge is objective and not challengeable. The teacher is the authority in the classroom. This last aspect of modernity was reinforced by the traditional education of the Basotho, wherein, as mentioned in Section 2.4.1, an adult was

considered a source of knowledge. In this study, the question of how environmental education is shaping geography teachers' classroom practices towards a shift from teacher-dominated methods to a more learner centred approach supporting the visions of action competence is an important one.

Currently, formal education extends over twelve years, of which the first seven years comprise primary education, leading to a Primary School Leaving Certificate (PSLE), and the latter five years, secondary education. The first three years of secondary education (Forms A, B, C) constitute junior secondary education leading to the Junior Certificate (JC), and the last two years (Forms D and E) are for senior secondary education, which culminates in a Cambridge Overseas School Certificate (COSC) giving students entry into tertiary education. Schools that offer junior secondary education only are designated as secondary schools, whereas those offering both are referred to as high schools. There is no school offering senior secondary education only, even though some optional subjects may be offered at this level only.

The legacy of the colonial education system is evident in the management of schools, which is shared between government and churches, with the latter owning the majority of schools. In the mid-1990s, churches owned over ninety percent of primary and secondary/high schools (Ministry of Information and Broadcasting, 1996). However, the number of government schools has recently increased following the establishment of new schools from 2006 as part of the government policy to increase access to education. Other than government and church schools there are also community and private schools owned by communities and private individuals or organisations. Private schools generally charge higher fees as they do not receive financial support from government, and they generally offer a better quality education. There are many more private schools at primary education level than at secondary level, thus suggesting that learners go on to public secondary/high schools with different educational backgrounds.

The government pays teachers' salaries, even though responsibility for the appointment and transfer of teachers lies with school managers, who are representatives of the proprietor (i.e. the church). The government also provides school facilities and exercises control over the curriculum through the prescription

and provision of curriculum materials and administration of examinations for both primary and junior secondary levels. The COSC examination is largely controlled by Cambridge University in Britain. It is worth noting that Lesotho is the only country in southern Africa which is still using this examination. Attempts are, however, being made to localise examinations at the senior secondary level.

The government subsidises primary education, which is currently free and compulsory. It also provides subventions for public tertiary institutions and bursary loans for Basotho students enrolling for tertiary education. In addition, the government has introduced a subsidy for textbooks at the junior secondary level, following a policy decision to extend basic education up to this level (Ministry of Education and Training, 2005).

Community involvement in church and government schools is achieved through representation on school management committees. Schools fees, particularly at secondary education level, are paid by parents. However, with increasing poverty and growing numbers of orphans due to HIV/AIDS in recent years, the government through the Ministry of Education (MOET) has intervened by providing bursaries for needy children (Ministry of Education and Training, 2005). Because of the joint management of schools by government, churches and communities, in this study church schools, government schools and community schools are collectively referred to as public schools.

For the administration of examinations at primary and junior secondary level, there is a semi-autonomous institution known as the Examination Council of Lesotho (ECOL), which was established in 1989. Before then examinations at the primary school level were administered within the MOE. The National University of Lesotho was responsible for junior certificate (JC) examinations taken at the end of junior secondary education. ECOL is directly answerable to the Minister of Education and Training, and receives government subvention every year for its operational costs.

While the government determines the curriculum and ensures compliance through examinations, since as early as 1978 there have been concerns that there is an overemphasis on examinations, which emphasise memorisation of facts rather than

conceptual understanding (Kingdom of Lesotho, 1978). For example, a report emanating from the National *Pitso*, which came to be known as National Education Dialogue 1978, criticises the education system for classifying learners as failing or passing, without ensuring that they are equipped with skills (Kingdom of Lesotho, 1978). The 1992 *Educator Sector Development Plan* also describes the problem of over-emphasis on examinations:

The existing system of schooling suffers from critical problems including the decline of quality; lack of relevance to occupational and social realities; and lack of effective quality owing to the nature of final examinations below the level of the Cambridge Overseas School Certificate Examination and the absence of other means of determining pupils' achievement from the national level. (Ministry of Education, 1992, p. 4)

To this end, there have been policy recommendations that the examination system should be revised. However, as recent studies show, classroom teaching in Lesotho is still examination-oriented (Mokuku et al., 2005; Ntoi, 2007; Nketekete & Motebang, 2008). Such an emphasis on examinations is seen by some as posing a threat to the realisation of the transformational visions of environmental education (Mokuku et al., 2005). The extent to which examinations continue to shape teachers' classroom practice in junior secondary geography in Lesotho is discussed in chapters 10 and 11.

The national curriculum, especially at the secondary education level, is highly differentiated and separated into traditional subjects. This is reinforced by pre-service teacher education programmes which also focus on disciplinary knowledge as opposed to an integrated approach. In geography, for example, the teacher education programme at the National University of Lesotho encourages a split between human geography and physical geography, so that some students specialise in physical geography, for example, and take only a few courses in human geography. The organisation of the school curriculum into distinct subjects is seen by some environmental education practitioners as having the potential to constrain the implementation of environmental education (Raselimo, Mokuku, Jobo, Ramakhula & Roberts, 2008). Raselimo and his team argue that the complexities of the challenges that learners face in the Lesotho context require an ability to work across disciplines and employ interdisciplinary solutions to environmental problems.

## 2.5 Management of curriculum development and change

As stated in Section 2.4.2, the education system of Lesotho is highly centralised, with curriculum decisions being made at the level of central government through the Ministry of Education and Training (MOET)<sup>1</sup>. In 1980, the National Curriculum Development Centre (NCDC) was established to take charge of matters pertaining to the national curriculum for both primary and secondary education. More specifically, its functions (among others) are to:

- design and develop syllabuses in different subjects areas at both primary education and secondary education levels
- prepare instructional materials of various types used in primary and secondary levels
- carry-out pilot testing of curriculum materials in selected schools
- undertake evaluation research in order to establish the effectiveness of the curriculum in schools (NCDC Handbook, 1993, unpagged).

To perform these functions, NCDC is staffed with subject specialists in different areas, who are usually recruited from classroom teachers. The centre operates within the bureaucratic structure of the MOET. Table 2.1 shows key players in the management and implementation of curriculum, from the senior level of the MOET to the level of classroom practice.

**Table 2.1: Curriculum decision-making structure in Lesotho**

LEVELS OF INFLUENCE	CONTEXTUAL INTENTS	PROGRAMME GUIDED	LOCUS OF CONTROL	MANAGER RESPONSIBLE
1	Policy of Education for Development	National Education System	Ministry of Education	Principal Secretary For Education
2	Employment Further Studies Other Goals	Curricula	Ministry of Education	Chief Education Officer Curriculum
3	Individual Subject Syllabus Aims	Individual Subject Syllabus	National Curriculum Development Centre (NCDC)	Director of the NCDC
4	Individual Subject Unit Objectives	Individual Syllabus Unit	School Subject Department	Head of the School Subject Department
5	Individual Lesson Plan Objectives	Individual Lesson Plan	Classroom	Classroom Subject Teacher

Source: Nkoale (2005, p. 24)

<sup>1</sup>Following international trends and developments in education there was a change of name from Ministry of Education (MOE) to Ministry of Education and Training (MOET) at around the beginning of the new century.

As Table 2.1 illustrates, the structure of curriculum decision-making in Lesotho is hierarchical, with the Principal Secretary (PS) in the MOET being the top government official responsible for the development of education policy. Under the PS, there is Chief Education Officer (CEO) for curriculum services. With the approval of the PS, the CEO makes decisions on the formulation of new curricula, based on societal needs as expressed at level 2 of contextual intents. The CEO responsible for curriculum services supervises the activities of the National Curriculum Development Centre (NCDC), which include the development of syllabuses for various subjects at junior secondary level. In terms of the provisions of the NCDC handbook, the NCDC works with subject panels, which comprise representatives of key stakeholders including teachers, teacher educators in the relevant subjects and subject examination officers at the ECOL.

The syllabuses developed by NCDC are approved by the National Curriculum Committee (NCC) before they are implemented in schools. The NCC has a broad membership of heads of key stakeholder institutions, including educational secretaries of the three major churches in Lesotho (Roman Catholic Church, Lesotho Evangelical Church and Anglican Church of Lesotho), and chairperson of the association of schools' principals. The CEO for curriculum services is the chair of the committee, and the director of NCDC holds the position of secretary.

As the curriculum decision-making structure presented in Table 2.1 shows, classroom teachers are at the bottom of the hierarchy. Yet they are expected to implement the curriculum, to interpret and translate it into their daily lesson plans, under the supervision of heads of subject departments. As noted earlier in Section 2.4.2, the MOET retains control of curriculum implementation at the classroom level through examination standards, which often influence such curriculum decisions as teachers are able to make.

## **2.6 Curriculum reform landscape in Lesotho**

The end of British colonial rule in 1966 provided an impetus for curriculum reform in Lesotho. However, a review of official documents and literature suggests that the curriculum reform landscape in Lesotho is characterised by continuities rather than

discontinuities (Kingdom of Lesotho, 1978, 1982; Mosisili, 1981; Nketekete, 2001; Ansell, 2002; Muzvidziwa & Seotsanyane, 2002; Nkoale, 2005; Nketekete & Motebang, 2008). In 1967, for the first time in the history of education in Lesotho, a concerted attempt was made by the government of newly independent Lesotho to obtain local input in the revision of the existing syllabuses (Kingdom of Lesotho, 1978). The purpose was to address the weaknesses of colonial education (see Section 2.3) and design policies that would drive a new national vision for education.

However, between the years 1971 and 2000, curriculum policies intended to introduce reforms, particularly in secondary education, have received only partial implementation or have not been implemented at all. Examples of such reforms include the Education for Development Policy and the O' Level Localisation Reform. In this section I describe these policies, highlighting their intentions and how these intentions played out at school implementation level, with a focus on secondary education.

### **2.6.1 Education for development policy**

In 1971 the Minister of Education announced the Education Policy for Development as a response to the perceived limitations of the education system inherited from the colonial administration. This policy recognised the central role of education in Lesotho in achieving economic growth. As part of the policy-making process, ideas were solicited from Basotho in different walks of life, even at grassroots level through *lipitso* (public and open meetings), media and questionnaires. The process of consulting through *lipitso* started in October 1977 and ended in March 1978, during which period a total of fifty-one such meetings were held in different parts of the country (Mosisili, 1981). After this consultation process a National Education Dialogue was held in 1978 for further consultation.

The use of *lipitso* and national education dialogue as consultation strategies for curriculum policy-making reflects a populist ideology of curriculum reform, which takes into account the people's expectations of education (Ansell, 2002). It should be noted that in the culture of the Basotho people, the main traditional method of getting

public opinion at grassroots level is through lipitso (Mosisisli, 1981). This ideology is evident in the following remarks made by the then Prime Minister of Lesotho when he opened the national seminar that came after the National Education Dialogue of 1978:

It is true that plans in the past have tended to devolve on our technocrats, be they indigenous or foreign, and to have disregarded testing public opinion.... Now that we have tried our hand at planned development and achieved some modicum of success when we construct our plans... We hope that this seminar and the dialogue that preceded it will provide the opportunity for the people to share their opinions with us, and give us a good counsel for successful educational planning in Lesotho. (Chief Leabua Jonathan, cited in Mosisili, 1981, p. 35)

However, while this seminar may be seen as an appropriate strategy for ensuring stakeholder participation in the education curriculum policy-making process, Mosisili (1981) reports a dissenting voice from one key stakeholder group that had attended the seminar. He reports that during the closing ceremony of the seminar, one of the education secretaries of the church schools read a statement (which he suspects had been collectively prepared by the secretaries) disassociating themselves from the deliberations and any resolutions or recommendations of the seminar, alleging that it was a calculated move to take over the church schools. This event clearly demonstrates that education policy-making is not simply a procedural and consensual process, but it is political in nature (Bowe, Ball & Gold, 1992; Olssen, Codd & O'Neill, 2004; McKernan, 2008). Given that the churches in Lesotho own the majority of schools, the dissenting voice from the church representatives posed a direct threat to the successful implementation of curriculum reform.

Nonetheless, following the 1978 National Education Dialogue, an Education Sector Task Force was established by Cabinet to prepare a policy document that would guide education processes in Lesotho. Its terms of reference were to:

- review education policy
- examine the existing system of education and its role in the development of the nation, and
- propose long-term policies (Ministry of Education, 1982, p.iii).

This was a multi-disciplinary task force composed of Basotho nationals and external consultants from other African countries (ibid., p.iv). The report of this task force was

presented and adopted in 1982 as a policy document guiding education reform processes in Lesotho up to the year 2000. The document's policy statements for secondary education emphasised the need for the inclusion of more practical subjects, with the purpose of enhancing the quality of education and preparing learners for a meaningful life in a changing society with uncertain employment prospects. This was to be achieved through an integrated approach to the teaching of practical subjects. Integration was defined as linking conceptual knowledge with the practical experience of the learners (ibid.). Although there are no clear guidelines in the report on teaching methods in relation to the integrated curriculum, the interest in integrating the practical experience of learners could be seen as signalling a policy intention to shift towards a learner-centred approach in the formal education system of Lesotho.

Following the education for development policy, two major curriculum reforms were introduced in the education system of Lesotho, namely curriculum diversification reform and the core curriculum reform. In the following two sections, I describe these reforms and outline implementation challenges that were faced.

#### **2.6.1.1 The curriculum diversification reform**

This reform was initiated in 1974, with the purpose of introducing new practical subjects such as agriculture, technical subjects and home economics. The diversification programme was intended to achieve the goals of self-reliance through education with production, while at the same time not ignoring the goals of further education (Ministry of Education, 1982). As part of this programme, Development Studies was also introduced in some secondary schools in the early 1980s. Because of its practical component, this subject was seen to have the potential to bridge the gap between practical subjects and traditional academic subjects.

However, by the time of the 1993 evaluation report on the diversification programme, not much had been achieved in terms of the implementation of the programme at school level. It was reported that there were ambivalences regarding the underlying assumptions and expected outcomes of the curriculum diversification programme (Ministry of Education, 1993). The following quotation typifies the situation:

Whilst pupils have a positive attitude towards practical subjects, diversification appears to have had very little impact on their career aspirations or their subject preferences. Pupils lack information on what diversification can lead to, and how these practical subjects contribute to the quality of their secondary/high school education. (Ministry of Education, 1993, p. 2)

This may suggest that, probably as a legacy of the influence of colonial education, in the view of many parents and learners practical and technical subjects with their emphasis on vocational skills were inferior to the traditional academic school subjects. As Ansell (2002) notes, many parents saw vocational education as inappropriate in terms of preparing their children for lucrative white-collar jobs, towards which colonial education was geared. She further reports that newly introduced technical subjects did not receive the large-scale implementation that was intended because some school proprietors held the view that vocational skills could be provided through the existing practical subjects. In this regard, as Muzvidziwa and Seotsanyane (2002) argue, partnership ownership of schools between churches and government in Lesotho could be seen as posing a challenge to curriculum reform. The technical subjects which were intended to address the problem of skills shortages and unemployment, as I will show in the next section, were offered as optional subjects in secondary schools (see Table 2.2). While government has control over curriculum policy-making at the macro-level of the national education system, it does not have full control at the micro-level of implementation in schools.

In view of the ambivalences about the role of practical/technical subjects, the evaluation report on the implementation of the curriculum diversification programme recommended that the curriculum for each practical subject be revised, and –structured according to broad themes, rather than traditional topics, in order to promote links with other subjects in the school curriculum” (Ministry of Education, 1993, p. 3).

#### **2.6.1.2 The core curriculum reform**

One other important thrust of the education for national development policy was the reorganisation of the structure of the secondary school curriculum to increase efficiency and reduce costs in the operations of schools. The task force report observes that:

In many secondary schools and high schools there are a large number of separate subjects offered, even though the schools have relatively small enrolments. This leads to a very low utilization of specialised teachers and an overall pupil teacher ratio. Although educationally it may be desirable to offer many options to all pupils, in practice this becomes an extremely inefficient and expensive practice. (Ministry of Education, 1982, p.90)

Thus the task force recommended a core curriculum, as shown in Table 2.2, for junior secondary schools.

**Table 2.2: The structure of the secondary school curriculum in Lesotho**

English (language and literature combined)
Sesotho (language and literature combined)
Integrated Science
Mathematics
Social Studies (development studies or history/geography)
Either Religious Studies or an optional subject
Practical Studies/technical subjects (agriculture, commerce, handcrafts, metalwork, home economics etc.)

As shown in Table 2.2, the junior secondary curriculum structure emphasises English, mathematics and science over other subjects, with English being used as a medium of instruction, as is the case with other levels of education in the country. English is also a passing subject for all examinations. In terms of the provisions of the curriculum policy, these three subjects are allocated six periods a week in secondary and high schools (Ministry of Education, 1984). Geography, at both junior and senior secondary levels, is offered as an optional subject competing for curriculum space with other optional subjects such as development studies and history (see Table 2.2). As is the case with other optional subjects, it is officially allocated five periods a week, each lasting 40 minutes. In this regard, the following questions may be asked: what is the reasoning behind the government decision to allocate top priority status to English, mathematics and science? Whose interests are served by this policy decision?

Ansell (2002) argues that while the government's intention, by adopting this curriculum structure, was to address the limitations of colonial education, the structure still mimics key aspects of its colonial predecessor. Her argument

presumably rests on the observation that the structure paradoxically marginalises the practical subjects, which were intended to address the national goals of education with production. This paradox may reflect a tension between meeting the goals of further education through traditional academic subjects, and the need for promoting vocational skills. Why not create space for learners to follow different routes, so that those who decide to learn more vocational skills can take more practical subjects? It should be noted that the maximum number of subjects that a junior secondary school can offer is seven. It should also be noted that in church schools, which constitute the majority of secondary schools in Lesotho, as stated in Section 2.4.2, religious studies would not easily make way for an additional practical subject, for these schools were established primarily to promote Christian religious principles (Manyeli, 1994).

### **2.6.2 The ‘O’ Level localisation reform**

The need to localise the \_O’ Level curriculum and examinations has been a long-standing issue since the early 1960s (Ministry of Education, 1982; Nketekete, undated), when weaknesses in the Joint Matriculation examinations, which were administered in South Africa, were noted. This led to the decision in 1961 to adopt the Cambridge Overseas Schools Certificate (COSC), administered by Cambridge University. The issue re-emerged during the National Education Dialogue in 1978, when problems associated with the COSC curriculum in the context of an independent Lesotho were noted.

During the early 1980s alternative syllabuses in other subjects such as geography and science were produced, and put on trial in some schools around the mid-1980s. The production of these alternative syllabuses was a response to the localisation reform, also known as Five Year Programme (FYP), which was mooted in the National Education Dialogue of 1978. However, some implementation problems were encountered. The syllabuses remained in a trial stage until they were replaced by the current new syllabuses in 1999, due to poor coordination of curriculum activities and other factors (Raselimo, 1996; Nketekete, 2001). For geography, the trial phase of the alternative syllabus was not well coordinated. Schools could choose to offer it whenever they wanted, and could also opt out if and when its implementation proved too daunting.

In 1989 the marking of examination scripts was localised after the training of markers, but overall control still remains with Cambridge University. There has been concern over the fact that the curriculum has not changed, and that examinations are still set in Cambridge. In the 1990s, the issue of localisation of the O Level became the central focus of national conferences and seminars. The most important of these was the 1995 seminar, in which for the first time the meaning of localisation in the context of Lesotho was clearly articulated. The report emanating from this seminar defines localisation as follows: “*Localisation means taking charge and control of all activities and responsibilities over curriculum development and assessment*” (Ministry of Education, 1995, p.18) (italics in the original). As stated in this report, ~~the~~ major concern for this policy has always been the relevance and appropriateness or otherwise of the COSC to Lesotho’s educational and developmental needs” (ibid, p.iii). Relevance was defined in terms of national development needs, particularly making the curriculum more contextually relevant.

To achieve relevance as defined above, the seminar made the following recommendations regarding the goals and aims of secondary education in Lesotho:

1. Secondary education should be geared towards equipping students with knowledge, attitudes and skills which would enable them to adapt to changing situations;
2. Secondary education must instil and promote awareness, knowledge and understanding of environment, its importance to mankind, interactions with environment, care, protection and conservation of the environment (Ministry of Education, 1995, p.22).

Goal number 2 is particularly relevant to this study, in that it provides a clear mandate for the integration of environmental education into the secondary school curriculum. As was pointed out in Chapter 1 (see Section 1.3.1), this created an opportunity for geography to demonstrate its relevance to the national developmental needs of Lesotho, as it was identified as one the carrier subjects for environmental education.

As part of the implementation strategy, from around 1995 there was a comprehensive review of syllabuses in all subjects at junior secondary level with the purpose of

dovetailing the Junior Certificate (JC) curriculum with the O Level curriculum. The continuity between the JC and COSC was to be achieved through a spiral approach to curriculum organisation, treating the same topic at all levels but at different levels of complexity, as learners progressed through the school system up to Form E. Other strategies for implementation as recommended in the O Level localisation report include the training of examiners, and strengthening collaboration between key curriculum stakeholders, namely ECOL, NCDC, the Inspectorate, and teacher education institutions in Lesotho.

Although the strategies and plans that were to be followed in the implementation of the O Level localisation policy were clear, it is now fifteen years later and concerns regarding this issue, amongst both the education fraternity and the general public, are mounting (see *Lesotho Times*, 15<sup>th</sup> August, 2010). Curriculum review has only been done up to the JC level, and the old COSC syllabus, along with its now dated supporting textbooks, is still in use, and examinations at this level are still controlled by Cambridge University overseas. Although it is beyond the scope of this study, this situation regarding the O Level curriculum raises pertinent questions about curriculum reform in Lesotho. These include the following: What happened after the announcement of this policy? Why has it taken so long to implement such an important policy? Could this reflect scepticism about locally determined examinations which may not have international recognition?

Some reviews of the process of O Level curriculum localisation suggest that there are problems of coordination inherent in the education system of Lesotho. From his evaluation of curriculum development processes leading to the localisation after the 1995 policy intentions, Nketekete (2001) reports that there has been a lack of coordination among different stakeholders involved in curriculum policy making and implementation. He explains that this is mainly because there has been no clear vision to guide the whole process, and as a result curriculum development activities were not systematically conducted. He further indicates that this reform process has been forestalled by a lack of common understanding between NCDC and ECOL (key implementing agents) of what localisation really means in the context of Lesotho. This is the case despite clarification of the meaning of O Level localisation by the 1995 localisation policy, as stated earlier in this section. It would appear that there is a

tension between quality as defined in the localisation report and examination standards as conceptualised by NCDC and ECOL.

The review of curriculum reforms presented in this section highlights a common problem: tension between policy intentions and implementation. Despite professed government intentions to reform the education system since independence in 1966, little has been achieved at the implementation level. What emerges from the discussion is that certain new policies conflict with the career aspirations of students and parents. For example, the introduction of technical subjects did not increase learners' participation in these subjects as was expected, because of the way they were perceived by learners and some school proprietors. This was beyond the control of the government, as it does not have full control over church schools. Thus partnership ownership of schools by churches and government could be seen as one of the constraints on curriculum reform in Lesotho. In some cases, however, curriculum reforms fail to take root as expected not only because there is no cooperation, but also because of a lack of coordination of the reform processes. In the next section I show how these reforms may have impacted on school geography.

### **2.7 Possible influences on school geography: Threats and opportunities**

In the early 1980s, the adoption of the core curriculum structure depicted in Table 2.2 posed a threat to junior secondary geography. The introduction of development studies placed geography in a position of tight competition. Many schools dropped the subject (and history) from their curricula and opted for development studies, which was perceived to be more relevant to the national needs. The situation for geography was exacerbated by a drop in the number of students enrolling in it at the then National Teacher Training College (now Lesotho College of Education). It appears that at this teacher training college, development studies, introduced at around the same time (early 1980s), was interpreted as a replacement for geography and history. A shortage of geography teachers resulting from low enrolments at the only teachers' training college in the country, may have contributed to a further decline in the number of schools offering the subject at junior secondary level. It is exciting for me to note, however, that from 2006 to the present the number of schools offering geography at this level has been steadily increasing, following the establishment of

over a hundred new government schools which are all offering geography. According to the records of ECOL the number of enrolments for JC examinations has increased from 6 605 candidates in 2008 to 9 993 in 2010.

The year 1999 saw a significant development in junior secondary geography as the new geography curriculum was first introduced into schools. This curriculum was part of the O Level localisation reform referred to in Section 1.2.1. In line with the goals for secondary education, as set out in the *„O' Level Localisation Report*, subject panels of what were then referred to as carrier subjects for environmental education were mandated to develop specific syllabus goals reflecting the integration of environmental education. Geography was one such carrier subject. According to the draft curriculum document, the geography panel specified the following two general objectives, which explicitly express an intention to address environmental education:

By the end of the course students should:

- Have acquired knowledge about local, regional and global environment
- Be aware of and appreciate developmental trends and their effect on the environment (NCDC, 2001).

These objectives were retained in 2004 when the original draft curriculum document was revised and fully implemented in all schools. A critical analysis of this document, as part of an investigation into the extent to which environmental education has been integrated into the geography curriculum, is provided in Chapter 8 of this dissertation.

The story of geography as outlined in this section illustrates that while the subject has been facing what might be described as a relevance crisis, particularly in the 1980s and early 1990s, the localisation reform policy creates opportunities for the subject to demonstrate its relevance and compete more effectively with other subjects in the secondary school curriculum. This policy reform and the changing global and local environmental conditions as outlined in Section 2.3 make geographical understanding in Lesotho more relevant than ever before. However, this is dependent on how the professional geography fraternity interprets and translates these policy reforms into practice at school and classroom levels, in particular the LEESP curriculum policy intentions (see Chapter 6).

## 2.8 Conclusion

In this chapter I have provided a contextual background for understanding curriculum reform in Lesotho. I have outlined environmental, social, economic and political aspects of an agenda for curriculum reforms. Some key aspects of the education system have been described with a focus on traditional education, colonial and post-colonial education and their implications for the implementation of environmental education in Lesotho secondary education. The chapter has shown that, while some progress has been made to improve education after independence, attempts to reform the education system in Lesotho have been constrained by contextual factors. For example, despite the perceived need for vocational education, the number of children participating in practical subjects did not increase as expected due to various factors, including learners' aspirations and the expectations of parents regarding secondary education. There has also been a contradiction in curriculum reforms that were intended to drive education towards national goals for development. This contradiction surfaced in the core curriculum reform which was intended to strengthen practical subjects. Rather than creating more curriculum space for these subjects, the new curriculum structure remained fundamentally the same as the previous one and marginalised practical subjects by relegating them to the status of optional subjects.

The chapter has also shown that, while an attempt was made to ensure the relevance of secondary education through the localisation reform, there has been a problem with the coordination of reform activities, and a lack of common understanding of this reform among the key stakeholder institutions. However, the failure of this reform may not be attributed exclusively to a coordination problem, as there may be subtle tensions between localisation and the need for international recognition. Finally, the chapter has traced the history of junior secondary geography from the period after independence to the present, highlighting the threats and opportunities presented by the curriculum reform processes.

Based on the policy intention to integrate environmental education into the secondary education curriculum, expressed in the „*O' Level Localisation Report*, I contend that school geography has a significant role to play in enabling environmental learning

linked to national development goals in Lesotho. However, the extent to which school geography can contribute towards these broader national goals depends on, among other things, how well environmental education policy guidelines are disseminated (see Chapter 7), interpreted and enacted by the teachers (see chapters 10 and 11). In the next chapter I explore trends and developments in environmental education and school geography.

## **CHAPTER 3**

### **EXPLORING THE FIELD OF ENVIRONMENTAL AND GEOGRAPHICAL EDUCATION**

#### **3.1 Introduction**

In this chapter I review selected literature on trends and developments in both environmental education and school geography internationally, in the region of southern Africa, and in Lesotho. First, I examine the evolution of environmental education from 1972, when the first inter-governmental conference on the concept was held in Stockholm, up to 2005, when a Decade of Education for Sustainable Development was launched. In this examination I also consider, briefly, contestations regarding the meaning of sustainable development and the implications thereof for the implementation of environmental education. Secondly, I analyse curriculum developments in school geography, drawing mainly on literature from the UK, USA and Australia, to generate insights for the analyses of geography curriculum documents, textbooks and classroom practice in chapters 8, 9 and 11, respectively. This review will also provide a basis for comparing developments in Lesotho junior secondary school geography with developments in the subject with respect to the implementation of environmental education in other national contexts (see Chapter 12). I draw largely on British literature because the legacy of British colonial education is still evident in the Lesotho education system (see Section 2.4.2).

#### **3.2 The evolving concept of environmental education**

The evolution of environmental education is well documented in the literature, both internationally (Robotton & Hart, 1993; Gayford, 1996; Scott & Reid, 1999; Edwards 2006; Stevenson, 2007) and in the region of southern Africa (Irwin, 1990; O'Donoghue, 1993; Obol, Allen & Bach, 2003; Irwin & Lotz-Sisitka, 2005). Over the years since 1972, an understanding of environmental education has evolved from a relatively narrow conception of human-environment relationships to a more complex understanding of humans' interaction with all aspects of environment, including its biophysical, social, economic and political dimensions (O'Donoghue, 1993; O'Donoghue, 2007; Irwin & Lotz-Sisitka, 2005; Edwards, 2006). Its name changed

from nature study, to outdoor education, to environmental education, to education for sustainability (EfS), to education for sustainable development (ESD), as it was periodically reconceptualised internationally. In this section, I first outline global influences on the evolution of environmental education. Secondly, I review literature on sustainable development, highlighting the key debates on the concept. This is followed by discussion of methodological approaches to environmental education. Lastly, I consider the origin of the concept of action competence, and discuss its implications for educational practice.

### **3.2.1 Global influences**

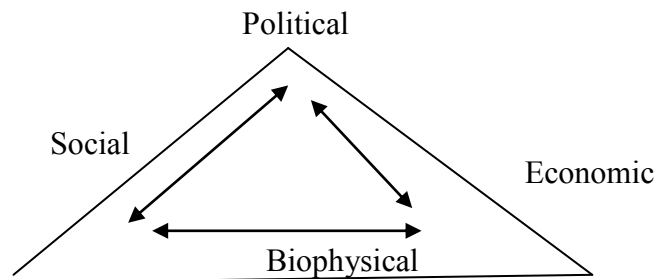
In the early 1970s, environmental education was equated to nature study, as it had a strong focus on environmental management (Irwin, 1990). It was then associated with subjects such as geography and science, which use the environment as a vehicle for teaching. It followed the tradition of ecology and fieldwork, emphasising education *about* the environment which was achieved through experiential learning *in* the environment. The key international influential events and documents during this early conceptualisation of the concept include the Stockholm Conference held in 1972, the *Belgrade Charter* and the Tbilisi Conference in 1977. The *Belgrade Charter* specified the goal of environmental education as follows:

To develop a world population that is aware of, and concerned about, the environment and its associated problems, and which has the knowledge, skills, attitudes, motivations and commitment to work individually and collectively toward solutions of current problems and prevention of new ones. (UNESCO, 1976, p.3)

Building on this charter, the Tbilisi Conference broadened the scope of environmental education to include the dimension of values. It made the following declaration:

Environmental education, properly understood, should contribute a comprehensive lifelong education, one responsive to changes in a rapidly changing world. It should prepare the individual for life through an understanding of the major problems of the contemporary world, and the provision of skills and attributes needed to play a productive role towards improving life and protecting the environment with due regard given to ethical values. (UNESCO, 1977, p.24)

The 1980s saw a significant shift in the focus of environmental education, with increasing attention being given to the political, social and economic dimensions of environmental issues. Figure 3.1 shows a model of this holistic view of the environment.



**Figure 3.1: A model of the environment**

Source: O'Donoghue, 1993

The biophysical dimension comprises living things and life support systems, upon which the other dimensions are based. In terms of this model, the environment does not only comprise the physical surroundings, but also the kind of political and economic decisions made about the utilisation of biophysical resources for achieving a sustainable society. This suggests that environmental issues should be seen as rooted in society and having political and economic dimensions. In Section 3.2.2 (see Figure 3.2), I describe a similar model of sustainable development posited by McKeown (2006).

The changing focus in environmental education has been marked by the appearance of important international documents such as the *World Conservation Strategy* of 1980, *Caring for the Earth* and *Our Common Future* (World Conference on Environment and Development, 1987). Following the publication of *Our Common Future* in 1987, environmental education embraced the idea of sustainable development.

### **3.2.2 The concept of sustainable development**

The concept of sustainable developed was first popularised by the World Conference on Environment and Development (WCED) through the publication of *Our Common Future*, also known as the *Brundtland Report*, in 1987. The report defined sustainable

development as ~~→~~ development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED, 1987, p. 43).

Subsequent to the WCED, the 1992 Rio Summit, through *Agenda 21*, endorsed the idea of orienting education towards sustainable development (UNESCO-UNEP, 1992). Chapter 36 of the *Agenda 21* provides a global framework for local action for sustainable development through education, as follows:

Education, including formal education, public awareness and training, should be recognised as a process by which human beings and societies can reach their fullest potential. Education is critical for promoting sustainable development and improving the capacity of the people to address environment and development issues. (UNCED-UNEP, 1992, unpagged)

This marked a shift to education for sustainable development (ESD), which focuses not only on describing environmental issues, but also on finding solutions to environmental problems. According to Calder and Glugstone (2005), ESD emerged as an alternative to traditional education, which fails to use the world systematically and recognise values and attitudes as critical components of learning. The initiatives for reorienting education towards sustainable development were strengthened by the 2002 World Summit on Sustainable Development (WSSD) in Johannesburg, South Africa. As Jickling and Wals (2008, p.4) note:

Throughout this period [from 1972 to 2002], with the assistance of numerous other conferences, concerted efforts have been made to transform environmental education into education for sustainable development.

Shortly after the WSSD, in December 2002 the UN declared a Decade of Education for Sustainable Development (DESD), which started in 2005. Inter alia, the decade aims to:

- Foster an increased quality of teaching and learning in education for sustainable development.
- Help countries to make progress towards, and attain the Millennium Development Goals (MDGs) through ESD efforts (UNSECO, 2005).

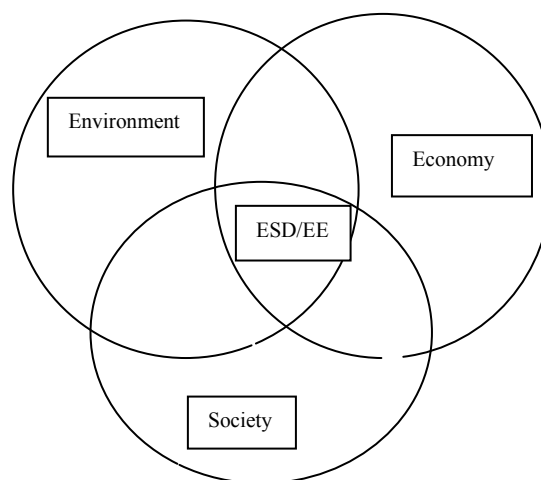
These aims are particularly relevant to this study's attempt to understand change in Lesotho secondary school geography following the introduction of environmental education. In the context of this decade, ESD is seen as transcending traditional education to encompass socio-cultural factors and socio-political issues of equity, poverty, democracy and quality of life (UNESCO, 2005). This suggests that, as Jickling and Wals (2008) argue, ESD should be seen as a new version of environmental education. In Lesotho, environmental education, as introduced by LEESP in 2001, was from the outset viewed in this broader sense, emphasising the biophysical, social, economic and political dimensions (see Section 6.5), and thus reflecting the key elements of ESD. For this reason, in the context of this study the terms EE and ESD may be used interchangeably.

While sustainable development, as defined in WCED (1987), became a driving force for curriculum transformation in UN member states, its meaning has been and still is fiercely contested, given the diversity of ideological positions with regard to what needs to be sustained and the role of education. Some scholars criticise the conventional meaning of sustainable development for promoting anthropocentrism, in terms of which the physical environment is valued only to the extent that it satisfies human needs (Fox, 1995; Bonnet, 1999; Postma, 2002; Bonnet, 2007). Others argue that the imposition of such values poses a risk of indoctrination (Jickling, 1992; Jickling & Sporks, 1998). In view of the anthropocentric values inherent in sustainable development as internationally conceived, Jickling and Wals (2008), writing from the context of North America, are opposed to the global trend to convert environmental education into education for sustainable development.

The lack of consensus on the meaning of sustainable development and the conversion of EE to ESD can be seen as reflecting a tension in the aims of sustainable development, as noted by Bonnett (1999). He argues that the ambiguity in the meaning of sustainable development lies in the fact that it brings together two conflicting aims, namely sustaining or conserving on the one hand, and development defined in terms of economic growth on the other (ibid). Hattingh (2005) succinctly describes the difference between the two different value positions underlying sustainable development:

In an anthropocentric framework, intrinsic value is reserved for humans; the natural environment is only given an instrumental value, meaning that it is valuable only insofar as it can benefit humans... In an ecocentric (or biocentric) framework, the natural environment... is given intrinsic value. (p.73)

These two broad value positions are reported to have caused a divide between the poor and the rich countries (the South-North divide), with the former caring more about the environment in terms of human survival (Sauve, 2005; McKeown, 2006; Stevenson, 2007). This suggests that learners should be exposed to different world views (Stevenson, 2007), for a holistic understanding of issues relating to environment, economy and society, as pillars of sustainable development (Hattingh, 2004; McKeown, 2006). Figure 3.2 portrays a much cited model of sustainable development, which shows how these three pillars interact in a sustainable society.



**Figure 3.2: A model of sustainable development**

Adapted from: McKeown et al. (2002)

Although this model may be criticised for leaving out technology and governance as other important pillars of sustainable development (Hattingh, 2004), it provides guidelines for designing environmental education programmes seeking to strike a balance between conflicting sustainable development values. As shown in Figure 3.2, education for sustainable development – or, in the context of this study, environmental education – lies at the intersection of the three pillars integrating issues of environment, economy and society (McKeown, 2002, 2006). This suggests that an environmental education programme designed according to the imperatives of sustainable development needs to promote not only basic knowledge about the three

pillars of sustainable development, but also about how they interact to bring about sustainability in a society confronted with environmental, economic and social issues. An understanding of such interaction can aid the process of decision making with respect to the use of environment.

Based on the model of sustainable development shown in Figure 3.2, McKeown (2006, p.286) proposes a framework for reorienting education to address sustainability. This framework has five components that relate to the three pillars of sustainable development. These are knowledge, issues, skills, perspectives and values, which, as McKeown suggests, must be addressed in a formal school curriculum designed around the goals of sustainable development.

*Knowledge:* the knowledge component recognises that people need basic knowledge in the natural sciences, the social sciences and the humanities, because sustainable development encompasses environment, economy and society. McKeown (2006) suggests that, although there is a challenge in selecting knowledge that will address sustainability goals in specific national contexts, curricula geared towards sustainability need to include not only knowledge based on traditional disciplines but also indigenous and traditional forms of knowledge.

*Issues:* the framework recognises the importance of including relevant local and global environmental, social and economic issues that are threatening the sustainability of the planet. McKeown (2006) acknowledges the challenge of attempting to teach all the issues associated with the global *Agenda 21*, and suggests that the choice of issues should be based on appropriate representation of the three pillars of sustainable development.

*Skills:* this component of the framework focuses on practical skills and psycho-social abilities that prepare learners for a meaningful life in society. Examples of practical skills that learners should learn include preparing materials for recycling, managing waste and resources, and interacting with their environment (McKeown, 2002). Citing McLaren, McKeown (2006) argues that these skills are just as important as the ability to communicate effectively, the ability to think critically about value issues, the

capacity to move from awareness to knowledge to action, and the capacity to develop an aesthetic response to the environment.

*Perspectives:* this component stresses the need for learners to consider issues from viewpoints other than their own, as this leads to the intra-national and international understanding necessary for achieving sustainable development.

*Values:* the values dimension is linked to the *perspectives* component in that understanding values, as McKeown (2006) argues, is an essential part of understanding our own and other people's viewpoints. She recognises that teaching values in public schools is a contentious issue as values are highly contestable, especially in the United States of America where there is high parental involvement in education. She proposes that curriculum developers draw on the *Earth Charter* as their starting point, a document that identifies common values such as respect for nature, universal human rights, economic justice and peace.

This framework provides a thinking tool for analysing environmental education programmes oriented towards sustainable development. I work with it to develop an analytical tool for the analysis of the LEESP policy documents in Chapter 6.

### **3. 2. 3 Approaches to environmental education**

With respect to methodologies, the focus in environmental education has shifted from behaviourist approaches supporting education *about* and *in* the environment, to constructivist approaches supporting the agenda of education *for* the environment, informed by critical pedagogy (Fien, 1993; Huckle, 1993; Robottom & Hart, 1993; Gayford, 1996; Lee & Williams, 2001; O'Donoghue, 2007). As Lee and Williams (2001) note, the distinction between these three perspectives was first popularised by Lucas in the early 1980s, though education for the environment, as I will show in forthcoming sections, became popular with the emergence of the sustainable development discourses in the late 1980s and early 1990s.

### **3.2.3.1 Education about the environment**

Fien (1993) makes a distinction between two types of education about the environment, which differ in their knowledge assumptions. First, conservative education about the environment emphasises content based on technical rationality, which promotes human-centred environmental values and a belief that environmental problems can be addressed through science and technology. A second type is liberal education about the environment, which seeks to promote enquiry learning and encourage deeper thinking and problem-solving (ibid.). Fien notes that this form of environmental education is also techno-centric, promoting the view that an understanding of environmental issues can be gained through environmental audits, impact assessment and scientifically proven environmental management practices.

As initially conceptualised, education about the environment (in its two versions) is primarily concerned with knowledge or understanding, and includes development of the technical skills needed for obtaining that understanding (Lucas, cited in Lee & Williams, 2001). This approach characterised environmental education in its early stage of evolution, when the thinking was that “environmental problems may be solved through technical and applied sciences [informed by behaviourism] without changing the status quo” (ibid., p.222). It evinces “little consideration for the environment as a social construct or of the social contexts or implications of the changes in people-environment relationships” (Fien, 1993, p. 41).

### **3.2.3.2 Education in or through the environment**

As indicated in Section 3.2.1, education *in* the environment is an approach that supports the goals of outdoor education, which emphasises learner-centred experiential learning in the environment (Fien, 1993). As Lee and Williams (2001) note, unlike education about the environment, which is situated in the technical paradigm of learning, education *in* the environment has a practical orientation as learners may be engaged in direct observation and practical activities in the field. These learning paradigms are discussed in detail in Chapter 4 (see Section 4.4).

It is argued that, as is the case with education about the environment, this form of environmental education is still concerned with behaviour modification (Gayford, 1996). It is based on the technical/linear assumption that environmental knowledge

and technical skills plus attitudes will lead to responsible environmental behaviour (Robottom & Hart, 1993). The critics of this linear assumption argue that the approach inhibits constructive learning through social interaction and engagement with the environmental situations that learners encounter (Robottom & Hart, 1993; Fien, 1993). Another criticism levelled against this approach is that, although effective learning may be achieved through field observation, it ignores “politics, conflict and power” (Huckle, cited in Fien, 1993, p. 43), the political dimension of environmental education.

### **3.2.3.3 Education for the environment**

Education for the environment is concerned with promoting action for the environment. One of its objectives, as stated in Fien (1993), is to promote moral and political awareness, knowledge, commitment and skills that will enable learners to participate in the process of environmental decision-making and problem-solving. Within the framework of education for the environment the curriculum is designed:

to increase pupils’ awareness of the moral and political decisions shaping the environment and to give them the knowledge, attitudes and skills which help them to form their own judgements and to participate in environmental politics. (Huckle cited in Fien, 1993, p.43)

Seen in this manner, it is clear that, unlike the other two approaches, which emphasise knowledge and skills, this approach is empowering, building learners’ capacity to critically engage with environmental issues and take action for the environment. As Fien (1993, p. 43) writes, it “represents an integration of a socially critical orientation in education and ecosocialist environmental ideology”. By taking a critical stance in dealing with environmental issues, education for the environment has a socially transformative agenda. Citing Huckle, Stevenson (2007) points out that education for the environment treats environmental problems as symptoms of a larger problem in our society. As such, teachers need to encourage learners to critically analyse the root causes of environmental problems, rather than focusing only on the effects. But as the literature suggests, education for the environment has the limitation of continuing to promote anthropocentric values (Fien, 1993).

The approach of education for the environment, as discussed in this section, echoes the vision informing the notion of action competence, which became influential in

environmental education in the 1990s, especially in Denmark and other Scandinavian countries (Mogensen & Schnack, 2010). In the next section, I describe action competence in order to establish a theoretical context for understanding the implementation of environmental education within secondary school geography in Lesotho.

### 3.2.4 Action-competence and related concepts

Action competence originates from the German Tradition of *Bildung*, which is a particular form of liberal education common in Eastern Europe (Jensen & Schnack, 2006; Mogensen & Schnack, 2010). It comprises “an analysis of environmental problems and an idea of education as something more than ... behaviour modification” (Jensen & Schnack, 2006, p.471) – which was how environmental education saw its role in its early stages of evolution. Jensen and Schnack (2006) propose that action competence should be understood as an alternative to the traditional science-oriented approach to environmental education that actually serves to support the status quo. It should be seen as:

a kind of socialisation that is different from pure adaptation to existing conditions, but instead ... emancipates people to become political subjects – and not just the objects of control and guidance exercised by other people’ (quotation marks in the original). (Hellesnes cited in Mogensen & Schnack, 2010, p. 61)

Mogensen and Schnack (2010) argue that action competence is an educational ideal that:

- is critical of moralistic tendencies in environmental education and health education;
- emphasises the educational aims of environmental education and health education, instead of reducing education to a technical means to solve certain political problems;
- works with democratic and participatory ideas in relation to teaching–learning;
- conceives of environmental education and health education as problem-oriented and cross-curricular, even holistic, without losing interest in academic knowledge and fundamental concepts;
- regards environmental problems as societal issues that involve conflicting interests. (Mogensen & Schnack, 2010)

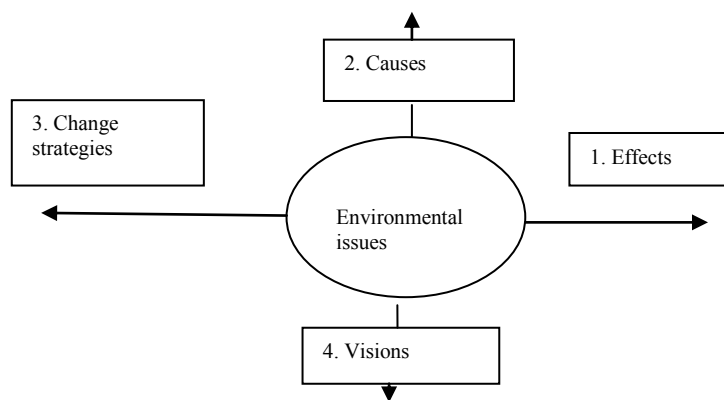
Action competence is informed and committed, empowering individuals to act on their own convictions rather than just comply with norms or imitate others. It reflects

a radical paradigmatic shift from behaviour modification, to a more critical, reflective and participatory approach in terms of which learners are equipped to cope with future environmental issues (Breiting & Mogensen, 1999).

A close look at the above defining features of action competence also suggests that most environmental activities going on in the schools – where learners, for instance, pick up litter or clean toilets as part of the Friday manual work, or participate in national tree planting days – may not qualify as indicators of action competence. Such activities can only be described in terms of action competence when they emphasise learning, since the most important thing is what children learn from participating in activities (Chadwick, 2000; Stevenson, 2007).

Jensen and Schnack (2006) make a distinction between an *activity* and an *action*, explaining that the former involves change-oriented activities that are addressed to solutions of the problem which is being studied, whereas the latter does not address the root causes of the problem but focuses only on the symptoms. They also distinguish between *direct action* and *indirect action*; that is, actions that directly contribute to solving an environmental problem at hand, and actions whose purpose is to influence others to take action for the environment, respectively. In the school context this means that when students voluntarily decide to switch off lights whenever they leave the classroom they are taking direct action towards energy conservation. Conversely, when students develop posters to alert members of the community to the problem of water pollution they are taking indirect action.

Jensen (2000) has developed an action-oriented model that can be used to guide an analysis of learners' environmental activities and actions, particularly as suggested in curriculum materials. This model is shown in Figure 3.3.



Source: Jensen (2000, p.229)

**Figure 3.3: Four dimensions of action-oriented knowledge**

As the model shows, there are four dimensions to action-oriented knowledge. The first is *knowledge about the effects* of environmental problems, for example, the consequences of soil erosion. Jensen (2000) explains that this basic knowledge is important because it lays the foundation for a willingness to take action. He cautions, however, that focusing on this type of knowledge alone may lead to action paralysis. The second dimension is knowledge about the *root causes* of environmental problems, which on its own also does not promote action. Limiting learning activities to this dimension may also result in worry and action paralysis. The third dimension, *knowledge about change strategies*, refers to knowledge of both how to control one's environmental behaviour and how to contribute towards changing conditions in society for the better. This knowledge is empowering as it enables learners to understand and transform surrounding structures associated with the existence of environmental problems and issues. The last dimension, *knowledge about alternatives and visions*, enables learners to develop their own vision regarding environmental issues and problems, by drawing on best practices in other national or community contexts. Jensen (2000) suggests that this knowledge dimension can be a strong source of inspiration for sustained action for the environment.

As the model illustrates, learners develop the capacity to take action for the environment as they move through learning experiences that encourage them to apply the four dimensions of action-oriented knowledge. The model seems to combine the three approaches to environmental education described above in Section 3.2.3. I use this model, along with other analytical frameworks, in chapters 8 and 11 to analyse

geography curriculum documents and classroom observational data, with a view to identifying aspects of teachers' pedagogical approaches that promote action competence.

### **3.3 The history of environmental education in the southern Africa's region**

The global influences outlined in Section 3.2.1 adumbrate a context for the development of environmental education in the southern Africa's region. As Irwin (1990) notes, in some countries in the region environmental education in its modern sense was first conceptualised in the early 1970s, with a strong focus on the conservation of natural resources. He observes that in South Africa non-governmental organisations and state conservation agencies, such as the Wilderness Leadership School and the Wilderness Society of Southern Africa, played a major role in the practice of environmental education. He further notes that the nature conservation dimension was reinforced through school field trips to nature reserves. This strong focus on nature conservation is also evident in other southern African countries such as Botswana (Kethloilwe, 2007).

The conceptualisation and practice of environmental education in the region have also been stimulated by regional organizations, such as the Environmental Education Association of Southern Africa (EEASA) formed in 1982, the Regional Environmental Education Programme (REEP), and the Wildlife and Environment Society of South Africa (WEESA). Through conferences and publications of its bulletin and journal, EEASA has created a forum for debating and sharing environmental education practices in the region.

Influenced by socially critical orientations in other parts of the world, especially in Australia (Fien, 1993), environmental education in southern Africa embraced a new focus on social change and critique in the early 1990s (Lupele, 2002). O'Donoghue (1993) questioned the prevailing modernist assumptions in the region, arguing that they are based on a flawed assumption that providing experiences of nature and communicating conservation messages would promote the necessary change to resolve environmental concerns. He therefore proposed the adoption of more reflexive action-oriented strategies that would transform societies. Similarly, from examining

the ideologies underpinning environmental education, Le Grange (2002) explores the possibilities of and constraints upon environmental education to address environmental problems in southern Africa. He argues that, to avoid the status of a “peripheral pedagogy”, environmental education should be liberated from the ideological burden of its common definition (ibid.,p.83). This shifting conceptualisation of environmental education highlights the importance of a learner-centred pedagogy, supporting a transformative agenda of education *for* the environment and action competence.

Learner-centred approaches informed by socially critical orientations (to be discussed in detail in Chapter 4), along with the goal of sustainable development, seem to have influenced environmental education policy development processes in the region of southern Africa since the late 1990s and the beginning of the new millennium. In summarising environmental education policy processes in southern Africa, Obol, Allen, Springhall & Bach (2003) note that there has been a strong international donor influence on environmental education policy development, particularly in the late 1990s and the early 2000s. In countries such as Namibia, South Africa and Lesotho, Danish International Development Aid (DANIDA) has been the major funding agency to support the integration of environmental education into the formal school curriculum, with particular attention to the professional development of curriculum advisors and teachers (Lotz-Sistka, 2004; Monaheng, 2007). The intervention of DANIDA has undoubtedly contributed to an understanding of the notion of action competence in the region.

However, despite all these initiatives, there has been little success in environmental education processes since the Rio Earth Summit in 1992. As noted in the Gaborone Declaration, environmental learning is often poorly understood by educators, resulting in simplistic curriculum activities and prescriptive learning experiences (EEASA, 2002). To address this situation, EEASA has made a number of recommendations to guide environmental education processes in the region. One of these calls for support for environmental learning processes that reflects a commitment to action and to fostering action competence through contextual, open-ended inquiry and issue-based approaches to learning (ibid.). These learning outcomes cannot be achieved in a

prescriptive learning environment, where learners are told what to do without being encouraged to critically reflect on local and global environmental issues.

### **3.4 Environmental education in Lesotho**

In this section I first provide an historical background for environmental education in Lesotho. Secondly, I trace the policy trajectory for environmental education from 1967 to 1997, when the Lesotho Environmental Education Support Project (LEESP) was first conceptualised.

#### **3.4.1 Historical background**

Ansell (2006) suggests that environmental problems in Lesotho, particularly the problem of land degradation, may be understood in their historico-political-economic context. Making use of the work of Gay et al. (1995), he asserts that the quality of the environment started to decline in the nineteenth century when the Basotho people were pushed into the fragile mountainous area as colonial settlers encroached on their fertile land to the west. This created a scarcity of arable land, compelling some people to use marginal land for the cultivation of crops. The problems became acute in the late nineteenth century, when Basotho men found an alternative livelihood by working as migrant labourers in the mines of South Africa (Turner, 2001; Government of Lesotho, 2004). According to Ansell (2006), what this meant was that people in general felt little need to look after the land. These historical factors, combined with other issues such as rapid population growth, can be seen as the root causes of land degradation in Lesotho.

Since independence there have been nature conservation movements spearheaded by non-governmental organisations and the Ministry of Agriculture through its Department of Forestry and Soil Conservation (now the Ministry of Forestry and Soil Conservation). In 1970 the Sehlabathebe National Park was established as a national strategy for the conservation of biodiversity. Nature conservation initiatives were reinforced by the establishment of more nature reserves under the Lesotho Highlands Water Project (LHWP) during the mid-1990s. This in turn created opportunities for schools in Lesotho to engage learners in experiential learning in the field. Drawing on

experience, I note that it has been common practice for many secondary schools in Lesotho to conduct field excursions to nature reserves, especially in South Africa, at least once every other year. Such field trips are usually organised by geography teachers, though teachers of other subjects are sometimes also involved.

At community and school levels, environmental education movements and centres such as the Lesotho Environmental Information Network (LEINET), the Masianokeng Environmental Centre, and the Geographical and Environmental Movement (GEM) have been playing a major role in promoting environmental awareness. In particular, the Masianokeng Environmental Centre serves as an environmental awareness centre for schools. It focuses on environmental management activities such as paper recycling. GEM is a network of secondary school teachers, and its activities include sensitising other teachers and school learners to environmental issues. Another recent development is a formation of an Eco-Schools movement funded by UNESCO through the Ministry of Education and Training (MOET).

### **3.4.2 Policy trajectory for environmental education in Lesotho**

Mokuku (1999) outlines the history of environmental education in Lesotho, tracing it to as far back as 1967, when an *ad-hoc* committee of Basotho educationists met to interpret the meaning of primary school social studies. Their interpretation of social studies led to the adoption of environmental studies as an umbrella subject, integrating a number of other subjects such as geography and science. Mokuku argues that the adoption of environmental studies as an integrated subject represented a shift from subject-orientated education to a child-centred approach. He further observes that, as early as in 1967, ~~the~~ environment [in Lesotho] was understood to be about more than just the *biophysical* knowledge..”. (italics in the original) (ibid., p.371). However, these early thoughts about environmental education remained on the periphery of mainstream formal education, since before the late 1990s there was no evidence of the existence of environmental education programmes to assist learners to respond to local environmental problems (Mokuku, 2002).

In the late 1980s and throughout the 1990s, however, there were policy initiatives intended to support the integration of environmental education into both formal and

non-formal education programmes. I will not go into detail about developments in the non-formal education sector, since this is not the focus of my study. In 1989, a *National Environment Action Plan* (NEAP) was developed to provide a framework for the incorporation of environmental considerations in economic development. The first draft of this document emerged from the International Conference on Environment and Development which was held in Maseru in April, 1988, a year after the publication of *Brundtland Report*, which defined the concept of sustainable development. This draft is reported to have been circulated to the districts in order to solicit further inputs from the Basotho people. The NEAP identifies the following as Lesotho's main environmental problems: overstocking and range management, resulting from, among other factors, population growth; soil erosion and loss of soil fertility; the use of hazardous agricultural chemicals; the loss of natural and cultural heritage through unplanned urban expansion and settlement; and pollution (Government of Lesotho, 1989).

As part of the national commitment to implementing *Agenda 21*, policy statements calling for the integration of environmental education surfaced in a number of policy documents during the 1990s. These include the *Clarification of the Aims of Basic Education 1992*, the *Lesotho Constitution 1993*, the *Report of the National Seminar on Lesotho Secondary Education Localisation of the „O' Level Curriculum 1995*, and the *Lesotho Vision 2020* (see Section 1.3.1). As mentioned in Chapter 1, these documents provided a broad national agenda for curriculum reform processes geared towards sustainable development. In particular, section 36 of the Constitution provides a mandate for the integration of environmental education as follows:

Lesotho shall adopt policies designed to protect and enhance the natural and cultural environment of Lesotho for the benefit of both present and future generations and shall endeavour to ensure to all citizens a sound and safe environment adequate for their health and well-being. (Government of Lesotho, 1993, p. 45)

Subsequent to this statement, in 1994, the government established the National Environment Secretariat (NES) under the office of the Prime Minister (now the Ministry of Tourism, Culture and Environment) to coordinate the activities of the National Action Plan (NAP) in implementing *Agenda 21*, emanating from the 1992 Rio Summit. The NAP identifies environmental education as a priority area to be included in formal education at all levels.

The 1995 *O'Level Localisation Report* explicitly recommended the integration of environmental education into the secondary school curriculum (see sections 1.3.1 and 2.5.2). The year 1997 saw another important milestone in the history of environmental education in Lesotho, when the government introduced the *Lesotho Environment Policy 1997*, which draws on NEAP of 1989. This document recognises the important role of formal education in promoting environmental education. Section 4.26 advocates the introduction of environmental education into formal education at all levels, and recommends strengthening the National Curriculum Development Centre (NCDC) to enable it to coordinate the implementation of EE as one of the strategies towards achieving the goals of sustainable development in Lesotho.

The *Lesotho Vision 2020* also identifies as areas of national concern the deteriorating quality of the environment, increasing levels of unemployment resulting from the retrenchment of Basotho from the mines of South Africa and diminishing employment prospects in agriculture, HIV/AIDS, and an unstable democracy (Government of Lesotho, 2004). The document accordingly calls for developing a curriculum that responds to these national development priorities: “Environmental education will be integrated at all levels of learning” (ibid., 8).

The policy initiatives outlined in this section clearly reflect Lesotho’s commitment to introducing environmental education as part of the formal school curriculum. To support these initiatives, the Lesotho government in collaboration with the Danish government implemented the Lesotho Environmental Education Support Project (LEESP) in 2001. In Chapter 6 I analyse environmental education curriculum reforms as conceptualised under this project.

### **3.5 International trends and developments in school geography in relation to EE**

International trends and developments in environmental education, as presented in Section 3.2 of this chapter, seem to have had an influence on education in general, and school geography in particular, even though an environmental dimension in school geography can be traced back to a period long before environmental education emerged as a formal concept. In this section I trace changes in the content and

pedagogy of secondary school geography, and relate these changes to the evolving concept of environmental education.

### **3.5.1 Changes in the traditions of secondary school geography**

During the past century and in many parts of the world, the subject of geography has undergone changes in content and pedagogy, in response to curriculum reform and competition from other subjects (Unwin, 1992; Marsden, 1997; Kent, 2002; Rawling, 2001; Lipovšek, 2003; McInerney & Shepherd, 2006).

In the United States and in Britain, and most of the British former colonies, geography was for decades dominated by the regional tradition, which focuses on natural regions of the world, emphasising spatial differentiation. The regional approach uses the methodology of descriptive fieldwork, which focuses on the direct observation and recording of geographical phenomena in the environment under the close guidance and explicit exposition of the teacher (Kent, 2002; Lai, 2006). The regional approach, with its fieldwork tradition, was criticised for lacking intellectual challenge, encouraging memorisation of facts (Boardman & McPatland, as cited in Kent, 2002, p.4), and taking a narrow view of environmental determinism (Marsden, 1997). From the perspective of this approach, human activities are seen as largely influenced by environmental factors, with little concern for human impact on the environment (Huckle, 2002). For example, the study of climate regions would be organised such that human activities would be covered after identification of the climate characteristics, without showing how human activities might cause climate change. Tabulawa (2002) observes the dominance of this approach in the old geography syllabus for secondary schools in Botswana. The question of the extent to which the new junior secondary geography syllabus in the Lesotho curriculum represents a shift from this approach is addressed in Chapter 8.

In view of the limitations of the regional tradition, Kent (2002) notes that in the 1960s the content of geography shifted towards ‘new’ geography, which emphasised a spatial tradition using a scientific approach. The major impetus for this shift, particularly in the UK and USA, came from developments in academic geography, which inspired a new generation of teachers to change (ibid.). Within the spatial

tradition, geography is defined as the study of the spatial distribution of geographical phenomena (Pattison, 1990), be it human population, minerals, landforms or vegetation. This tradition supports education *about* the environment by emphasising knowledge of scientific facts, often transmitted through descriptive-didactic methods (Kent 2002). The spatial tradition also employs a scientific spatial methodology in analysing environmental issues, with an emphasis on “measurable data of a discrete world, collected by experts who know their measurement techniques” (Chalmers, Keown & Kent, 2002, p. 319). According to Chalmers et al., this reflects a somewhat narrow perspective on ecology.

The spatial scientific approach employs a fieldwork methodology characterised by hypothesis-testing and quantitative data analysis (Kent, 2002; Lai, 2006). As Lai (2006) notes, this positivist approach had a considerable influence upon the school geography curriculum and fieldwork practice, especially in English secondary schools. But the approach was criticised by humanistic geographers, who argued that students were given little opportunity to express their subjective feelings about places and events, the outcomes of fieldwork activities being in a sense pre-determined (Lai, 2006).

In the early 1980s, with the emergence of critical geographers, notably John Huckle (1985) in the UK, followed by Fien and Gerber (1988) in Australia, geography adopted an issues-based inquiry approach, promoting problem-solving, decision-making and critical thinking skills (Unwin, 1992). In criticising the notion of determinism, which dominated the regional and scientific approaches, Huckle (2002, p. 256) writes as follows:

Environmental determinism and natural regions taught [learners] to accept a society shaped and limited by nature, while economic determinism taught them to accept the social relations of capitalism as normal and inevitable. Separation of physical geography from human geography taught them a false separation of nature and society, while the subject’s view of progress reinforced the modern faith in technology and bureaucracy.

Huckle (2002) envisaged a shift in geography from the “legacy of stereotyping” (ibid., p.256) to a critical geography embracing ideological critique of sustainable development in the context of existing power imbalances (i.e. between North and

South) in the utilization of natural resources. He is opposed to a fragmented approach in school geography where physical geography is taught separately from human geography, thereby denying the learner an opportunity to develop a holistic view of environmental and sustainability issues.

Inspired by the work of John Huckle, Fien and Gerber (1988) identified the following ideals and skills to be promoted through a socially critical geography:

- a reverence for the earth and all its creatures
- the protection of the environment as a precondition of a healthy society
- a willingness to share the world's wealth fairly among all its inhabitants
- the protection of the resource rights of future generations
- a rejection of socially unjust and environmentally wasteful practices  
in mining, manufacturing and consumerism
- development of non-nuclear energy policies based upon conservation,  
greater efficiency and renewable sources of energy
- open participatory democracy at all levels of society.

Thus geographers came to realise the need to promote affective learning to inculcate environmental values and attitudes. This could be seen as representing a shift from the human-centred and Eurocentric values that had characterised geography from the era of industrialisation. The intention to promote these environmental values reflects geography's transformative agenda (Huckle, 2002; Kent, 2002), supporting education *for* the environment (Fien, 1993).

Associated with this ideological reorientation was a shift from hypothesis-testing field work approach to “~~framework~~ fieldwork,” which is organised around a specific human-environment issue (Kent, 2002, p.7). This type of fieldwork is linked to a humanistic approach that emphasises “~~the~~ subjectivity, value-ladenness and creativity of human responses to the environment” (Slater and Slater cited in Lai, 2006, p.159). While the critical orientation in school geography (with a focus on environmental education) has also been criticised for being inadequate in addressing environmental concerns in the current organisation of schools (Walker, 1997; Stevenson, 2007), its

adoption in the Lesotho secondary school geography curriculum would make the subject more interesting to the learners and more contextually relevant.

Summarising trends and developments in school geography up to the 1980s, Kent (2002) notes that the subject can be seen to have evolved through the –descriptive-didactic, spatial-scientific and issues-oriented approaches, with the beginning of an appearance of more critical value-laden geographies” (Kent, 2002, p.7). In the next section I trace developments in school geography from the early 1990s, after the concept of sustainable development had gained currency.

### **3.5.2 The growing interest in sustainable development**

With the growing international interest in education for sustainable development (ESD) after the Rio Summit in 1992, secondary school geography in many countries has developed in depth and breadth to address contemporary sustainability issues confronting humanity in the 21<sup>st</sup> century. The *International Charter of Geographical Education* published in 1992, recognises that:

Geographical education contributes to environmental education by ensuring that individuals become aware of the impact of their own behaviour and that of their societies, have access to accurate information and skills to enable them to make environmentally sound decisions, and develop an environmental ethic to guide their actions. (IGU cited in Houtsonen, 2004, p. 147)

This statement reflects geography educators’ full commitment to environmental education. The statement also suggests that school geography should not focus only on development of the necessary skills and values, but also on action competences that can empower learners to address environmental issues. It would therefore seem that geography, at least in its discourses, has been moving along with developments in education in general and environmental education, in particular. Exemplary evidence of geography’s commitment to EE is the appearance of a journal, *International Research in Geographical and Environmental Education*, which has since 1992 been providing a forum for debates and information sharing on the special contribution of geography to environmental education.

In describing the linkages between secondary school geography and environmental education, Tilbury (1997) argues that geographical concepts such as sustainable development, exploitation, stewardship and responsibility, dependence and interdependence, urbanisation and industrialisation are integral to environmental education. She further reiterates the position of the *International Charter on Geography Education*, endorsed by the International Geographical Union (IGU) in 1992, arguing that because school geography studies interactions between physical and human environments, it contributes to learners' understanding of processes affecting the environment and stimulates their interest in environmental management and protection.

The interdisciplinary nature of school geography is also seen by the international geography education community as a distinctive feature that puts the subject in a unique position to contribute to environmental education in its broad version of ESD (IGU, 2007). The holistic approach emphasised in both geography and EE provides learners with an understanding of the biophysical, social, political and economic systems –that are part of the human-environment tension...between exploiting and sustaining the environment” (Bednarz 2006, p. 239). This claim is endorsed by the following IGU proclamation:

Nearly all the –action themes” highlighted in the UNDESD, including environment, water, rural development, sustainable consumption, sustainable tourism, . . . climate change, disaster reduction, biodiversity, and the market economy, have a geographical dimension. The declaration proposes that the paradigm of sustainable development should be integrated into the teaching of Geography at all levels and in all regions of the world. (IGU, 2007, p.243)

This statement, consistent with previous IGU declarations, shows how the international community of geography educators reconceptualises the subject knowledge, on an official global level, in response to changes in environmental education. The IGU sees the United Nations Decade of Sustainable Development (UNDESD) as an opportunity to strengthen ongoing initiatives to re-orient geography towards sustainable development.

The question of how environmental education principles are infused into geography curriculum materials and classroom practice has been of interest to geography

educators in a number of countries (Reinfriend, 2004; Tracana, Ferreira, Ferreira & Carvalho, 2008). The findings of an international survey, conducted by Naish (2004), suggest that in many countries environmental education reforms have influenced developments in school geography content and pedagogy. For example, Reinfriend (2004) notes from the work of Kross that in Switzerland the perception of space in school geography has shifted from the anthropogenic view of the earth as a place of human struggle for survival and profit making, to the ecocentric view of the earth as a space for living and environmental conservation. This may suggest that, consistent with the changing conceptions of sustainable development (see Section 3.2.2), the subject has adopted a broad view of sustainability, integrating economic with environmental needs. With regard to pedagogy Reinfriend further notes, the interest of geography educators in Switzerland has shifted from behaviourist to social constructivist approaches.

Further exploration of the changes in secondary school geography in a number of national contexts reveals that some changes have occurred in the last two decades, following environmental education pedagogic innovations at the levels of policy documents, particularly in the UK, USA, Australia, and Hong Kong (Rawling 2001; Bednarz 2006; Cotton, 2006; McKeown, 2006; Yeung, 2009). These innovations reflect a growing interest on the part of geographers in the adoption of issues-based and problem-solving approaches that expose learners to the analysis of controversial environmental issues (Cotton, 2006; Yeung, 2009). However, there is little published research, especially in the region of southern Africa, showing how the introduction of environmental education is shaping geography at the level of classroom practice. The only exception that I am aware of is a study reported in South Africa by Wilmot and Norton (2004), which described how geography teachers facilitated active learning to promote an understanding of local environmental issues relating to plastic waste legislation. My study will therefore make a further contribution to the literature on how geography in the region has been adapting to curriculum reforms introduced through environmental education.

### **3.6 Some environmental education implementation challenges in geography**

While there is evidence of the existence of environmental education in school geography curricula documents in many countries, McKeown (2006) observes that topics relating to EE/ESD do not actually contribute to sustainability. This suggests that curriculum inquiry should go beyond curriculum statements to question the assumptions and implications of new ideas for educational practice in different national and school contexts.

The literature suggests that, in addition to commonly reported technical and organisational issues such as competition for school time-table space, teachers' resistance to change, heavy workloads and a feeling of lack of confidence among teachers in some countries (Cotton, 2006), there are structural problems that need to be addressed. Bednarz (2006) reports that the lack of environmental education in school geography at the level of classroom practice in the United States can be attributed in part to the controversial status of environmental issues in that country, which means that there is no official policy supporting ESD (McKeown, 2006). Other structural problems include external examinations that inhibit the implementation of a socially critically approach in geography (Cotton, 2006), and teachers' epistemological beliefs (carried over from previous experience) about the nature of the subject, which support a descriptive and factual approach (Alexandre, 2009).

Closer to home, in the region of southern Africa, although there is little research on the subject, it appears that the implementation of environmental education within geography has faced certain challenges. For example, in South Africa, as is the case in Australia and New Zealand, there are concerns that subsuming geography into the two learning areas of human and social sciences, on the one hand, and natural sciences on the other, poses a threat to the integration of geography knowledge fields (Van Harmelen, 1999), which may compromise a holistic approach to teaching environmental issues within the subject.

In Botswana, a country with a similar colonial history to Lesotho, pedagogical change in support of the vision of critical geography is reportedly constrained by the local authoritarian culture, coupled with a bureaucratic-authoritarian model of education

inherited from Britain during the colonial era (Tabulawa, 1997). In a later publication, Tabulawa (2002) reports some movement from a narrow view of environmental determinism that had characterised much of the regional geography in the past, to an approach recognising the reciprocal relationship between humans and the environment. Although in Zimbabwe there is no official mention of environmental education, Munownenyu (2004) reports that the subject has evolved in line with international trends, from a focus on regional geography to thematic studies and cultural geography. Teachers nevertheless encounter difficulties and challenges in their interpretation of the new conceptual or thematic approach, and these stand in the way of the smooth implementation of environmental education.

The above discussion shows that in a number of countries internationally, there is a shift in school geography (at least at the level of curriculum materials) towards environmental education. In Lesotho, with the exception of a study reported by Mphale (2001) prior to the LEESP intervention, there is little curriculum research showing how school geography has been changing in response to curriculum reviews and the growing international interest in environmental education. In this study, therefore, I analyse geography curriculum materials and classroom practice in selected schools to explore how environmental education, as conceptualised in LEESP, has shaped junior secondary geography in terms of content and pedagogy.

### **3.7 History of curriculum reforms in Lesotho secondary geography**

An examination of the history of junior secondary school geography in Lesotho shows that, from independence in 1966 to 1999, there were few changes in the subject despite the local and global changes affecting society. The only notable change was the introduction of a new textbook (Junior Secondary Geography for BOLESWA) in the mid-1980s. This textbook neither provided learning activities nor explicitly emphasised environmental issues, but did include some locally relevant material. It became an extremely influential teaching resource for more than fifteen years, until new textbooks supporting the new syllabus (developed in 1999) were introduced in 2004.

In 1969, three years after independence from colonial rule, a locally produced geography syllabus was introduced. This syllabus was devised by a British national who was a geography professor at the then University of Botswana, Lesotho and Swaziland (now the National University of Lesotho). A study that analysed this old geography syllabus identifies a number of limitations associated with it (Mokhosi, 1977). According to the findings of this study, the syllabus had very little Lesotho context. The subject content followed a regional approach, focusing on the geography of North America, South America, Western Europe and parts of Asia. Mokhosi further notes that the syllabus was content-based without clear objectives and methodological suggestions on the teaching of the content, which was above the cognitive level of an average Junior Certificate student. Other critics, as Mosisili (1981) notes, suggest that the content of the syllabus and textbooks was foreign to the environment, interests and needs of the learners, and not directly related to their daily life experiences. Drawing on my personal experience of teaching the subject for six years and interacting with teachers as a geography educator for more than ten years, I can say that the teaching of the subject in schools has been mainly teacher-directed, partly because teachers have struggled to cover the high content load of the examination syllabus.

In 1990 an alternative syllabus that had been developed during the 1980s was introduced in a few pilot schools with the intention of extending it to all schools in 1993. This syllabus was part of the 1984 curriculum reform process, which was motivated by the need to align curriculum with the national policy of education with production, and to align junior with senior secondary education. However, this syllabus remained in the trial stage due to, among other problems, a lack of coordination of the reform process (Raselimo, 1996). It ran parallel to the previous syllabus until 1999, when they were both replaced by the current syllabus.

### **3.8 Conclusion**

In this chapter, I have provided a history of environmental education in the international arena, in the region of southern Africa and in Lesotho. Analysis of the evolution of the concept reveals that historically, environmental education has successively been associated with nature study, outdoor education, conservation

education and education for sustainable development. Although there is lack of consensus on the meaning of sustainable development, the review of literature in this chapter suggests that the concept has been at the heart of the dominant discourse in environmental education internationally since the early 1990s. This period also marks the emergence of the now influential concept of action-competence, which was driven by a German tradition of liberal education (*Bildung*). The adoption of action competence and sustainable development at the time seems to have shifted methodologies of environmental education from behaviourism promoting education *about* and *in* the environment, to constructivist approaches supporting the emancipatory vision of education *for* the environment. It has also emerged, however, that implementation of socially critical approaches in environmental education has been constrained by, among other factors, the traditional organisational structures of schools. This suggests that implementing environmental education, as it is currently conceptualised both internationally and in Lesotho, requires fundamental changes in the structures within schools and society.

With respect to secondary school geography, the international literature reviewed in this chapter shows that the subject has been changing, at least at the legislative level, in response to developments in environmental education. Historically, the focus in school geography has shifted from the regional tradition, using descriptive-didactic methods supporting education *about* and *in* the environment, to the human-environment tradition emphasising an issues-based approach. Growing interest in sustainable development and socially critical geography supports the vision of education *for* the environment.

In Lesotho, however, the review of literature shows that until 1999 there was little change in the junior secondary geography curriculum, despite substantial changes in society. This suggests that there was – and still is – a need for change in secondary school geography if the subject is to retain its curriculum relevance. In my view the introduction of environmental education into the Lesotho education system is a necessary curriculum intervention to enhance quality in school geography by making it more contextually relevant and integrative. The question of how Lesotho junior secondary school geography is shaping up with regard to the trends and developments

in environmental education and school geography internationally is an area of exploration in this study.

However, that sustainable development and its associated socially critical approaches have been driving forces shaping both environmental education and school geography globally raises a question as to how it is that certain forms of knowledge and pedagogy are legitimated in educational programmes. In the next chapter I explore the field of curriculum theory in an attempt to understand curriculum reform and change as social processes influenced by different ideologies and contextual factors.

## CHAPTER 4 THEORETICAL CONTEXT FOR INVESTIGATING CURRICULUM REFORM AND CHANGE

### 4.1 Introduction

My ultimate goal in this study was to understand the process of curriculum reform and transformation in the context of Lesotho. The study is therefore situated within curriculum theory in general and curriculum policy development and implementation in particular. In this chapter, I provide a review of literature on the process of curriculum reform and change, with a focus on critical theory. I first situate the study within curriculum development processes. Secondly, I introduce critical theory and provide justification for drawing on it. This is followed by a discussion of knowledge paradigms underpinning an understanding of curriculum and curriculum change. In subsequent sections I explore the process of curriculum policy-making and outline a policy cycle model capable of informing an understanding of curriculum reform. The chapter also reviews international influences on curriculum reform, with a focus on developing countries, and explores strategies that are often used to support curriculum change. Finally, I review the literature on contextual/structural factors enabling or constraining curriculum change at the level of classroom implementation.

### 4.2 Locating the study within curriculum development processes

Literature on curriculum development suggests that the process of curriculum development runs through four phases: design, dissemination, implementation and evaluation (Carl, 2002). According to Carl, **curriculum design** is the first phase in which a new curriculum is planned or an existing curriculum is revised. As cited in McKernan (2008), Macdonald writes as follows about curriculum design:

... curriculum design is political in nature; that is an attempt to facilitate someone's idea of good life. By creating social processes and structuring the environment for learning, curriculum design is thus a form of "utopianism", a form of political and social philosophizing and theorizing.... (p.57)

This suggests that curriculum design, as McKernan (2008) indeed argues, is not just a technical response to societal problems and needs, but rather is political in nature and driven by various values. In many cases curriculum designers engage with the broader national context to identify needs and problems that the curriculum needs to address.

Seen in this manner, curriculum design presupposes curriculum reform, which typically refers to government decisions to change the content and organisation of what is taught in public schools, within the parameters imposed by social, economic and political contexts (Kennedy, as cited in Marsh, 2009). In some national contexts curriculum design is the preserve of senior government officials and curriculum developers in the department of education.

Following the phase of curriculum design, is **dissemination**, in which information about the new curriculum is intentionally distributed and curriculum consumers are prepared for its use (Carl, 2002). Drawing on the work of Coulby, Marsh and Willis (2007) observe that although dissemination is often used synonymously with diffusion, the two concepts are different. They explain that unlike diffusion, which is spontaneous, the term dissemination refers to intentional and planned efforts to inform individuals or groups of education practitioners about innovation. This also involves arousing interest and marketing the innovation to the potential users for its adoption (ibid). Dissemination strategies that are often used include the production and distribution of guidance materials, and conducting capacity-building workshops to empower curriculum users, as “the level of empowerment would probably also determine the level of dissemination” (Carl, 2002, p.143). Carl further argues that effective dissemination is not only a condition for successful implementation of new curriculum ideas, but also for the institutionalisation of such ideas.

In Lesotho a commonly used model of dissemination for the secondary school curriculum is a trial school system (Jobo, Mokuku, & Nketekete, 2005). In this model selected schools representing various regions are selected for trial of the new curriculum. These schools work collaboratively with the National Curriculum Development Centre (NCDC), which, as shown in Chapter 2, is responsible for school curriculum activities in the country. The NCDC plays a supervisory role by providing clarity and addressing teachers’ concerns with the new curriculum. They also get feedback that is used to refine the curriculum prior to full implementation.

According to Carl (2002), the next phase of the curriculum development process after dissemination is **Curriculum implementation**, which refers to the actual use of the new curriculum in all schools. It is the process of translating the planned or written

curriculum into classroom practice (Marsh and Willis, 2007). In this phase the key players are classroom teachers. As will be explained later in this chapter, the implementation process is mediated by a number of contextual factors including teachers' beliefs (Prawat, 1992) (see Section 4.12.1). Hence there may be discrepancies between the planned or intended curriculum and the implemented curriculum.

**Curriculum evaluation** is the last phase of the curriculum development process. This is the phase during which not only the success and effectiveness of the curriculum are evaluated, but also the effect thereof on pupils" (Carl, 2002, p. 55). Information obtained from this phase will lead to the decision to institutionalise or revise the curriculum.

This study is situated within the first three phases of curriculum development: design, dissemination and implementation. I analysed an intended environmental education curriculum as conceptualised in LEESP documents (see Chapter 6). I then analysed the social contexts within which the environmental education policy guidelines were developed and disseminated (see chapters 7). Finally, I explored how the intended environmental education curriculum policy guidelines were interpreted and enacted in classroom practice, focusing on geography in selected schools (see chapters 10 and 11). I compared this implementation with the intended geography curriculum, as represented by curriculum documents and textbooks (see chapters 8 and 9, respectively).

### **4.3 Why critical curriculum theory?**

Critical curriculum theory is associated with the tradition of Critical Theory as conceptualised by the neo-Marxist scholars of the Frankfurt School, notably Habermas, who shifted attention from the original Marxian emphasis on "labour and the social relations of production" to "social interaction and the nature of language and morals" (Huckle, 2002, p. 259). Although Habermas did not say what exactly the school curriculum should look like in terms of content and pedagogy (Grundy, 1987), his work inspired many curriculum theorists and scholars whose work is currently influential in curriculum theory and practice. I draw on the ideas of critical

curriculum theorists and scholars (Giroux, 1988; Grundy, 1987; Cornbleth 1990; Apple, 2004; McLaren, 2007), who argue that the curriculum is a contextualised and contestable dynamic social process driven by various agendas involving power and ideology.

The strength of critical curriculum theory is that it provides a *language of critique* to question “appearances and taken-for-granted practices, [and to probe] assumptions and implications” (Cornbleth, 1990, p.3) that may be overlooked when one is using a technical-rational approach. Eisner (1992) concurs, noting that critical curriculum theory has the knowledge basis and ability to reveal the tacit assumptions and values in curriculum texts and practice. Thompson (2003) shares her experiences with the use of critical theory in curriculum research as follows:

I have found a critical theory perspective to be useful in studying processes of curriculum construction and implementation. In these processes, curriculum documents and programs are co-constructed not just because of what is considered to be the best for the learner but because curriculum is a social and political process. It emerges from struggles, contestations and alliances, and from things that are said and also left out. Thus, the critical lens is not about finding solutions to problems or even about critiquing solutions that are posed. It also helps to probe what is not immediately seen as problematic. (p.189)

Thus curriculum researchers drawing on critical curriculum theory, as scholars such as Apple (2004) and McLaren (2007) suggest, are interested in answering the following questions: How and why knowledge gets constructed the way it does? How and why some forms of knowledge are legitimated and celebrated by the dominant culture while others are not? And whose interests does this knowledge serve? What is the relationship between social class and the knowledge taught in school? These questions are particularly relevant to this study, which seeks to understand the processes of curriculum reform and transformation, initiated via a project funded by a developed country, in Lesotho, a less developed country with a different culture, history and development needs.

Critical theory, as is the case with many social theories, may be used differently depending on the purpose of research. In some cases, researchers draw on critical theory in using an action research methodology because they have a transformative

agenda (Mokuku, 1999; Babikwa, 2004; Raven, 2006). Other researchers, both in African contexts and internationally, have adopted a critical perspective for understanding and reasoning about the processes of curriculum reform (Jansen, 1998, 2001; Carrim, 2001; Tabulawa, 2003; Thompson, 2003; Smyth, 2004; Huynh, 2005).

Since my study does not have a transformative goal (see Chapter 5), I used the lens of critical curriculum theory, not so much to find a solution to educational problems in Lesotho as to analyse, interpret and explain the social process of constructing, disseminating and implementing environmental education curriculum policy guidelines. This analysis entailed examining the values and ideologies that underpin the views on knowledge, sustainable development and pedagogy advocated by LEESP, in the light of the current junior secondary school geography curriculum and classroom practice. Critical curriculum theory also helped me examine the contextual and structural factors that facilitate or constrain the LEESP's intended change process in geography, and illuminated issues of domination and contestation within the processes of environmental education conceptualisation and dissemination.

#### **4.4 Knowledge paradigms underpinning curriculum and curriculum change**

The concept of curriculum (and indeed curriculum change) is understood differently according to the philosophical and ideological positions held by individual curriculum theorists and scholars. Habermas (1972), working within the tradition of Critical Theory, developed a theory of *knowledge-constitutive interests*, in which he contends that there are three interrelated but distinct categories of human knowledge interests, which imply different orientations to curriculum, pedagogy and assessment. These are technical interests, practical interests and emancipatory interests, based on empirical-analytic, historical-hermeneutic and critical sciences respectively (Grundy, 1987; Stevenson, 2007). In this section I elaborate on these knowledge paradigms, discussing their assumptions about curriculum and curriculum reform, knowledge, teaching and learning, and resources, in order to establish a theoretical context for conceptualising curriculum and curriculum change.

#### 4.4.1 Technical paradigm

As described by Grundy (1987), the technical paradigm is orientated towards control, with an emphasis on the instrumental goals of education that serve to maintain the *status quo*. It resonates with Tyler's (1949) view that curriculum is a technical exercise driven by pre-specified behavioural objectives with the purpose of exercising control. By giving behavioural objectives a central position in curriculum design and implementation, the technical paradigm employs a form of positivism described by Habermas as empirical-analytic, in which "knowledge is structured according to a series of hypotheses by which knowledge is made of observations which also have predictive power" (Grundy, 1987, p. 11). This reflects a product-oriented view of curriculum, as something whose purpose is to provide a common body of knowledge to all learners for cultural reproduction (Kliebard, 1986; Grundy, 1987; Bernstein, 2000). As Doll (1993) observes, the curriculum serves the interests of powerful groups by imposing external control on education. Curriculum reform therefore serves the purpose of maintaining the norms and values of society as deemed appropriate by those with the power to make the reform. Waks (2003, p.387) notes that in this view curriculum change involves "changing the goals and objectives of society as perceived by elites, and adopting new means of shaping and sequencing subject matters to adjust them better to the new ends".

Such change is often introduced through a top-down approach, similar to Havelock's Research, Development and Diffusion model, wherein curriculum change is initiated from the central level of the education system, and then disseminated in a few schools in preparation for full implementation (Havelock, cited in Carl, 2002). In this approach teachers are seen as mere implementers of curriculum. To ensure their compliance, curriculum materials produced using the technical approach are often "teacher-proof" packages that minimise the influence of the teacher (Macdonald, 2003, p. 140). Curriculum reforms introduced through such top-down approaches tend to fail at school level because the contextual realities of schools and classrooms may have not been fully taken into account (Surgrue, 1997; van den Akker, 2003).

At the micro-level of classroom practice, the technical paradigm assumes an objectivist view of knowledge as existing independently of the teachers and the

learners, with the former assuming the role of knowledge transmitters and the latter being viewed as recipients of other people's knowledge. Relations between the teacher and the learners are hierarchical: the teacher controls the selection and sequence of lesson activities (Bernstein, 2000), which may undermine the creativity of the learners. Within this paradigm, the performance of teachers is evaluated against their ability to teach the curriculum content as intended and make learners meet pre-determined examination standards.

In the technical paradigm, teaching and learning resources such as textbooks dictate classroom teaching and learning processes. Research done in some national contexts suggests that the ways most teachers use textbooks generally reflects a technical view of knowledge, in that they use them to achieve class control and as authoritative sources of information for content and teaching strategies (Murray & Wilmot, 2000; Lubben, Campbell, Kansada, Kapenda, Gaoseb & Kandajeo-Marenga, 2003). This suggests that successful implementation of a new curriculum policy depends largely on how well textbook writers have interpreted it.

#### **4.4.2 Practical paradigm**

The practical paradigm is oriented towards mutual understanding of the world, achieved through a consensual meaning-making process in which knowledge is socially constructed in interaction between curriculum agents (Grundy, 1987; Cornbleth, 1990). This epistemological stance reflects the process view of curriculum as proposed by Stenhouse (1975), who regards curriculum as a particular form of specification about the practice of teaching, and not a package of materials or a syllabus to be covered within a specified period of time. To understand this process, therefore, curriculum research should not be limited to the analysis of curriculum policy documents: it also needs to understand social interactions with the aim of “developing situational insight and understanding of the context” (Frame, 2003, p. 25). This suggests that classroom observation, for instance, would enhance an understanding of ‘reality’ as experienced by the teachers and learners in their specific contexts.

Since curriculum is situated within the context of practice, curriculum change is a dynamic social process intended to improve the very same practice as teachers, in interaction with their learners, make sense of and recreate the new curriculum policy in the context of practice (Bowe et al., 1992). In this sense-making process, curriculum is often not enacted as intended, because the change process is mediated by, among others, contextual factors such as the beliefs held by teachers and learners about teaching and learning and the purpose of schooling (Cornbleth, 1990; Tabulawa, 1997; Spillane, Reiser & Reimer, 2002). This study sought to understand what occurred at the interface between environmental education and junior secondary school geography, as geography teachers made sense of the environmental education pedagogic innovations in the context of their own practice.

Teachers operating within the practical paradigm act as facilitators, organising learning contexts that engage learners in activities such as group discussions, experiments and observations. Within this paradigm, teaching is seen as an activity involving “careful observation of students and diagnosis of their individual needs and interests” (Schiro, 2008, p.109). The learner is identified as an active participant making sense of new knowledge, rather than a passive participant whose role is to reproduce knowledge. This represents a learner-centred teaching approach which makes use of the learners’ prior knowledge and experiences. In this paradigm, textbooks are seen as no more than “pre-existing sources of guidance” (Williams & Lee, 2001, p. 222) for teaching and learning.

However, there have been criticisms that the practical paradigm does not offer an alternative to ideas about curriculum as product. For example, Young (1998) points out that:

its [curriculum as practice] weakness is in the limitation of the concept of practice. It replaces a notion of reality located in the structure of knowledge by one located in teachers’ classroom practice. Attempts by teachers to develop strategies for changing the curriculum derived from such a theory will confront the limits of what they can do in their classroom practice. Teachers will also become aware of the limits of a theory that does not enable them to comprehend the origins of such limits or show them how their classroom practice does in part shape the external reality of the curriculum in meaningful ways for their students. (Young, 1998, p.30)

Young (1998) suggests that curriculum, as a social construct, should rather be viewed in terms of its historical, political and economic limits. This reflects a critical view of curriculum as conceptualised by critical curriculum scholars (Grundy, 1987; Giroux, 1988; Cornbleth, 1990; McLaren, 2007).

#### **4.4.3 Critical paradigm**

The critical paradigm emerged as an alternative to the technical view wherein curriculum change is conceptualised as a technical or procedural exercise in terms of which teachers are mere implementers of curriculum innovations. This paradigm is also known as “emancipatory interest” paradigm as it is concerned with autonomy and responsibility made possible by action and self-reflection. The emancipatory potential is central to critical theory, which is concerned with ideological critique intended to liberate individuals from “the constraints of ignorance, authority and tradition upon human reason” (Fien, 1993, p.19).

In pursuance of its emancipatory/transformational agenda, the critical paradigm views knowledge as integrated, value-laden and constructed in the interaction between the teacher and the learner (Cornbleth, 1990). As a social construction, knowledge is “deeply rooted in a nexus of power relations... and is heavily dependent on culture, context, customs and historical specificity” (McLaren, 2007, pp. 196-197). Given the fact of cultural differences and circumstances, there can be no universal truth (Schiavo, 2008). Moreover, in this paradigm knowledge is challengeable and negotiated in order to serve practical and emancipatory interests (Grundy, 1987). As such, curriculum, through pedagogy, should play an important role in giving learners an active and critical voice to interrogate issues based on their prior experience (Giroux, 1992).

From the critical perspective on curriculum, the overall aim of formal school education is to promote democratic values with a view to transforming society. This is clearly stated by Giroux (1988) who, echoing the position of John Dewey on the purpose of public schools, believes that:

Public schools need to be defined as democratic spheres. This means regarding schools as democratic sites dedicated to self and social empowerment.

Understood in these terms, schools can be public places where students learn the knowledge and skills necessary to create in a critical democracy. (p.185)

According to Apple (2004, p.180), schooling is “an engine of democracy: opening horizons, ensuring mobility, and so on”. These democratic values cannot be achieved through traditional teacher-dominated methods that encode hierarchical power relationships between the teacher and the learners. Classroom teaching and learning should be empowering, if learners are to transform society in the way envisaged by critical curriculum theorists. In this respect the critical paradigm reflects aspects of a learner-centred pedagogy supporting the visions of critical pedagogy and education *for* the environment. In the following section, I give further attention to the assumptions of this paradigm about classroom practice, within the context of a learner-centred pedagogy.

#### **4.5 A learner-centred pedagogy**

As mentioned in Section 3.3, learner-centred pedagogy has been over-emphasised in environmental education processes, as though it is the only approach to curriculum work. It is currently the dominant paradigm in curriculum reform, especially in Africa where it is intended to serve as an enabler of democracy (Tabulawa, 2003; O’Sullivan, 2004; Chilsholm & Leyendecker, 2008). The idea originates in part from John Dewey’s experience-oriented conception of curriculum. Dewey was dissatisfied with aspects of traditional education, which he believed separated the learner from the curriculum. Influenced by the ideas of progressive education in the early twentieth century, Dewey linked the concept of curriculum with the learner, arguing that “the child and curriculum are simply two limits which define the same process” (Dewey, as quoted by Jackson, 1992, p. 6).

John Dewey’s experience-oriented view of curriculum inspired other curriculum scholars of the time, and remains influential today among curriculum scholars and teachers. For example, influenced by Dewey, Franklin Bobbitt defined curriculum as “the entire range of experiences, both undirected and directed, concerned in unfolding the abilities of the individual” (quoted in Jackson, 1992, p.7). Similarly, Pinar devised the method popularly known as *currere*, which emphasises the importance of personal experience in curriculum work. As Pinar (2004) writes:

The method of *currere* reconceptualised curriculum from course objectives to complicated conversation with oneself (as a “private” intellectual), an on-going project of self-understanding in which one becomes mobilized for engaged pedagogical action.... (p.37)

By bridging the gap between the learner and the curriculum, John Dewey envisaged democratic teaching and learning processes where control of the curriculum emerges from interactions rather than being externally imposed (Doll, 2002). In such democratic teaching and learning situations, as is the case with the practical paradigm (see section 4.3.2), the teacher acts as knowledge facilitator and collaborator rather than knowledge transmitter (Cornbleth, 1990). As a facilitator, the teacher is expected to create a liberating and empowering classroom environment where learners can actively participate in the learning process, interrogate issues and make autonomous decisions with respect to classroom activities. This kind of learner-centred pedagogy, where the learner has a critical voice, reflects aspects of *critical pedagogy* argued for by Paulo Freire (1972), and espoused by many other critical curriculum scholars (Giroux 1992, Fien 1993, Huckle 1993, McLaren, 2007).

Critical pedagogy has influenced environmental education programmes worldwide. As mentioned in Chapter 1, in Lesotho LEESP espoused a learner-centred pedagogy underpinned by action competence, grounded on the principles of liberal education. The learner-centred approach makes certain philosophical assumptions about what counts as valid knowledge and its appropriate form of transmission, which might conflict with or transform existing education values and practices in Lesotho. In chapters 10 and 11, I consider how geography teachers are making sense of and enacting the LEESP pedagogic innovations in their specific contexts.

This discussion of curriculum paradigms has shown that conceptions of curriculum range from a narrow understanding of curriculum as a plan of what is to be taught, to a more complex view of it as an educational experience closely linked to the learner. It has become clear from the work of critical curriculum theorists and scholars that the decisions regarding what should be taught are political, which suggests that curriculum within formal education (whether as a physical document or an

educational experience that the learner goes through) is driven by human interests and shaped by contextual factors. As such, understanding curriculum change requires an understanding of the context within which education is provided. Cornbleth (1990) argues for a contextualised approach to understanding curriculum change, and describes curriculum in the following manner:

Curriculum as contextualized social process encompasses both subject matter and social organization and their interrelations. Social organization, including teacher and student roles (and their attendant rights and obligations) and patterns of interactions, provides a setting for academic activities that can extend or constrain students' learning opportunities. (Cornbleth, 1990, p.25)

Although this definition was formulated some 20 years ago, I find it highly relevant to this study's quest to understand to what extent the Lesotho context was considered in conceptualising and implementing environmental education. In this study I adopt a broad view and consider curriculum as involving the secondary school geography curriculum materials – with both their explicit and implicit messages – as well as the social context of geography classroom practice. Operating within this conceptual framework, I consider curriculum change as involving changes to the geography content, pedagogy and teachers' epistemologies, –within the constraints of social, economic and political contexts” (Kennedy, cited in Marsh, 2009, p.162).

This view of curriculum and curriculum change helps to enable critical analysis and explanation of what is happening in the classroom following the Lesotho government and LEESP's intention to introduce environmental education into the formal education system. In other words, analysing curriculum as a contextualised social process, as Cornbleth (1990) suggests, provides an enhanced understanding of possible tensions between the intended geography curriculum and what is actually taught in geography classrooms.

#### **4.6 The political nature of curriculum and curriculum change**

As indicated in Section 4.1 of this chapter, within critical curriculum discourse curriculum change is a dynamic social process characterised by contestation and issues of participation, exclusion and domination (Carrim, 2001; Apple, 2004; Giroux, 1992), as different actors struggle for power in the processes of policy development

and implementation (Bowe et al., 1992). Olssen, Codd and O'Neill (2004) stress the political nature of curriculum policy-making, arguing that it is a political process rather than a democratic and consensual one. Curriculum is never neutral, but rather always a political document representing certain values that are intended to perpetuate dominant structures and norms at a particular time and space (Goodson, 1990; Jansen, 1998; Apple, 2002; Apple, 2004). As Grundy (1987, p.116) puts it:

...curriculum [development] process is inescapably political, for meaning-making also involves conflicting meaning. Those who have power are those who have the power to make sure that their meanings are accepted as worthy of transmission.

Given that the curriculum is a political document representing the interests of dominant groups, after Apple (2004) the following critical questions could be raised: Whose interests are served by learner-centred pedagogy, as conceived by LEESP? Is the kind of democracy underpinning this form of education consistent with educational ideals and political and socio-cultural values in Lesotho, or is it an imposition of Danish culture? The latter question is particularly important in terms of probing an understanding of what Baxen & Soudien (1999, p.138) describe as the “identity-making” inherent in many curriculum reform processes. They argue that most curriculum reforms imply a change of identity for both teachers and learners. In the context of this study, the question is raised whether the LEESP-envisaged change of identity of teachers and learners is in the best interests of the people of Lesotho and learners’ educational aspirations.

Supporting the idea that the curriculum is not value-neutral, Huckle (2002) reminds geography teachers that:

What counts as school geography (its content, teaching methods and assessment) is largely, but not wholly, determined by dominant groups and interests in society. The links between powerful economic, political and cultural interests and the everyday realities of geography classrooms are complex. . . . (ibid, p. 256)

This viewpoint highlights the importance of ideological critique in curriculum research. This study probed the historical and socio-political context that gave rise to the LEESP curriculum change process, with the aim, as Apple (2004) suggests, of

tracing the ideological roots of what counts as valid knowledge and the form of transmission. Following Eisner (1992, p.302), ideology is used in this study to refer to “beliefs about what schools should teach, for what ends and for what reasons”. As the literature shows, curriculum policy usually reflects the ideology of the dominant social group (Bernstein, 2000; Huckle 2002; Apple 2004), to the extent that in some African countries traditional values are marginalised (Breidlid, 2003).

This ideological critique is particularly relevant to this study as it seeks to understand a reform process, introduced via environmental education, which draws on the controversial concept of sustainable development. Here the question is: to what extent are the content and pedagogy of environmental education as conceptualised in LEESP synchronised with the real contexts of schools and the imperatives for sustainable development in Lesotho? Critical curriculum scholars (Cornelth, 1990, 2008; Goodson, 1997; Apple, 2004; McLaren, 2007) provide the language of critique to explore this question.

#### **4.7 Curriculum policy-making process**

Given that curriculum is a political and contextualised social process, understanding the process of curriculum change requires investigation into the process of making a curriculum policy. Elmore and Sykes (1992, p.186) define curriculum policy as “the formal body of law and regulation that pertains to what should be taught in schools”. In the context of this study curriculum policy refers to statements about the inclusion of environmental education, as found in government official documents, LEESP guidance documents, and geography curriculum documents.

Walker (2003) discusses the functions of policy in curriculum matters, and concludes that policy serves a cultural function, giving people an opportunity to express shared values regarding what should be taught in schools and how it should be taught. Thus the central focus of curriculum policy research is to understand how official actions are determined, what these actions require of schools and teachers, and their effect on what is taught to particular learners (Elmore & Sykes, 1992). Elmore and Sykes distinguish between policy intentions and policy actions, that is, between what is officially intended and what actually happens in practice. A large body of literature

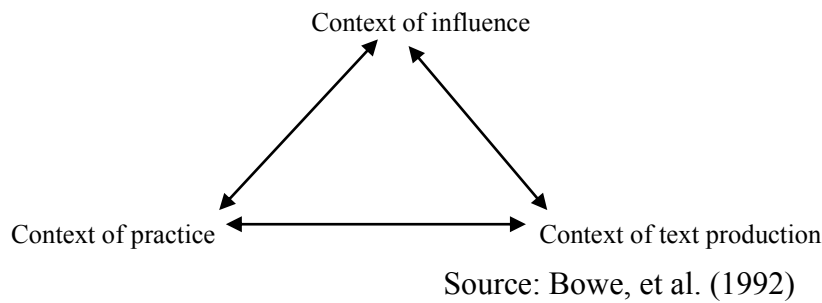
shows that there is often a gap or tension between policy intentions and actions (Prawat, 1992; Taylor et al., 2003; Cotton, 2006; Rogan, 2007; Blignaut, 2008). This is partly because policy statements often lack clarity and do not resolve conflicts among competing political interests (Elmore & Sykes, 1992). As mentioned in Section 4.3.1, this is particularly the case when a policy process follows a technical approach in which curriculum policies are initiated from the central department of education and introduced to schools through a top-down approach (Macdonald, 2003). Clearly, investigating the process of curriculum policy making and conceptualisation could enhance an understanding of the gap between policy intentions and policy actions.

#### **4.7.1 A policy cycle model**

There are a number of models in terms of which one can analyse the social process of conceptualising and implementing a curriculum policy. For example, Bernstein (1990) proposes a curriculum policy recontextualisation model which recognises that policy messages change from the field of their production through the field of recontextualisation and the field of reproduction, as curriculum agents make sense of the new policy. Bowe et al. (1992) propose a somewhat similar policy cycle model illustrating the political nature of curriculum policy development and implementation.

Since my study is not investigating curriculum recontextualisation *per se*, like other curriculum policy researchers, for example, Rawling (2001), I chose to make use of the policy triangle model proposed by Bowe et al. (1992) for analysis of the LEESP documents and the social process of conceptualising environmental education in Lesotho (see chapters 6 and 7). This model was also intended to elicit information pertaining to the nature of the social process through which environmental education was conceptualised and implemented in Lesotho (see research question 2 in Chapter 1). Hence in this section I will elaborate on this model.

The model consists of the following three policy contexts: the context of influence, the context of policy text production and the context of practice. A diagrammatic illustration of this policy triangle model appears as Figure 4.1.



**Figure 4.1: Diagrammatic representation of policy triangle**

#### **4.7.1.1 The context of influence**

While “curriculum reform arises out of the requirement to engage with ... contemporary cultural, economic and technological change” (Bernstein, 2000, p.66), according to Bowe et al. (1992), policy change is normally initiated at a national level of official policy-making. The process may be characterised by controversy as interested parties, both from government and private arenas of influence, struggle to dominate the prevailing discourses. Out of this struggle and controversy the decision to transform the curriculum is made, on the basis of national needs (as perceived in the main by elites and bureaucrats within the ministry of education). However, as will be shown later in this chapter (see Section 4.10), in the case of developing countries such as Lesotho, initiation of new curriculum policy is often influenced by global changes and external donor agencies which fund curriculum reform projects. In some other cases, for example in South Africa, curriculum policy change processes serve symbolic political interests (Jansen, 1999).

#### **4.7.1.2 The context of policy text production**

In this context various forms of policy text are articulated and produced, ideally in the interest of the general public. These texts may include official legal texts and curriculum documents (including textbooks) representing policy intentions. They may also include “formally and informally produced commentaries which offer to make sense of the official texts... the speeches of relevant politicians and officials...” (Bowe et al., 1992, p. 21).

Bowe et al. (1992, p.21) note that at the legislative level, policy texts are not necessarily clear, but rather ~~are~~ generalised, written in relation to idealisation of the real world, and cannot be exhaustive... .” They further point out that official policy texts are often contradictory in their use of key terms, and are reactive to particular events and circumstances. This suggests that a curriculum policy text should be analysed alongside other relevant policy texts, to establish intertextual links and in the context of its history and particular site of production (ibid.).

According to Bowe et al. (1992), texts produced in this arena are the product of struggle and compromise, as groups of actors are competing for control of their meaning. As suggested by critical curriculum theory, this implies that a curriculum is never neutral, but always a political document representing the interests of dominant groups (Goodson, 1990; Jansen, 1998; Apple, 2002). Bowe et al. (1992) suggest that a study on curriculum policy should not separate curriculum policy implementation from its development. Hence, this study also investigated the social process of conceptualising environmental education at the levels of curriculum decision making and curriculum development within the National Curriculum Development Centre (NCDC) in Lesotho, to understand contestations and tensions experienced during that process (see Chapter 7).

#### **4.7.1.3 The context of practice**

This is the third level of the policy cycle, where new curriculum policy is interpreted and implemented by practitioners. Bowe et al. (1992) observe that in the context of practice policy is not simply received and implemented, but is subjected to interpretation and creation. In describing the complex process of policy implementation they write as follows:

Practitioners do not confront policy texts as naïve readers, they come with histories, with experience, with values and purposes of their own; they have vested interests in the meaning of policy. Policy will be interpreted differently as the histories, experiences, values, purposes and interests which make up any arena differ. The simple point is that policy writers cannot control the meaning of their texts. Parts of texts will be rejected, selected out, ignored, deliberately misunderstood, responses may be frivolous etc. (Bowe et al., 1992, p. 22)

This suggests that to ensure the successful implementation of curriculum reform, the policy process needs to take full account of contextual factors – the schools and classrooms as experienced by teachers and learners.

The policy triangle outlined in this section illustrates that curriculum policy-making is a political process involving multiple stake-holders and interest groups. In this regard, as Marsh (2009) suggests, it is important to analyse and understand the contributions of the various players who make decisions about curriculum matters. Perhaps the most important questions are: Who are these decision-makers? And what is their role in curriculum policy?

#### **4.8 Curriculum decision-makers**

According to Marsh and Willis (2007), curriculum decision-makers in a formal education setting are:

those individuals or groups who, because of their professional status or positions of authority, wield influence and have some degree of power to determine courses of action to be followed in schools. (p.307)

They include senior government officials in the ministries of education, school principals, teachers, examination agencies, textbook writers and teacher unions (Marsh, 2009). In centralised education systems, such senior education officials include the Principal Secretary (PS) and chief education officers (CEOs). The CEOs responsible for curriculum services also supervise curriculum development activities, which are undertaken by national curriculum development centres.

However, the curriculum decisions made at the senior level of curriculum management may not be implemented as intended, given that teachers also make decisions on the enactment of the curriculum in their specific classroom contexts. Hence, there may be a disjuncture between curriculum intentions and the implemented curriculum, and indeed the attained curriculum. Marsh and Willis (2007) observe that the kind of decisions that teachers make are influenced by learners as part their classroom context. They may also be influenced by examination standards, school organisational structures, and textbooks that are prescribed for the level they

teach (Cotton 2006). Examination agencies also play an important role in the affairs of curriculum development and change, and have a great influence on classroom practice (Marsh and Willis, 2007). This suggests that successful implementation of curriculum reforms may require change in the examination system as well.

The curriculum decision-makers identified above do not always make independent decisions, as they are also influenced by other stakeholders who may be involved at various stages in the process. Stakeholders are those individuals or groups of persons who through their involvement have the right to make input on what is taught and learnt in schools (Carrim, 2001; Arends cited in Marsh, 2009). Depending on the nature of the curriculum reform, the stakeholder groups may include teacher education institutions, parents, employers, textbook publishers, school governing bodies and proprietors. They also include pressure groups such as teacher unions and think-tanks, who may “exercise different degrees of political power and influence at different points in the policy process” (Hodgson & Spours 2006, p.687). The question here, however, is whether or not a political space for contributing to policy-making is afforded to all these stakeholders.

#### **4.9 Issues of stake-holder participation and representation**

Research done on curriculum reform in southern Africa, particularly in South Africa, seems to confirm the assumptions underlying the policy cycle model proposed by Bowe et al. (1992). This work highlights the contestations and issues of participation that characterised the early phase of Outcomes-Based Education (OBE) (Baxen & Soudien, 1999; Jansen, 1999; Jansen, 2001; Carrim, 2001). These issues are reported to exist however democratic the process of reform may appear to be (Baxen & Soudien, 1999).

In Lesotho, a recent study points to similar issues concerning a lack of involvement and participation in the early phases of conceptualising the LEESP at the macro-level of curriculum development (Monaheng, 2007). Building on the findings of this study, I explored the extent to which the local voice was audible in the process of conceptualising and disseminating EE, to arrive at a better understanding of what obtains in practice. This exploration involved examining the issues of contestation,

domination and exclusion within the processes of development of the *Reference Note* and geography syllabus attachments (developed as part of the outputs of LEESP), as well as in the process of EE dissemination workshops, which are not highlighted by Monaheng (2007). But cognisant of the fact that the process of curriculum reform is not immune to external influences, in the next section I consider external influences and pressures on curriculum reforms with particular reference to developing countries.

#### **4.10 International influences and pressures on curriculum reform**

It is acknowledged in the literature that curriculum change, especially in developing countries, is also shaped by external influences over which states have no control (Ansell, 2002; Tabulawa, 2003; Chilsholm & Leyendecker, 2008). These external influences take different forms, and may be direct or indirect. Other than the rapid spread of information through the internet and other media, which influences the way people think and behave, there are also formal global structures through which new curriculum ideas filter into the education systems of developing countries. In this section, I describe how international conventions provide a social context of influence for curriculum reform. I also consider the influence of international donor agencies, focusing on African countries.

##### **4.10.1. International conventions**

Most developing countries, especially on the continent of Africa, are signatories to international agreements and conventions that are often used as a justification for curriculum reforms. These include the famous global *Agenda 21* which, as noted in Chapter 3, prompted many UN member states to integrate environmental education into their curricula. Other conventions relevant to this study are the Convention on Rights of the Child (1989) and the Millennium Development Goals (MDGs), which have also shaped national visions in member states. In these agreements there are innovative educational ideas aimed at transforming education systems worldwide. These ideas appeared attractive to most southern African countries, which wanted to overcome the inherited limitations associated with colonial education systems and achieve their development goals (Chilsholm & Leyendecker, 2008).

The Human Rights Convention prompted the spread of learner-centred education on the African continent. Chilsholm & Leyendecker (2008) note that the democratisation of most African countries in the early 1990s paved the way for education curriculum reforms inspired by the vision of learner-centred pedagogy. A few examples may be cited to illustrate this. Post-apartheid South Africa adopted Outcomes Based Education (OBE) after 1994, signalling a departure from apartheid education (Cross, Mungadi & Rouhani, 2002). In Namibia, the introduction of learner-centred education after independence in 1990 was regarded as a means of consolidating democratic ideals (O'Sullivan, 2004). The ideas driving these reforms are not necessarily relevant to all national contexts. They are also not value neutral, as they carry messages that are intended to incorporate countries adopting them into the global economy (Tabulawa, 2003, 2009). Chilsholm & Leyendecker (2008) argue that developing countries adopted the philosophical ideal of learner-centred education as a result of international pressure to transform their societies and economies from agricultural-based polities to modern (Western) and knowledge-based polities. Whether or not this is in the best interests of developing countries is a matter for debate.

#### **4.10.2 The influence of foreign financial aid**

The spread of educational ideas conceptualised in international conventions such as those mentioned in Section 4.10.1 was facilitated by foreign donor funding, especially in the early 1990s. After the collapse of the Berlin Wall in 1989, international donor agencies showed interest in funding education reform projects, especially those promoting learner-centred pedagogy in African countries (Tabulawa, 2003). Given the increasing levels of poverty and political instability in many African countries, receiving foreign financial aid seemed an attractive alternative to pursuing national educational ideals (Samoff, 1992; Niewenhuis, 1996; Ansell, 2002; Chilsholm & Leyendecker, 2008). Samoff (1992) observes that around the early 1990s, almost all African countries relied heavily on foreign assistance for their education development budget, with some countries receiving donor funds even for recurrent education expenditures.

Although in many cases such foreign assistance has contributed significantly towards educational improvement, the interest for some donors – such as the International Monetary Fund (IMF) and the World Bank – in funding curriculum reform projects is motivated more by the demands of world economy than the national priorities of the recipient (Samoff, 1992; Zvobgo cited in Ansell, 2002; Tabulawa, 2003). Evidence for this claim is perhaps provided by the case of Zimbabwe, where the World Bank recommended the strengthening of examination systems, instead of funding technical education which it considered “costly and ineffective” (World Bank Report 1989 cited in Ansell, 2002, p.101). This, as Ansell notes, led to the decision to drop technical subjects from the Junior Certificate education level in Zimbabwe (Ansell, 2002). The situation certainly prompts the question whether the recommendation to prioritise examination standards over technical education served the best interests of the people of Zimbabwe, and suggests that curriculum reforms in developing countries are susceptible to donor manipulation and hegemony. As Samoff (1992) remarks:

The funding agency may make the provision of support conditional on the adoption of specific policies, priorities, or programmes. At other times that relationship is less directly influential. The funding agency may, for example, finance research intended to support its preferred programmatic orientation. Or African educators may tailor their requests, more or less explicitly, to fit within the funding agency's agenda. Occasionally the paths of influence are far more circuitous. A desire to win support for a high priority goal in one project may promote a willingness to accommodate to a low priority goal in another. (pp.62-63)

While there has been considerable donor support for curriculum development in southern Africa, research evidence suggests that there is a tension between the policy intentions of donor-driven imported ideas and the expected outcomes at the level of classroom implementation (Ansell, 2002; Tabulawa 2003; Lotz-Sisitka, 2004; Chilsholm & Leyendecker, 2008). For example, in the case of Botswana, Tabulawa (1997) observes that learner-centred pedagogy as introduced by USAID is failing because it is in conflict with the authoritarian culture of the Botswana. He further argues that the interest of the donor agency in funding this innovation is not educational, but rather lies in breaking the authoritarian structures in schools so that they can produce individuals imbued with the values of liberal democracy that are

supportive of capitalist ideology. Similarly, Chilsholm and Leyendecker (2008) report implementation problems with learner-centred education in countries such as Namibia and South Africa, even though in these cases the innovation was not externally imposed.

In the light of the experience elsewhere of the impact of external influence and pressure as discussed in this section, my study sought to understand a complex process of curriculum reform introduced through a donor-funded project. In particular, I was interested in finding out the extent to which the local voice was audible in the social process of conceptualising the environmental curriculum reform. Curriculum policy implementation is nevertheless influenced by local supportive structures and contexts. Hence, in the next two sections (4.11 and 4.12) I discuss strategies used to support curriculum reforms, and contextual factors that influence curriculum change respectively.

#### **4.11 Some strategies for supporting curriculum change**

A number of strategies used to support curriculum change are discussed in the literature (Fullan, 1991; Walker, 2003; Marsh and Willis, 2007; Marsh, 2009). These include production of new textbooks and other teaching materials, and teachers' professional development. In this section, I review literature on the role of these curriculum support strategies in curriculum change. I focus on these two because they are directly relevant to my study.

##### **4.11.1 Production of new textbooks**

Mikk (2000) defines textbooks as books that are specifically written for teaching and learning. They are cultural artefacts assisting teachers with knowledge of the subject matter and pedagogic practices. As teaching resources, textbooks are supposed to provide teachers with "accurate, up-to-date and wide-ranging data for them to use in a way that they think best" (Waugh, 2000). Waugh, writing in the context of the UK, further argues that since syllabuses tend to be overcrowded in terms of time-table space and competition among subjects, textbooks should ideally cover all the content

that teachers and learners need. It follows that textbooks produced with the intention of supporting curriculum reform should be aligned with the new curriculum.

In terms of the Bowe et al.'s (1992) policy cycle model presented in Section 4.7, above, textbooks are examples of texts produced in the context of *text production*. As such they represent the first level of a new curriculum policy interpretation (Bednarz, 2004). For this reason they should be seen as playing a central role in the implementation of curriculum reforms (Ball & Cohen, 1996; Remillard, 1999, 2000; Mikk, 2000; Ensor, Dunne, Galant, Gumedze, Jaffer, Reeves & Tawodzera, 2002; Tani, 2004). Mikk (2000) notes that curriculum reforms do not work until new ideas have been translated into textbooks, as teachers rely on them in selecting the content and methods for teaching their lessons. In geography, as in other subjects, textbooks are sources of facts, concepts and generalisations, and hence they "could be real agents of change to assist in the implementation of innovations" (Bednarz, 2004, p.224). Textbook analysis therefore forms another important layer of curriculum research seeking to understand shifts in the content and pedagogy of a school subject, and the values underlying a new curriculum (Ensor, et al., 2002; Tani, 2004; Tracana, Ferreira, Ferreira & Carvalho, 2008). In this study, I analyse three geography textbooks to explore their degree of congruence with environmental education as conceptualised in LEESP.

While it is generally acknowledged in the literature that textbooks are valuable teaching and learning resources in supporting curriculum change, their ability to shape classroom practice is limited (Remillard, 1999; Ensor et al., 2002). For instance, in a study conducted in the United States of America, Remillard (1999) observes that the activities recommended in textbooks do not necessarily benefit learners as intended because encounters with the curriculum represented in the textbooks are mediated by teachers' decisions. These decisions are influenced, inter alia, by teachers' interpretation of the textbook and their beliefs about teaching and learning (ibid.). So, while textbooks may create opportunities for recontextualisation, teachers' attitudes and ideology may remain at odds with the intended change and thus preserve the status quo.

Similarly, Ensor et al. (2002) report research findings pointing to a tension between the inductive style prioritised by a primary school mathematics textbook, and the deductive approach preferred by most teachers in South Africa. They note that this tension resulted in the fragmentation of the systematic structure of the textbook at the level of classroom practice (ibid.). They conclude that although textbooks play an important role in curriculum transformation, changing teachers' pedagogic practices requires more than introducing new textbooks. They suggest that to support teacher change from deductive teaching to an inductive approach would require combining the use of textbooks with in-service teacher education. In the next section I review the literature on teacher professional development as a strategy to support teacher change.

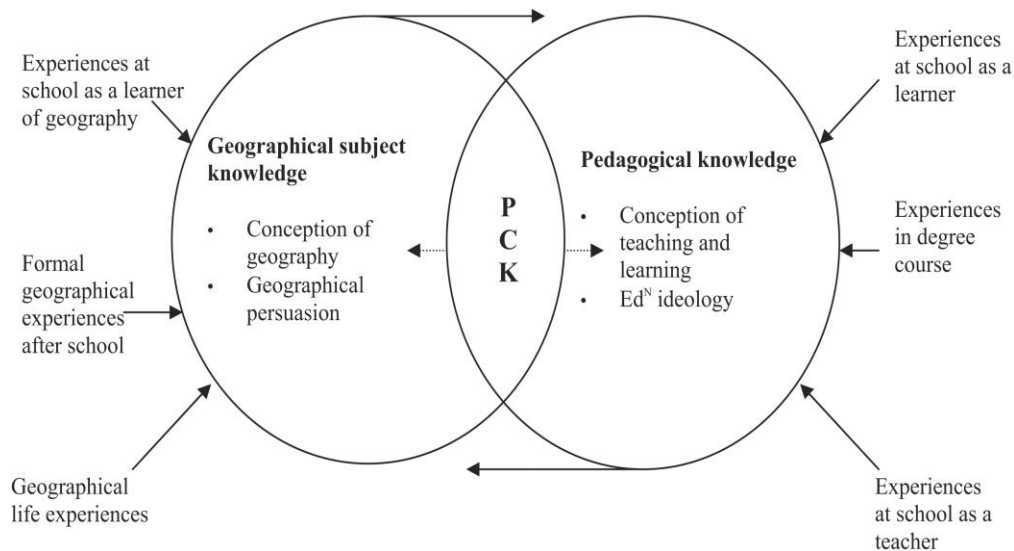
#### **4.11.2 Teacher professional development**

The role of teacher professional development in supporting curriculum change is well recognised in the literature (Fullan, 1991; Onwu & Mogari, 2004; Luft & Roehrig, 2007; McKernan, 2008; Wilmot, 2009). Onwu and Magori (2004) report research findings suggesting that successful school reform, in the context of South Africa, requires systematic teacher development initiatives to improve their content knowledge, skills and attitudes. Similarly, Wilmot (2009) suggests that external support in teacher professional development can be an effective strategy in ensuring the successful implementation of curriculum reform. More specifically, such external interventions/support can help change teachers' epistemological beliefs (Luft & Roehrig, 2007).

While it has been a common practice to support curriculum reform and change with teacher pre-service and in-service training programmes, the problem of implementation still persists, especially in the developing world (Muzvidzewa & Seotsanyane, 2002; Tabulawa, 2002; Onwu and Magori, 2004; Wilmot, 2009). In view of this, many scholars in the field of curriculum theory and practice have advocated the adoption of more empowering models of teacher professional development, such as action research, to encourage teachers to develop both content and professional knowledge (Carr & Kemmis, 1986; Shulman, 1987; Mokuku, 1999; Carl, 2002; McKernan, 2008; Wilmot, 2009).

Among the many models available in the literature, I was attracted to the model of pedagogic content knowledge (Shulman, 1987), as it applies directly to both the pre-service and in-service teacher education that I am involved in. In this model, Shulman contends that teachers need two types of knowledge if they are to implement a curriculum policy effectively. These are, first, content knowledge, which emphasises knowledge of the subject matter in terms of its nature, the key principles and concepts. Second is pedagogical knowledge, which is concerned with knowledge about teaching and learning. As described by Shulman (1987), pedagogic content knowledge (PCK) entails knowledge about structuring and presenting content to the learners, and knowledge about common conceptions and misconceptions among learners, and the difficulties they often encounter. This knowledge lies at the intersection between content knowledge and pedagogical knowledge, thus suggesting that initial teacher training programmes should strike a balance between the two.

Martin (2008), building on the Shulman's (1987) conception of pedagogic content knowledge, proposes a model of knowledge bases for geography teaching. The model shows a host of factors influencing geography student teachers' subject and pedagogical knowledge bases. This model is shown in Figure 4.2.



**Figure 4.2 A model of teachers' professional development**

Source: Martin (2008, p. 22)

As can be seen from the diagram, teachers' knowledge base is influenced by prior experience and formal teacher education. This suggests that initial teacher education should take account of what prospective teachers bring with them from their secondary schools and life experiences as a basis for the acquisition of new knowledge. Consistent with the Shulman's (1987) theory of pedagogical content knowledge, the model recognises the importance of striking a balance between subject content and pedagogical knowledge. In view of the overlapping nature of content and pedagogical knowledge, Martin (2008) argues that in order for student teachers to shift from the perspective of the learner to that of the teacher, they need to develop a clear awareness of the two types of knowledge.

Curriculum research done in different national contexts generally shows that teachers face serious challenges when they are not well grounded in both content and pedagogical knowledge (Handel & Herrington, 2003; Alexandre, 2009). Handel and Herrington (2003) present research findings suggesting that mathematics teachers' lack of clear pedagogical knowledge inhibits their efforts to implement new teaching approaches. They report that the teachers who participated in their study relied on their own beliefs, situated in behaviourist approaches, because they were not aware of current trends in teaching and learning. Similarly, Alexandre (2009), on the basis of the research findings of a study carried out in Portugal, contends that the lack of epistemological awareness of geography as a school subject, constrains curriculum innovations seeking to introduce changes in classroom practice.

The implication of Shulman's (1987) model of teacher professional development in the context of this study is that if geography teachers do not have a sound knowledge of the content of the subject they may not realise the opportunities offered by the content for promoting environmental education. Secondly, a lack of grounding in knowledge of curriculum development may interfere with their ability to apply innovative environmental education ideas in their teaching of geography. Application of this model in geography teachers' professional development programmes can enhance their capacity to operate as curriculum recontextualisers (Bernstein, 1996, 2000) rather than mere implementers.

In support of more empowering participatory models of teacher professional development, Wilmot (2009) argues for a more reflexive practice that is epistemologically empowering and sensitive to the specific contexts of schools and the nature of the change envisaged. She proposes a model of teacher professional development built on the following four pillars:

- a spiral curriculum for the acquisition of foundational knowledge, that is understanding of the theory and practice of the change process;
- modelling of constructivist and learner-centred interactional pedagogy;
- apprenticeship, which is concerned with the preliminary application of knowledge in the classroom; and
- metacognition, which enables reflection on the process of change and taking action to refine and improve innovations (Wilmot, 2009).

This model can be applied in the context of initial teacher education programmes in Lesotho to support teacher change for the implementation of environmental education within secondary school geography. Combined with Shulman's (1987) ideas of content and pedagogic knowledge, the model has the potential to enhance epistemological awareness of the role of school geography in promoting environmental education in the context of Lesotho. Teachers may be aware of the nature of geography in relation to environmental education, but lack reflexive competences to realise the opportunities that the subject and their specific school contexts offer for promoting environmental education within the subject. This suggests that curriculum research should seek to understand whether or not teachers attempting to implement curriculum innovations recognise the theory and realise the practice of the change process as it relates to their contexts.

In Chapter 12, I apply insights from the theoretical ideas presented in this section to the research findings of this study to propose a teacher professional development model that can support curriculum reform processes in Lesotho.

#### **4.12 Contextual factors constraining curriculum change**

That curriculum reforms are often characterised by continuities rather than change is a widely acknowledged fact both internationally and in Lesotho (Cuban, 1992; Prawat,

1992; Ansell, 2002, Muzvidzewa & Seotsanyane, 2002, Handel & Herrington, 2003, 2003; Spillane et al., 2002; Cotton, 2006). Cuban (1992) describes curriculum change by distinguishing between two types of planned change, namely, incremental change and fundamental change. The former refers to efforts made to enhance the existing curriculum with the aim of correcting deficiencies in policies and practices, without changing the normal operations of classrooms and schools. Introducing new textbooks and subjects represents this type of change. By contrast, fundamental change is transformative as it seeks to alter the essential ways in which schools operate, by introducing new goals, structures and roles intended to change familiar ways of operating (ibid.). Unfortunately, as the literature shows this type of change is difficult to achieve due to the fact that schools operate within the constraints of contextual and structural factors embedded in society and history (Tabulawa, 1997, 2003). These factors include teachers' epistemological beliefs, learners' attitudes, and organisational structures within schools and broader educational system.

#### **4.12.1 Teachers' epistemologies**

The influence of teachers' epistemological outlooks on curriculum reforms has been an important area of curriculum research (Prawat, 1992; Schraw & Olafson, 2002; Handel & Herrington, 2003; Bignaught, 2008; Alexandre, 2009). I use the term teachers' epistemologies, after Schraw and Olafson (2002) and (Bignaught 2008), to refer to teachers' beliefs about content, pedagogy, and specific contexts which may interfere with their ability to interpret and enact a new curriculum policy.

In Section 4.4 of this chapter, I discussed three knowledge paradigms as conceived by Habermas (1972). Though not making reference to Habermas, Schraw and Olafson (2002) present a similar theory of teacher epistemologies. Drawing on a large body of literature in philosophy and psychology, they make a distinction among three world views underpinning teachers' epistemological beliefs. These are *realist*, *contextualist* and *relativist* world views. While I fully acknowledge the strength of Habermas' theory of knowledge interests, I briefly describe these world views here to refine my theoretical lenses for analysing geography teachers' epistemological beliefs as illustrated in their discourses and classroom practice (see chapters 10 and 11).

Schraw and Olafson (2002) indicate that teachers subscribing to the *realist* world view have an objective view of knowledge, and believe in a unilateral mode of communication in which knowledge is transmitted from the expert (in this case the teacher) to the learner, who is regarded as a passive recipient of that knowledge. Teachers holding a *contextualist* epistemology believe in a constructivist view of knowledge and consider themselves to be knowledge facilitators rather than knowledge transmitters. Such teachers often use active learning strategies engaging learners in a variety of activities. However, citing John Dewey, Prawat (1992, p.357) warns of adopting a “naïve constructivism” by equating activity with learning. Thus, as Stevenson (2007) also notes, not all the environmental and other activities that teachers organise for learners may be consonant with a constructivist world view.

Similar to the contextualist world view, is the *relativist* world view, whose subscribers hold an epistemological belief that “each learner constructs a unique knowledge base that is different but equal to other learners’ knowledge” (Schraw and Olafson, 2002, p.3). Teachers holding this world view see themselves as knowledge collaborators, whose role is to create learning contexts where learners can discover information on their own and develop independent thought. As can be seen from this description, the teachers’ epistemological beliefs associated with these three world views can be linked to the technical, practical and critical paradigms, respectively (see sections 4.4.1, 4.4.2 and 4.4.3).

As mentioned in Section 4.12, research studies conducted in different national contexts indicate that teachers’ beliefs about teaching and learning usually support traditional teacher-centred methods of teaching, underpinned by the technical paradigm, and these beliefs interfere with their ability to implement curriculum reforms (Prawat, 1992; Tabulawa, 1997; Walker, 1997; Spillane et al., 2002; Blignaut, 2008). It is noted in the literature that it takes time for teachers to change their beliefs (Schraw & Olafson, 2002), as they are often embedded in the culture of their society and its history of education. For example, the authoritarian culture of society, reinforced by the bureaucratic-authoritarian model of British colonial education, is reported to constrain curriculum change towards learner-centred education in Botswana (Tabulawa, 1997). Similarly, Blignaut (2008), reporting from

the national context of South Africa, notes that teachers' experiences, beliefs about knowledge and effective teaching and learning interact with other contextual factors to impede curriculum change.

Of particular relevance to this study is more recent research conducted by Alexandre (2009) in Portugal. The findings of his study suggest that geography teachers' beliefs about the nature of the subject, inherited from their socialization as students and as student-teachers, militate against curriculum reform in the subject. Their beliefs often support the academic tradition and factual descriptive approach to the teaching of geography (ibid.). Alexandre (2009) therefore recommends that initial teacher education programmes should provide student teachers with opportunities to understand geographical thought in relation to geographical education and developments in the broader field of education. This would assist teachers in their sense-making and implementation of a new curriculum policy. Further to explore the question of teachers' epistemologies, I provide a brief discussion of a curriculum sense-making and implementation framework proposed by Spillane et al. (2002).

### **A curriculum sense-making and implementation framework**

Given that curriculum change is influenced by teachers' epistemologies, investigation of such constructs should enhance an understanding of curriculum reform. Spillane et al. (2002) developed a framework that could assist curriculum researchers in understanding how teacher-related factors interact with contextual factors to impede the process of curriculum sense-making and implementation. This framework comprises three elements. The first element is **individual cognition**, which recognises that the development of new knowledge occurs through existing structures, such that if those structures are not supportive, little may be achieved in terms of realising change. The following quotation clarifies the challenge posed by teachers' prior beliefs and practices in the enactment of a new curriculum policy:

Teachers' prior beliefs and practices can pose challenges not only because teachers are unwilling to change in the direction of the policy but also because their extant understandings may interfere with their ability to interpret and implement the reform in ways consistent with the designers' intent. (Spillane et al., p. 393)

Since the acquisition of new knowledge is influenced by existing structures, more often than not there is a natural tendency among implementing agents to associate new curriculum ideas with familiar practices – especially when the innovations are introduced via a top-down method (Spillane et al., 2002; Blignaut, 2008). This observation suggests that those introducing curriculum changes should allow teachers enough time to conceptualise change and reflect on its implications for their practice.

The second element of the framework is **situated cognition**. This element recognises the important role played by the specific contexts in which the teachers' sense-making and enactment of the new curriculum policy occurs. Spillane et al. (2002) identify school contexts such as organisational structures, the social environment and the historical context as important factors shaping teachers' sense-making of new curriculum policy. I elaborate on some of these factors later in Section 4.12.3.

The third and final element is **policy representation**. This is concerned with the policy signal, which refers to expected outcomes as expressed in policy messages and design. The extent to which policy intentions are clear will influence teachers' interpretation of such policies. However, Spillane et al. (2002), in line with Cuban (1992), argue that policies that require fundamental changes in implementing agents' knowledge structures are more likely to encounter implementation problems than those which require incremental changes. Although they acknowledge that policies are subject to multiple interpretations in the context of practice (Bowe et al., 1992), Spillane et al. (2002) take a technical view of policy analysis. They suggest that, because policy texts represent ideas about reforming practice, curriculum policy research needs to establish whether a policy was *understood as intended*.

Notwithstanding the limitations of this framework, notably that it is grounded in national education systems with good facilities and efficient teachers' networks, this study benefited from the work of Blignaut (2008), who used the framework to investigate curriculum change in some South African schools. The framework can be used to supplement the policy cycle model described in Section 4.7.1 to analyse curriculum implementation in the context of classroom practice. In Chapter 10, I draw on this model to generate theoretical insights for understanding geography teachers'

sense-making and interpretation of environmental education as it relates to their subject.

#### **4.12.2 Learner factors**

It is recognised in the literature that learners' traits are important factors to be considered in curriculum reform, as their responses to new teaching strategies "may constrain teachers' ability to make radical changes" (Cotton, 2006, p. 78). Research done, particularly in the African context, shows that learners' aspirations and expectations, limited cognitive abilities and cultural background may inhibit any attempt to introduce a socially constructivist learning approach. Of particular interest to me here, are the research findings of Tabulawa (1997), O'Sullivan (2004) and Rogan (2007), reported in the national contexts of Botswana, Namibia and South Africa respectively.

Tabulawa (1997) reports research findings showing that learners come to school with the expectation that they are going to learn by listening to the teacher, taking instructions and doing teacher-assigned work in order to attain good examination results – rather than becoming 'centres of learning,' as required in learner-centred methods. These expectations, coupled with child-rearing practices in many African countries, constrain learner-centred education reforms (Tabulawa, 1997; O'Sullivan, 2004). In an African cultural context, as Tabulawa (1997) notes, an adult is regarded by children as a source of knowledge. This suggests that within such a cultural milieu, learners tend to develop the view that knowledge transfer is hierarchical (from an adult to a young one). In view of this cultural influence on knowledge transfer, it appears that introducing socially critical teaching approaches, that require learners to engage with the teacher and sometimes elderly members of their communities on aspects of content and environmental issues, may create contradictions between school practice and social reality.

Learners' language proficiency is also reported by Rogan (2007) to be one of the factors militating against the successful implementation of an outcomes-based curriculum in some rural schools in South Africa. Rogan however, identifies learners'

obedience, which is a common characteristic of learners in rural schools, as an opportunity for reform.

#### **4.12.3 Organisational structures**

Implementing agents encounter policy in a complex web of organisational structures, professional affiliations, social networks, and traditions. Both macro and micro aspects of the situation are important for implementing agents' sense-making. (Spillane et al., 2002, p.404)

As this quotation indicates, the organisational structures within which curriculum policy is enacted can either hamper or promote change. In those school contexts where there is no collegial social environment, teachers may get frustrated and abandon their efforts to try new ideas. Spillane et al. (2002) suggest that implementing agents need to work within a community of practice, where they can support each other and make sense of new ideas. Thus at school level there is a need for a favourable social climate where teachers can work collaboratively. In the absence of such a collegial environment, curriculum reforms promoting integrated approaches may face serious challenges. The importance of warm and open social relations among teachers attempting to implement curriculum change is succinctly captured by Snyder, Bolin and Zumwalt (1992, p. 417): "The more collegiality, trust, support, interaction and open communication between teachers, the greater the degree of implementation [of curriculum innovations]".

Unfortunately, as the literature shows, in many countries this collegial environment does not exist, given the isolated nature of teachers' work, heavy workloads and inflexible time-tables (Lee 2000; Cotton, 2006; Stevenson, 2007; McKernan, 2008; Martina, Hursh & Markowitz, 2009). In elaborating on some of these factors Martina et al. (2009), for example, note that in the US, as would be the case elsewhere, teachers typically work in an isolated environment. They argue that this isolation is reinforced by the organisational structure of schools, wherein teaching is conducted in a private classroom space, which can be likened to a black box. Making classrooms private spaces creates a culture of individualism among teachers, to the extent that they generally do not like to be observed by or to observe other teachers (ibid.). These factors, coupled with the traditional role of schools (to transmit basic knowledge and

skills), may pose a serious challenge to the implementation of progressive educational ideas such as reflective practice, critical thinking and participatory learning approaches (Carr & Kemmis, 1986; Walker, 1997; Stevenson, 2007; McKernan, 2008).

External support from national or district education authorities and other key stakeholders is also identified as an important organisational structure influencing the implementation of curriculum reform and change (Fullan, 1991; Snyder, Bolin & Zumwalt, 1992; Lee 2000). In his widely quoted book, Fullan (1991) asserts that the successful implementation of curriculum is influenced by support structures in the broader society. These structures include not only departments of education, but also faculties of education and other regional organisations – in this case, subject associations and environmental education networks. If teachers have a perception that they are not receiving support from these structures they may develop a sense of powerlessness in respect of trying out new curriculum ideas. Lee (2000) reports research evidence to the effect that inadequate assistance from the Department of Education and environmental organisations in China had a negative influence on teachers' receptivity of environmental education innovations. This confirms Cornbleth's (1990) argument that curriculum change requires supportive structures: that changing the curriculum may require changing these structures as well.

There is also a large body of literature suggesting that public examinations exert undue pressure on teachers, thereby making them reluctant to enact new policy, especially if the innovation is not paired with incentives in the form of external support and clear guidelines (Lee, 2000; Yeung, 2001; Tabulawa, 2003; Cotton, 2006). As I mentioned in Section 4.8, examination agencies are important curriculum decision-makers, and because teachers generally teach for examinations, the successful implementation of curriculum reforms depends in part upon how supportive and responsive the examining bodies are. Lee (2000) notes of the education system in China, that classroom teaching is characterised by teacher authority and student obedience, reflecting a perceived need to cover the examination syllabus within the given time. Similarly, in the UK, the failure to implement environmental education underpinned by a socially critical paradigm is attributed to the demands of external examinations (Cotton, 2006).

As noted in Chapter 2, similar observations have been made in Lesotho, where an overemphasis on public examinations is seen by many as one of the root causes of curriculum stasis (Muzvidzewa & Seotsanyane, 2002; Ansell, 2002; Mokuku et al., 2005; Nketekete & Motebang, 2008). In particular, Nketekete and Motebang (2008) claim that public examinations for business education do not reflect core values and skills, with the result that most teachers stick to outdated didactic methods incapable of promoting the potential for enterprise and entrepreneurship.

#### **4.13 Conclusion**

The review of literature presented in this chapter illustrates that the curriculum and attempts to reform it are influenced by various knowledge ideologies or paradigms. Each of these paradigms has ontological, epistemological and methodological assumptions about the curriculum and curriculum change, and embedded in these assumptions are definitions of curriculum and curriculum change. Within the framework of these knowledge paradigms, conceptions of curriculum vary on a continuum from a plan of what should be taught, to a broader view in terms of which it is seen as an experience that a learner goes through under the guidance of a school, conceived of as a democratic sphere. Curriculum change may be seen, at one extreme, as a technical exercise involving a change of goals and objectives in order to align them with national needs, while, at another, it is seen as serving the purpose of emancipating learners with a view to achieving social transformation.

The chapter has also described the process of curriculum policy-making, emphasising that it is political in nature, characterised by struggle, contestation, domination and exclusion. This process is illustrated in this chapter through a policy cycle model describing what happens from the first level of policy formulation to the level of classroom practice where policy is enacted. It emerged from the description of these processes that curriculum policy is often recreated in the context of practice, rather than being implemented as intended. The literature reviewed in this chapter shows that there are international influences on curriculum reforms, especially in developing countries.

I have also reviewed the role of textbooks and teacher professional development as strategies used to support curriculum change. It emerged that textbooks on their own may not be effective agents of change because teachers tend to prefer books that support their existing practices. Hence, fundamental curriculum reforms require effective teacher professional development. Finally, the literature review illustrates that curriculum policy implementation at classroom level is mediated through contextual factors which may be internal or external to the classroom. Some of these factors are implicit and difficult to change.

The review of literature presented in this chapter provides a theoretical context for analysing the social context of LEESP policy guidelines and what emerged from that process (see Chapters 6 and 7). It also provides theoretical perspectives for analysing geography curriculum materials and classroom practice to understand how environmental policies relate to other existing texts (chapters 8 and 9), and how teachers interpret their messages and implement them at the level of classroom practice (chapters 10 and 11). Finally, the chapter assisted in the process of choosing a research methodology, which is presented in the next chapter.

## **CHAPTER 5 RESEARCH METHODOLOGY AND METHODS**

### **5.1 Introduction**

In this chapter I describe the research methodology and the methods that I used to organise this study and generate data. I first describe my research orientation, and then the case study method. I also describe the research schools and research participants. I then discuss the methods that were used for data generation and analysis. Finally, I describe the measures that I took to ensure the validity and trustworthiness of the findings of the study.

### **5.2 Research orientation**

This study adopts an interpretive qualitative research orientation, using document analysis, interviews and classroom observation for data generation. Interpretive qualitative research is based on the epistemological assumption that knowledge is “socially constructed by people in interaction with their world” (Merriam, 2002, p. 3). Because knowledge is socially constructed, this research orientation prioritises subjective reality over objective reality (ibid.), enabling researchers to examine how people make sense of their lives and interpret their situations, and how their sense of self develops in interaction with others (Jackson, 1995; Denzin and Lincoln, 2005; Berg, 2007). This suggests that the primary interest of researchers operating within this tradition should be to *understand* and *interpret* the subjective world of human experience (Merriam, 2002; Cohen, Manion & Morrison, 2007). To understand this subjective world, qualitative researchers, as Merriam (2002) suggests, become a “primary instrument” in terms of data collection and analysis. She describes the advantages of the researcher being at centre of the research process as follows:

Since understanding [and interpretation] is the goal of this research, the human instrument, which is able to be immediately responsive and adaptive, would seem to be the ideal means of collecting and analysing data. Other advantages are that the researcher can expand her understanding through non-verbal as well as verbal communication, process information (data) immediately, clarify and summarise material, check with respondents for accuracy of interpretation and explore unusual and unanticipated responses [while still in the field]. (p.5)

My choice of an interpretive research orientation is based on the view that curricular knowledge is socially constructed and shaped by contextual factors operating within and beyond schools and classrooms (Cornbleth, 1990). Thus the purpose of an interpretive research project is to understand “social interactions and everyday patterns of communication that create and sustain (or modify) social rules and meaning” (ibid., p.195). Because this study has a critical interest<sup>2</sup> as well (without a transformative agenda), my approach could also be described as “reflexive interpretation”, involving interaction with empirical material, and the interpretation of and critical reflection (including self-reflection) on what emerges from the research process (Alvesson & Skoldeberg, 2000, p. 248). This multidimensional reflexivity would allow for a reciprocal interaction among theory, data and my own personal subjectivity, which is one of the strengths of a qualitative research approach (ibid.).

### 5.3 The case study method

Given the focus of this study, the case study method is most appropriate for exploring how geography in the selected model school and its neighbours is interacting with environmental education after the Lesotho Environmental Education Support Project’s (LEESP) intervention in these schools. A case study may be defined variously, according to varying philosophical orientations to research. Yin (2009) defines a case study as follows:

Case study is an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between the phenomenon and its context are not clearly evident. (p.18)

While this definition may be appropriate for qualitative research, the use of the word **empirical** implies natural scientific empiricism, which is based on the positivist assumption that research evidence can only be obtained through direct experience of the phenomenon under investigation. In this respect, Yin foregrounds theory in the research process, whereas in qualitative research there should be a dialectical interaction between theory and context (Alvesson & Skoldeberg, 2000; Merriam,

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<sup>2</sup> The study has a critical interest only to the extent that I ask questions about how the social and political aspects of the situation shape the reality for a deeper understanding of the process of curriculum reform (McLaren, 2007).

2002). Yin's definition, as stated above, contrasts with Stake's (1995) perspective on a case study, which is essentially interpretive. He describes case study as "the study of the particularity and complexity of a single case, coming to understand its activity within important circumstances" (p. vi). I adopt this interpretive understanding of case study, as my research had a primary interest in understanding and interpreting the subjective worlds of the research participants in their specific contexts. As Bell (1993: 8) notes:

The greatest strength of the case-study method [within an interpretive qualitative tradition] is that it allows the researcher to concentrate on a specific instance or situation to identify, or attempt to identify, the various interactive processes at work. These processes may remain hidden in a large-scale survey but may be crucial to the success or failure of systems or organisations.

In this regard, the case study method enabled an in-depth investigation of educational practice at a particular site (Bassegy, 1999; McMillan & Schumacher, 2001), so as to gain an understanding of the contextual factors that hinder or enable curriculum change in school geography.

Stake (2005, p.443) contends that, "case study is not a methodological choice but a choice of what is to be studied". He further makes a distinction between intrinsic case study and instrumental case study. The purpose of the former is to establish an understanding of a particular case for its own sake, especially when a researcher has a special interest in the case. The latter kind of case study has the purpose of understanding an issue through an examination of the case. In this event, as Stake (2003) observes, the case is of secondary interest for it plays a facilitatory role in understanding something else. Instrumental case study may also have the purpose of making comparisons between individual cases.

This study could be described as both an intrinsic case study and an instrumental case study, for two reasons. First, I used the case study method for studying curriculum change in junior secondary geography. I studied this case because of my special interest in the subject as a geography educator in Lesotho who is concerned about the status of the subject. Within this case there is the Lesotho Environmental Education Support Project (LEESP), which sought to bring about curriculum innovations in the

content and pedagogy of school subjects through the introduction of environmental education.

Second, other than studying curriculum change in geography for intrinsic purposes, my primary interest was to help foster a deeper understanding of the general process of curriculum reform in the Lesotho national context. In this regard, the study can be described as an instrumental case study. It is also an instrumental case study to the extent that I made a cross-case comparison (though not in detail) between schools that received LEESP training in environmental education and those that did not, so as to gain some idea of whether or not there was real change in the geography curriculum following the LEESP intervention.

#### **5.4 Research schools and participants**

This study involved a total of five schools, one of which was a LEESP model school that received 10 workshops on the implementation of environmental education. Two schools participated in the second phase, of environmental education dissemination by model schools. As was indicated in Chapter 1, this dissemination process went as far as two workshops only due to insufficient financial resources. As mentioned in Section 5.3, in order to establish a control cross-case comparison, the study involved two other schools that did not receive LEESP training. Table 5.1 portrays the case study schools in terms of their category and location. For ethical reasons, I use pseudonyms to denote schools.

**Table 5.1: Case study schools**

<b>Category of schools</b>	<b>Names of schools (Pseudonyms)</b>	<b>Location</b>
Model school	Menkhoaneng High School	Urban school
Neighbouring schools	Mohokare High School Qiloane Secondary school	Urban Rural
Other schools (control case schools)	Lepoqo High School Letlama High School	Urban Rural

The model school was selected because it was the only LEESP model school that offered geography at junior secondary level (Grades 8, 9 and 10) at the time of this research. The school held environmental education dissemination workshops at three other neighbouring schools. One of these schools (Mohokare) offers geography, and was therefore included in the sample. At Qiloane Secondary School environmental education was disseminated by another school, which does not offer geography at junior secondary level. I refer to this school as a neighbouring school because that was the generic term used during the LEESP intervention to describe other schools where the second phase of dissemination would be conducted by the model schools. This school (Qiloane Secondary) was chosen on the basis of convenience, as it was within easy reach of my place of work. The two control schools were also selected by convenience sampling, and by taking into account the characteristics of the model school and one other rural school which participated in the second phase of environment education dissemination.

The fieldwork part of this research was conducted in these five schools, all of which offer geography at junior secondary level (Grades 8, 9 and 10). The model school and one other school are located in the Botha-Bothe district. Two other schools are located in the Maseru district, while one school is located in the Berea district. More details about these schools are provided in Chapter 11 (see Section 11.2).

From Menkhoaneng High School (a model school), I worked with three geography teachers who were teaching the subject at the school during the LEESP intervention. I then asked two other teachers from Mohokare High School, who were involved in the dissemination workshops that were given by the model school, to participate in the study. At Qiloane Secondary School, where environmental education dissemination was partially carried out by another model school, I worked with one geography teacher. This was the only geography teacher at that small secondary school. From the two control case schools I worked with five teachers: three from Lepoqo High School and two from Letlama High School. This meant a total of eleven teachers, of which seven had received training in environmental education. One of the teachers at Lepoqo High School had received training in environmental education while she was in a former LEESP model school before transferring to this school. Initially, I did not plan to include this teacher in the sample of teachers. However, at a later stage during

my school visits I decided to include her in order to gain some insight into what happens to LEESP pedagogic innovations when teachers transfer between schools. My interest in this respect was to find out what happens to the new curriculum ideas when teachers operate in different school cultures.

Other participants in this study included three senior government officials in the Ministry of Education and Training (MOET), who were members of the LEESP's Steering Committee, nine professional staff members of the National Curriculum Development Centre (NCDC) who were directly involved in LEESP's activities, three members of the former LEESP monitoring and research team, and three staff members of the Examinations Council of Lesotho (ECOL), including the former registrar of the council. Appendix A contains a list with profiles of the people who participated in the study.

### **5.5 Methods of data generation**

This study used document analysis, interviews and classroom observation for data generation. Table 5.2 features a summary of the research design, showing the methods of data generation, the purposes for which each method was used, the instruments used and data coding system where appropriate.

**Table 5.2: Research design**

Methods for data generation	Purposes	Instrument used for data generation	Coding system
<p><b>Phase I</b> Document analysis:</p> <ul style="list-style-type: none"> <li>• Analysis of EE Reference Note and other LEESP's relevant documents</li> <li>• Analysis of geography syllabus</li> <li>• Analysis of geography textbooks</li> </ul>	<p>To understand the view of environmental knowledge, its underlying values and the intended pedagogy</p> <p>To identify topics relating to EE, and the intended pedagogy – how these connect with the EE discourse? To understand the view of geography knowledge</p> <p>To determine the level of inclusion of EE content, the kind of classroom practice that they promote</p>	<p>Analytical categories developed from Bernstein's concepts of classification and framing</p>	<p>Mainly inductive</p> <p>Both inductive and deductive using Bernstein's principles of <i>classification</i> and <i>framing</i> scales</p> <p>Analytical categories developed from curriculum theory, EE and geography education literature</p>
<p><b>Phase II</b> Interviews (semi-structured)</p> <ul style="list-style-type: none"> <li>• Members of LEESP Steering Committee</li> <li>• Curriculum developers</li> <li>• Geography teachers</li> </ul>	<p>To elicit information on what gave rise to LEESP intervention, and to get their views on the operations and implementation of LEESP.</p> <p>To explore possible tensions and contestations encountered at the initial stage of the project and dissemination workshops</p> <p>To gather information on their interpretation of EE and the challenges they faced. To explore their epistemological beliefs</p>	<p>Semi-structured interview schedule</p> <p>Semi-structured interview Schedule</p> <p>Semi-structured interview schedule</p>	<p>Mainly inductive</p>
<p><b>Phase III</b> Classroom observations</p>	<p>To understand how geography teachers are translating EE principles into their classroom practice</p>	<p>Open-ended observation schedule</p>	<p>Classification and framing (Bernstein)</p>

### 5.5.1 Document analysis

Creswell (2003, p. 187) notes that document analysis –enables a researcher to obtain the language and words of participants... [and] represents data that [is] thoughtful, in

that participants have given attention to compiling [it]”. It also enables researchers to access the ideas of people who are not available at the time of the research (Cohen et al., 2007). For the purpose of this study, I analysed both primary documents and secondary documents. The key primary documents analysed are the *Reference Note for Environmental Education in Lesotho*, along with the environmental education teachers’ handbook and other documents such as the project document (see Chapter 6), and *Lesotho Junior Certificate Geography Syllabus 2004*. The secondary documents that I analysed are the three new geography textbooks published and prescribed for teaching under the Textbook Rental Scheme introduced by the Lesotho government in 2004 with financial aid from the World Bank. The new textbooks were produced at a time when environmental education had been identified as one of the emerging themes to be integrated across the curriculum (Ministry of Education, 2002).

The insights drawn from analysis of the *Reference Note* and the geography syllabus were used to analyse the textbooks used to teach geography in the schools that were selected for the purpose of this study. As literature review presented in Chapter 4 (see Section 4.12.1) shows, textbooks are important cultural artefacts influencing teachers’ pedagogic practice, and as such they are real agents of curriculum change. Hence, I analysed all three textbooks used in the research schools to identify the changes in school geography consequent on the declared government intention to introduce environmental education in formal education. The textbook analysis was also intended to explore the congruence between these changes and environmental education as expressed in the LEESP’s documents.

As indicated above, the textbooks analysed for this research were produced at a time when environmental education had been declared one of the key themes to be included in the curriculum for all subjects. It is important to note that the evaluation criteria that were used to select these books included environmental education content and learner-centred methodology. Thus although the textbooks were written and published parallel to LEESP’s activities, I examined them to explore whether their content and pedagogy were consonant with the principles of environmental education. My assumption here was that implementation of environmental education as conceptualised in LEESP would depend on, among other things, the extent to which

the textbooks are congruent with the envisaged change. It is acknowledged in the literature that enactment of a new curriculum policy in the context of practice relies on other existing policies or texts (Bowe et al., 1992; Ball, 1994).

### 5.5.2 Interviews

Interviews are personal conversations which, as Patton (2002, p. 341) suggests, can be used ~~to~~ allow [researchers] to enter into other people's perspectives". Patton further notes that interviews are based on the assumption that the ~~perspective~~ perspective of others is meaningful, knowable, and able to be made explicit" (ibid.). Interviews may be structured, unstructured or semi-structured (Holstein and Gubrium, 2003). In the case of structured interviews, specific questions and the order in which they are asked are determined prior to the interview process, whereas unstructured interviews explore the topic areas without specific questions or a pre-determined order (Merriam, 2002). A mix of more and less structured questions constitutes the semi-structured interview (ibid.). For this study, I conducted face-to-face semi-structured interviews with all the participants. Semi-structured interviews enabled me to ask open-ended questions and to probe participants' responses (Lankshear & Knobel, 2004).

I held interviews with the Director of NCDC in order to obtain information on the rationale for the introduction of environmental education in the formal education system of Lesotho. I had also planned to interview the Chief Education Officer (CEO), who was responsible for curriculum services prior to and during the LEESP intervention. However, it transpired that the office of the CEO was vacant during the larger part of the LEESP operations. My efforts to make contact with the person who was in that office during the preparation phase of LEESP's implementation were not successful as she was busy in the Prime Minister's Office, serving as Secretary. I also interviewed four members of the LEESP's Steering Committee, and the coordinator of environmental education at the NCDC, to get their views on the general operations of the project, and also to understand possible contestations and controversies experienced during the development of the *Reference Note*. To deepen my understanding of the social process of conceptualising and disseminating environmental education, I interviewed eight members of the NCDC professional

staff who were directly involved in LEESP activities. Moreover, I held interviews with three ECOL staff members and three members of the LEESP monitoring and research team (MRT) (see Appendix A).

In order to understand how geography teachers made sense of and enacted environmental education in their specific local and school contexts, I interviewed all eleven teachers who participated in the study. In these interviews I also sought to explore the teachers' views on knowledge, teaching and learning, with a view to understanding how these views interacted or conflicted with environmental education epistemologies. My initial plan was to conduct these interviews after classroom observations, so that the interview questions could be grounded on specific classroom events rather than on what teachers thought ought to be done. However, the teachers of the model school were reluctant to give me access to their classrooms. In response, I changed my research schedule and started with interviews instead of classroom observations. The interviews served to establish common ground and mutual trust.

From the interviews, I was able to generate qualitative data on the teachers' understanding of geography in relation to environmental education, and on contextual factors that enable or hamper implementation of environmental education in geography teaching. These provided a focus for classroom observation. Recognising that some of the challenges facing teachers were possibly related to the social interactions that characterised environmental education dissemination workshops, through the interviews I also sought to establish the extent to which their voice was audible during the training workshops.

Cognisant of the fact that in qualitative research interviews are "collaboratively produced" between the interviewer and the interviewee (Silverman, 2006, p.112), I held all the interviews in a place where the respondents would be free to talk without feeling intimidated. For the teachers, the interviews were held in a quiet room (a science laboratory or spare classroom) where there were no disturbances from other teachers or students. In some cases, however, I had to conduct interviews in my car as there was no spare room. With curriculum developers and senior government education officials, the interviews were conducted in their offices, except in two cases

where the respondents could not make time during office hours and asked me to go to their homes instead.

To further relax the interview environment, I encouraged the respondents to talk in the language they were comfortable with, even though the key questions were asked in English. Where the respondents used more Sesotho than English, I would also code switch accordingly, in order to keep the conversation going.

In each case, I explained the purpose of the interview at the beginning and told the respondents the estimated time we would take. On average, each interview took about 40 minutes. I also inquired from the participants whether I could use a tape recorder to capture the conversation. With the consent of the respondents, I audio recorded almost all the interviews and later transcribed them. The audio recording enabled me to maintain close eye contact with the respondents, to listen carefully to what they said and to probe the responses when appropriate, in the manner of responsive interviewing (Rubin & Rubin, 2005). This would have been difficult to achieve had I been obliged to take copious notes. However, three respondents (one curriculum developer and two teachers) were not audio recorded as they were uncomfortable with the idea. I made a summary of the discussions immediately after the interviews. All the tapes were labelled and kept for data transcription and analysis.

Initial data transcription occurred during the interview phase in order to inform subsequent interviews with other respondents. In most cases this was done in the evening, while I could still remember the key issues raised and the non-verbal responses. I had a maximum of three interviews to transcribe after each day spent in the field. The initial transcription involved summarising the key ideas to develop a general picture of the respondents' views. Each transcript was labelled with the name of the respondent and the date of interview and kept as a hard copy in an appropriate envelop for further transcription and analysis. This initial transcription gave me an opportunity to reflect on my interviewing style and identify areas of possible improvement while I was still in the field. For example, from the initial transcription of the interviews, I noted that in some cases I was in too much of a hurry to get a response, and interrupted the respondents rather than listened patiently to all that they had to say. This problem was addressed in the subsequent interviews. As Cohen et al.

(2007) advise, I actively listened to the respondents, giving feedback appropriately, and showing interest even when they strayed from the topic or when I did not agree with what they were saying, without losing the focus of the interview.

### **5.5.3 Classroom observations**

In order to explore the interface between environmental education and geography at the micro-level of classroom practice, classroom observations were conducted in all five research schools. According to Cohen et al. (2007, p.396) collecting observational data:

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

In this study, classroom observations served the purpose of supplementing data generated through interviews with teachers, and allowed me to make inferences based on teachers' *theory-in-use* rather than *espoused theory*" (Argyris & Schon, as cited in Cotton, 2006, p.71). The classroom observations were also intended to deepen an understanding of the kind of classroom complexities and realities that shape geography teachers' pedagogic practices. Such an understanding would sharpen my perspective on the contextual factors that enable or constrain the integration of environmental education principles into geography teachers' daily classroom practice.

I made an effort to attend lessons specifically relevant to environmental education, taking the role of an *observer-as-participant*" (Scott, 1997, p.166; Cohen et al., 2007, p. 404). According to Scott, *observer-as-participants* formalise their role but make little effort to interact with learners and teachers in classroom situations. I preferred to use this style of participation because it is less intrusive than the *participant-as-observer*," who might also walk around the classroom and talk to the learners about their work (ibid.). I sat at a strategic position in the classroom listening to the teacher's presentation, watching and taking copious observation notes, focusing mainly on the content of the lesson and its style of presentation. On some occasions I

took pictures, with the permission of the teachers concerned, to capture important lesson events, chalkboard summary/illustrations, and certain aspects of classroom settings that I thought would enhance the data analysis. Care was taken to avoid disrupting the lesson.

Assuming an essentially naturalistic observation approach (Adler & Adler, 1994), I used an open-ended observation schedule, drawing pointers from critical curriculum theory and Bernstein's theoretical concepts of classification and framing. In developing this schedule, I adopted the format of an "observational protocol" (Creswell, 2003, pp.188-189) that allows multiple observations and critical reflections during the course of data generation (see Appendix C). I conducted post-observation interviews with the teachers immediately after the lessons.

Taking into consideration the possible negative effects of an external observer on the observed (Patton, 2002; Creswell, 2003), I made at least three observations per teacher. These observations lasted for about eight weeks during the months of February and May, 2008, in four research schools, and two weeks during the month of October 2009 in one other control school. At the end of my school visits, I had observed a total of thirty-seven (37) lessons of between 40 and 80 minutes in duration. For the model school the timing of observations was opportune because it coincided with the period when student teachers from the National University of Lesotho and the Lesotho College of Education were on teaching practice placement. The learners at this school were used to having university and collage staff coming to their school for classroom observation, so my presence in the classrooms was not especially unusual.

## **5.6 Data analysis**

Qualitative data analysis is described in the literature as an iterative process involving description, analysis and interpretation (Wolcott, 2001; Merriam, 2002; Cohen et al., 2007). Descriptive analysis generates an account of the data using direct quotes from documents, interviews or observations. At a second level of analysis, data is systematically arranged according to defined categories to develop a pattern. Wolcott (2001) asserts that the analytic presentation of data must follow scientific procedures,

emphasising factual accounts with little interjection by the researcher. In contrast, interpretative analysis ~~is~~ not derived from rigorous, agreed-upon, carefully specified procedures, but from our efforts at sense-making...” (ibid., p. 33). In this respect, interpretation goes beyond getting factual accounts and identifying patterns, to a deeper level of developing an understanding by explaining and reflecting on the data in order generate findings.

For this research, I operated according to these three layers of data processing. In the first cycle I analysed the data generated through content analysis of the documents specified in Section 5.5.1, interviews and classroom observations in order to describe and document what geography is being taught and how it is being taught at the five schools that participated in the study. In some cases, as Table 5.1 shows, the descriptive data was organised according to theoretical categories in order to generate data patterns for interpretation. This descriptive and analytic data enabled me to identify patterns that could be used critically to interpret the geography curriculum documents and classroom practice, drawing insights from critical curriculum theory as discussed in Chapter 3, and making inferences about the ways in which environmental education curriculum change processes might be shaping school geography.

Preliminary analysis of the data occurred simultaneously with data generation, through continual reflection on the data (Creswell, 2003) as it emerged from interviews and classroom observations. But as Patton (2002) suggests, I employed an open-minded approach to allow naturalistic inquiry to occur, rather than initially focusing too narrowly on data analysis. I was also careful that the preliminary analysis did not lead me into premature conclusions because this could ~~interfere~~ with the openness of the naturalistic inquiry, which is its strength” (Patton, 2002, p.436).

As implied in the three levels of data analysis described earlier in this section, I employed both inductive and deductive approaches. Inductive analysis involved an open-ended approach that allowed data dimensions to emerge from individual responses, reading documents and lesson observation notes, rather than presupposing what the important dimensions would be (Patton, 2002). Deductive analysis occurred in terms of the analytical categories drawn from Critical Theory to uncover issues that

surrounded the process of conceptualising and implementing environmental education at the macro-level of curriculum development in Lesotho (see Table 5.2). I also drew insights from Habermas's theory of knowledge interests and Basil Bernstein's theoretical concepts of classification and framing to understand how geography teachers integrate environmental education in their lessons, and to illuminate issues of power and control within the content of geography and the structure of pedagogy.

### **5.6.1 Content analysis of documentary data**

As I have already mentioned in the preceding section, all the documents specified in Section 5.5.1 were subjected to content analysis. According to Berg (2007) content analysis involves the examination of artefacts of social communication, such as written documents and transcriptions of interviews. Although this method is usually applied in quantitative research (Wolcott, 2001; Cohen et al., 2007), Berg (2007) argues that it can be equally effective in qualitative analysis. He explains that:

Textual elements merely provide a means of identifying, organising, indexing, and retrieving data. Analysis of the data, once organised according to certain content elements, should involve consideration of literal words in the text being analysed, including the manner in which these words are offered. (p.307)

In the following sections I describe how I used content analysis to examine LEESP documents, geography curriculum documents and geography textbooks.

#### **5.6.1.1 LEESP documents**

The LEESP documents mentioned in Section 5.5.1 were subjected to a qualitative content analysis focusing mainly on the rationale for the LEESP's intervention, its objectives, activities, and conception of knowledge and pedagogy. This involved deconstructing the documents to uncover tensions, contradictions and paradoxes in their discourses. I also identified dominant values and skills embedded in the *Reference Note* using an analytical tool developed from McKeown's (2006) framework of sustainable development. This analytical tool is shown in Chapter 6 (see Table 6.1). The documents were analysed alongside other Lesotho education

policy documents to establish the extent to which LEESP curriculum intentions are compatible with educational ideals in Lesotho.

### **5.6.1.2 Geography curriculum document**

For the purposes of this study, I analysed the junior secondary geography curriculum document to explore the opportunities that are provided for integrating environmental education within geography. I made use of descriptive analysis, drawing insights from curriculum theory and general literature on environmental and geographical education. I also used a deductive approach in analysing data according to analytical categories developed from Bernstein's (1996, 2000) theoretical concepts of classification and framing (see Section 5.6.3). Using these concepts, I developed criteria for analysis of the syllabuses for Forms A, B and C, in order to assess knowledge integration and the structure of the intended pedagogy. The analytical criteria are shown in Chapter 8 (see Table 8.2 and Section 8.3.2). To enable this analysis I initially identified statements or sentences within the syllabus that could be analysed in terms of the theoretical concepts of classification and framing. Following Morais et al. (1999), I performed a content analysis, focusing on the rationale for the study of geography, its objectives, themes and methodological suggestions. In other words, using a statement as the unit of analysis, I interpreted the curriculum message contained in terms of the **what** and the **how** of the pedagogy the syllabus promotes.

The principle of classification, however, seemed to be inadequate to enable an understanding of whether there was a balanced approach to the integration of environmental education into the school geography content. Through reflexivity, I used Jensen's (2000) model of environmental education as a supplementary analytical tool. This model helped me to understand the knowledge integration in terms of the goals of environmental education, especially the extent to which the curriculum document relates to the vision of action competence.

### 5.6.1.3 Geography textbooks

A number of methods for analysing textbooks are described in the literature on textbook research. For example, Pingel (2010) identifies two methods that can be used to analyse textbooks, namely, content analysis and didactic analysis. In terms of the former method, the analysis focuses on the content of the book to determine whether or not it sufficiently covers the topic in question. The latter approach explores the dominant pedagogy in the text. In this study I used both methods to analyse the three textbooks used to teach geography at junior secondary level at the model school, as I was interested in understanding change in both the content and pedagogy of geography. The content analysis employed was qualitative in nature, as conceptualised in Section 5.6.1. This qualitative approach involved developing analytical categories, identifying book chapters that contained environment-related information, and making a value judgement about relevant aspects of the content, including illustrations. This enabled me to develop a rich description of the geography content in relation to environmental education. I then coded all the relevant chapters using the analytical tool shown in Chapter 9 (see Table 9.1).

Using that criterion, I focused on the objectives for each chapter, relevant texts, diagrams/visual illustrations, learning activities and glossary, to illuminate content, skills, values and dominant theory of instruction as they relate to environmental education. The learners' activities were also analysed to unearth the type of assessment supported in each textbook. In each case, I made a comparison of the three books according to the units of analysis.

The analysis focused on explicit and implicit messages contained in different areas of the textbooks. I also analysed the forms of null curriculum to highlight possible strengths and weaknesses within each book, and the implications these would have for classroom practice. Extracts from the textbooks were provided to illustrate certain points made.

### 5.6.2 Analysis of Interviews

After conducting all the interviews, I revisited my transcriptions and listened to the tapes again for a more detailed transcription. Unlike the initial data transcription (see Section 5.5.2), this involved capturing the responses verbatim, including those that I initially thought were not directly relevant to my interview questions. I also included pauses, emphases made, and other non-verbal responses that I thought might facilitate interpretation. In some cases, I translated the responses from Sesotho to English, because several respondents had used both languages. I also made minor editing interventions to enhance the readability of the transcripts.

During this detailed transcription, I identified some data gaps which necessitated follow-up interviews with some respondents. Fortunately, I had contacts details for all the respondents, so it was easy to set up appointments for further interviews. In some cases, I asked follow-up questions in the process of data validation with the respondents (see Section 5.6).

The next step of analysing the interview data involved reading all the transcripts and listening to the tapes again in order to identify and correct possible discrepancies. I then coded the transcripts to highlight patterns within the responses to each interview question. The coded data was further interpreted according to the research questions and theoretical categories. Since qualitative data analysis is an interpretive exercise (Cohen et al., 2007), I engaged in an iterative reflexive process which involved a dialectical interaction among data, theories and my own subjectivity (Alvesson & Skoldeberg, 2000). This process necessitated reflecting critically on the broader context of the Lesotho education system and my experience as a secondary school geography teacher and university lecturer. It also called for a further literature review to identify areas where my research was discovering something new or confirming existing evidence (Ahern, 1999).

The data was reported in a narrative form, according to issues derived from the interview questions and emerging from the data. In many cases, I quoted verbatim responses from the transcripts to provide evidence for the claims made (see Chapters

7 and 10). As Ahern (1999) suggests, I avoided quoting any single respondent extensively in representing the respondents' views.

### **5.6.3 Analysing classroom observational data**

This data was analysed after all the interviews with teachers had been analysed, to enable a comparison between the teachers' opinions and their practice. The analysis involved reading all the lesson transcriptions for each teacher to develop an initial impression of how individual teachers taught geography. I then performed a content analysis of each of the 37 lessons, focusing on the content and lesson activities, using analytical tools developed from Bernstein's theoretical concepts of classification and framing.

For understanding how the curriculum change process is playing out at the micro-level of classroom practice, Bernstein (1996; 2000), writing from the perspective of critical theory, proposes a framework that can illuminate issues of power and control between discourses and curriculum agents. In the section that follows, I describe this framework.

#### **5.6.3.1 Analytical framework**

Bernstein (1996, 2000) proposes a theoretical framework that can be used to analyse curriculum change at the level of curriculum documents and classroom practice. This framework consists of the concepts of framing and classification, which between them constitute a language for describing issues of power and control among discourses (EE and geography) and agents. These concepts enabled the study to reveal the extent to which EE is integrated into school geography, and expose the control relations that characterise teachers' pedagogic practices. This helped to produce an understanding of whether the LEESP transformational vision was being realised at the level of the classroom.

#### ***Classification***

According to Bernstein (1990, 1996, 2000), classification refers to the strength of boundaries between and within categories: in the case of this study, relations within

traditional geography knowledge fields, and relations between EE and geography. In Bernstein's terms, relations between EE and geography represent external classification, while relations within knowledge fields in the subject would be an example of internal classification. Where classification is strong (C+), contents are well separated; weak classification (C-) arises when categories are brought together (Bernstein, 1996). Within this framework, a curriculum characterised by strong classification is called by Bernstein the "collection code", and one with weak classification the "integration code" (ibid., p.25). Thus classification was used, in this study, to develop analytical tools to explore the extent to which school geography is related to EE and the everyday knowledge of the learners, at both the levels of prescription and classroom practice. Weak classification would mean a high degree of interrelationship between EE and school geography content.

Bernstein is also interested in the classification of agents, for example, the boundaries between curriculum developers and teachers, or between teachers and learners. This type of classification would enable an analysis of issues of power relations between geography teachers and learners in a pedagogic situation. The LEESP intervention adopts a new progressivism, which requires open relationships where teachers and learners work in mutual inquiry (Doll, 1993). The extent to which the geography curriculum allows teachers and learners to make independent contextualised curriculum decisions, and the extent to which teachers create a context for dialogue and interaction among learners themselves in exploring environmental issues would represent the extent of change in the pedagogy of geography.

### ***Framing***

Whereas the principle of classification is about power relations between categories, the principle of framing establishes control relations between categories. It refers to control over the selection of knowledge, its sequencing, pacing and evaluation criteria. It also refers to control over the social relations which make knowledge transmission possible (Bernstein, 1996, p. 26). Bernstein indicates that where framing is strong, the transmitter (teacher) has explicit control in pedagogic practice, and conversely where framing is weak the acquirer (learner) has apparent control. He associates strong framing (F+) with didactic teaching methods, and weak framing (F-) with progressive pedagogy. The concept of framing was therefore used in this study

as an analytical tool with a coding system for illuminating control relations associated with the ways in which EE curriculum change processes have shaped or are shaping school geography pedagogy (see Table 11.3).

As will be shown in Table 11.3, the coding system involved a four-point scale: F+ for strong framing, F++ for very strong framing, and F- and F-- for weak framing and very weak framing respectively. After Bertram (2008), the approach I used to code lesson statements was both qualitative and quantitative, in that I interpreted lesson statements and incidents and made qualitative decisions about how they should be coded in terms of the framing scale. I then counted the number of statements in each analytical category and decided how the entire lesson should therefore be coded. For example, if there were more statements coded F++ in the first category as shown in Table 11.3, I considered such a lesson to be strongly framed (dominated by the teacher) with respect to selection of content. This coding system enabled me to develop a clear picture of the dominant pedagogy in the geography classrooms of the schools under investigation. I then compared this with the instructional theory underpinning environmental education. I used the same approach for coding the lessons according to the classification scale to determine the level of knowledge integration within the geography content (see Table 11.3).

Associated with the principles of classification and framing are *recognition rules*, *realisation rules* and *evaluative rules*. Recognition rules give agents the ability to recognise and understand the context in which they are operating (for example, classroom culture as envisaged by LEESP); realisation rules refer to the ability of agents to produce a legitimate text (Bernstein, 2000, pp.17-18). This text could be what is expected of the learner in classroom teaching and learning contexts. Evaluative rules give an understanding of the criteria to be attained in pedagogic practice (Bernstein, 2000, p.28). According to Bernstein if teachers or learners do not possess such rules governing power and control structures within a pedagogic situation, the intended curriculum change may not be realised.

The study drew on the approaches of other Bernsteinian researchers who conducted studies in different cultural and educational contexts (Morais, 2002; Singh 2002; Taylor, Muller & Vinjevold, 2003; Wilmot, 2005; Hoadley, 2007; Bertram, 2008).

To characterise the teachers' pedagogic practices, I developed an analytical instrument similar to those used by Morais (2002), Taylor et al. (2003), Hoadley (2007) and Bertram, (2008). This tool allowed me to categorise the teachers' behaviour in terms of the dimensions of framing and classification. Relevant syllabus statements and the observed lessons were coded according to classification and framing scales (Bernstein, 2000). I then interpreted this data in terms of the general pedagogic principles underpinning environmental education as contained in the *Reference Note for Environmental Education in Lesotho* and relevant international literature on EE.

### **5.7 Validity and Trustworthiness**

In this study, I used a combination of data generation methods as a means of data triangulation (Stake, 2000; Cohen et al., 2007). This multiple-method approach, through document analysis, interviews and classroom observation, enhanced the validity and reliability of the results. I also attempted to increase the validity of the results through the process of "member-checking" with participants (Schwandt, 1997, p.88; Creswell, 2003, p.196). After transcribing the interview data I sent transcripts to the respondents for validation. This was only possible, however, with those participants who had easy access to the internet. Out of eight participants to whom I sent interview transcripts, five responded without making major changes to their responses, and some providing additional information.

I was also aware of a validity threat that might arise from the power relations implicit in my interaction with the teachers. The research was conducted in schools where some of the teachers were my former students at the university, so there was a possibility of that they might feel intimidated or inhibited in their classroom performance. To avoid this possibility, I made it clear to the teachers that my role was not to find weaknesses in their practice but to understand how they were teaching so that we could learn something together. It was also important to assure teachers of the anonymity of their identity so that they could feel free to open up.

Finally, my professional interaction with “critical friends” (Bassey, 1999, p.76), both at Rhodes University and the National University of Lesotho, where I work as a lecturer, provided intellectual stimulation and critical reflection on the quality and rigour of this research.

### **5.8 Ethical considerations**

Bassey (1999) suggests that research should be conducted in an ethical manner, respecting the rights of participants. In this regard, Cohen et al. (2007) provide guidelines for observing ethical standards in qualitative research. These include negotiating access to and getting the informed consent of the research participants. For this research, I gained access to curriculum developers at the NCDC through permission granted by the Director, who referred me to the coordinator of environmental education activities at the centre. The coordinator gave me a list of the NCDC professional staff who participated in the LEESP activities. The coordinator also gave me the names of other key people in the Ministry of Education and Training (MOET), who served on the LEESP Steering Committee. I then made personal contacts with these people and set appointments for interviews.

In order to gain access to the model school and the other schools that participated in this study, I wrote a letter to the principals of the schools explaining the purpose of the research and how geography teachers in the schools were likely to benefit from the study. The letter also specified the period of classroom observations and how I would work with the teachers during that period. However, as Scott (1997, p.159) notes:

gaining access to a research setting involves far more than simply being granted permission to begin research. It is a continuous series of negotiations and renegotiations, with different personnel at different levels within the organisation.

To gain access to individual teachers’ classrooms, I engaged in informal discussions with heads of departments and the geography teachers to establish rapport and mutual trust. Once rapport had been established, I obtained the informed consent of the teachers to participate in the study. As Cohen et al. (2007) suggest, I also made it

clear that their participation in this research was voluntary and that they would be free to withdraw at any time during the research process. The participants were assured of the confidentiality of the data and anonymity. When a need for taking pictures arose, I obtained informed consent from the participants.

## **5.9 Conclusion**

This chapter has described the research orientation within which this study was conducted. I have also provided a justification for the use of the case study method. Operating within an interpretive qualitative research approach I was able to generate different types of data through document analysis, interviews and classroom observations. These multiple methods enhanced the validity of the results. The study employed both inductive and deductive approaches to data analysis, drawing insights from theories in geography, environmental education and curriculum studies. In particular, Bernstein's theoretical concepts of classification and framing were useful in illuminating issues of power and control relations at the levels of geography curriculum documents and classroom practice.

## CHAPTER 6

### ANALYSIS OF THE LESOTHO ENVIRONMENTAL EDUCATION SUPPORT PROJECT (LEESP) POLICY GUIDELINES

#### 6.1 Introduction

This chapter analyses the policy statements and guidelines for the integration of environmental education into the formal education system in Lesotho. Olssen, Codd and O'Neill (2004) make a distinction between two forms of policy analysis, namely analysis *for* policy and analysis *of* policy. They assert that analysis *for* policy has the purpose of making specific policy recommendations and providing policy makers with information; whereas analysis *of* policy examines the processes of policy construction and the effects of such policies on various groups of people. It may also focus on the content of policy, in which case researchers “examine the values, assumptions and ideologies underpinning the policy process” (ibid., 72). This study focused on analysis *of* policy, as opposed to analysis *for* policy. In this chapter, I examine the content of the LEESP policy documents to identify the underlying assumptions about knowledge, pedagogy and assessment (the social process of policy construction is explored in Chapter 7). I subject these documents to qualitative content analysis to uncover synergies, paradoxes, tensions and contradictions between their curriculum intentions and educational aspirations in Lesotho.

In this analysis, following Bowe et al (1992) I assume that a policy text embodies contradictory and tacit messages about values and ideologies of which policy developers may be conscious or unconscious. These messages need to be unpacked to yield an understanding of the drivers of proposed curriculum reforms. I first provide a brief background, in which I introduce key LEESP documents, state specific areas of focus of the analysis, describe the assumptions underlying my analysis, and finally highlight analytical frameworks.

#### 6.2 Some background to LEESP documents

As stated in Chapter 5, the analysis focuses mainly on the revised version of a *Reference Note for Environmental Education in Lesotho* (hereafter referred to as *Reference Note*) which was produced in 2004 by the Lesotho Environmental

Education Support Project (LEESP). The *Reference Note* draws on international policy frameworks and Lesotho policy documents in order to place environmental education in global and national contexts. It was intended to provide policy guidelines for the integration of environmental education into the school curriculum, as an educational response to national development priorities. The intended audience of the *Reference Note* included curriculum developers, teacher educators and teachers, particularly those in the model schools.

For a broader understanding of the messages contained in the EE policy guidelines, as I have indicated in Chapter 5 (see Section 5.5.1), the *Reference Note* is analysed alongside the LEESP *Project Document* and the *Environmental Education Teachers' Handbook* (hereafter referred to as *Teachers' Handbook*). As mentioned in Chapter 1 (see Section 1.3.2), the teachers' handbook was designed to provide further guidelines for the integration of EE into the school curriculum by elaborating on the concept of EE and its underlying instructional theory, as conceptualised in the 2001 draft of the *Reference Note*. Where appropriate, I also make reference to the *National Environment Policy for Lesotho, 1997* and other relevant education policy documents for illustrating areas of compatibility, or incompatibility, with national development goals in Lesotho. As Ball (1994, p.19) notes, enactment of a policy text relies on, among other things, its "intertextual compatibility" with other circulating policies.

For the purpose of this research, I analyse these documents to uncover the following:

- The conception of environmental education and the rationale (reasoning) for its introduction
- The view of knowledge as expressed in the concept and goals of environmental education
- The environmental education underlying values
- The intended pedagogy and
- Assessment strategies recommended.

Interwoven into these areas are power relations between the Danish team and the Lesotho stakeholder groups, as well as between the EE discourses and the education system in Lesotho. I recognise that the development of education policy represents an

arena where interested parties struggle to dominate the prevailing discourse (Bowe et al., 1992). As such a policy text carries messages about norms and values that dominant groups consider desirable for bringing about change in society.

For analysing the environmental knowledge, values and skills privileged in LEESP documents, I draw on McKeown's (2006) framework for reorienting education to address sustainability as outlined in Chapter 3 (see Section 3.2.2), in order to develop an analytical tool – as shown in Table 6.1.

**Table 6.1: Analytical tool for analysing EE components**

EE/ESD component	Indicators
Knowledge	<ul style="list-style-type: none"> <li>• The LEESP EE programme includes three pillars of sustainable development: environment, economy and society</li> <li>• The Reference Note creates opportunity for learners to acquire basic knowledge in natural sciences, social sciences and humanities for an understanding of sustainable development.</li> <li>• The Reference Note acknowledges the role of knowledge of traditional disciplines as well as community and indigenous knowledge in supporting EE/ESD.</li> </ul>
Issues	<ul style="list-style-type: none"> <li>• The LEESP programme focuses on real local and global issues relating to the three pillars of sustainable development.</li> <li>• The issues are relevant to Lesotho</li> </ul>
Skills	The programme creates opportunity for development of both practical skills and psycho-social abilities relating to action competence.
Values	<ul style="list-style-type: none"> <li>• It includes sustainable development values relevant to Lesotho's imperatives for development.</li> <li>• The programme opens up opportunity for exposing learners to different value positions</li> <li>• It recognises that SD values are contestable.</li> </ul>

Adapted from McKeown, 2006 (pp. 286-290)

I also draw upon Habermas's theory of knowledge interests (see Section 4.4) to identify the ideological orientation of LEESP. Because it makes use of these theories, however, does not mean that this analysis is exclusively deductive. I use an open-ended approach to allow other important observations (not falling within the categories of these theories) to emerge.

### **6.3 Rationale for environmental education and LEESP intervention**

The introduction of environmental education in Lesotho was a national response to environmental problems relating to environmental degradation, which is identified in

policy documents as the key environmental issue threatening sustainable development in the country (see Chapters 1, 2 and 3). In particular, the *Reference Note* makes reference to the *National Environmental Policy for Lesotho 1997*, which identifies accelerated soil erosion, drought, poverty, pollution, and a low level of environmental awareness as among the challenges facing Lesotho. It also refers to international documents and meetings (the Tbilisi Declaration, 1977, *Agenda 21*, NEPAD's environmental action plan, 2003, WSSD, 2002) that provide a mandate for the integration of EE into education systems. This suggests that the introduction of environmental education in Lesotho, as is the case in many other countries, not only has a local context, but it is also shaped by global trends and developments. Although this may, on the one hand, be seen as an opportunity for ensuring compatibility between local EE programmes and the national and international policies guiding sustainable development efforts, it may, on the other, be seen as posing a risk of exposing the Lesotho education system to negative global influence. Some environmental educators are concerned that the international discourses of sustainable development can lead to cultural hegemony, given the contested meaning of the concept (Lotz-Sisitka, 2004; Jickling, 2005).

While I do not contest the potential value of environmental education in addressing development problems in Lesotho, it would be interesting to analyse the kind of reasoning given for seeking assistance from outside Lesotho. The LEESP's *Project Document* outlines reasons for seeking assistance from DANCED (a Danish donor agency):

Lesotho has already embarked upon a curriculum review process and intends to include Environmental Education as a cross-curriculum activity at both Primary and Secondary levels. Enthusiasm for this approach is high but locally available knowledge and experience of the specialist field of Environmental Education is rather scarce. In addition, this comprehensive curriculum development process has only very limited access to specialist, international and regional expertise and experience. With a number of successful projects aimed at strengthening Environmental Education in neighbouring countries of southern Africa already at various stages of implementation, Danced has established itself as a leader in this field and is therefore in a favourable position to extend its support to Lesotho. (LEESP, 2000, p. 36)

The statement indicates that while Lesotho has an interest in EE, it has limited expertise and experience, and therefore needs assistance from outside. From a critical

perspective, this statement can be interpreted as clearing the ground for hegemonic power relations between DANCED and Lesotho, disregarding the value of existing local indigenous knowledge as well as ignoring local experience of curriculum reform.

These power relations are evident in the last part of the statement: “Danced has established itself as a *leader* in this field and is therefore in a favourable position to extend its support to Lesotho” (emphasis mine). Thus apart from being a donor, given its successes in other southern African countries – and assuming that all national contexts are similar – DANCED is expected to play a leadership role in EE curriculum reform in Lesotho. Reflecting on donor-funded EE projects in the region of southern Africa, Lotz-Sistka (2004) questions whether the work done by the Danish International Donor Agency (DANIDA) can inform UNESCO’s efforts to attend to the quality and content of education.

Using the words “*leader*” also implies a top-down approach, underpinned by technical rationality, which emphasises the importance of expert knowledge in driving curriculum reform. This top-down approach is illustrated by the logistic framework guiding the LEESP activities, which had to be completed within predetermined periods. Operating according to predetermined deadlines could compromise the quality of capacity building, which depends upon specific local contexts and the needs of the stakeholders.

#### **6.4 Project objectives and activities**

As the *Project Document* (LEESP, 2000, p. 8) shows, the focus of the project was on the capacity building of a range of stakeholders with a view to achieving its development objective, expressed in the following statement:

The project aims on [sic] improving environmental understanding of school levers [sic]. The immediate objective is to improve the capacity of the relevant educational authorities to ensure that such understanding will take place.

The assumption in these objectives is that learners leave schools with a poor or low level of environmental understanding, and that this problem can be addressed through

building the capacity of those in charge of curriculum development and implementation. As mentioned in Chapter 1 (Section 1.3.2), this capacity building was to be achieved through a series of workshops for curriculum developers, and through in-service training workshops for practising teachers in the model schools. By emphasising training workshops as a strategy for capacity building, the project was presumably assuming that such training would lead to the successful implementation of EE. This appears to be a common approach worldwide to support curriculum reform. Van den Akker (2003) notes that there is a trend nowadays towards integrating curriculum change with professional learning, in order to increase the chances of successful implementation.

Furthermore, the project aimed at introducing amendments into the existing syllabuses. The *Project Document* states that, “The project will assist the relevant authorities in issuing amendments to the current curriculum in order to pursue the conceptual understanding of environmental education...” (LEESP, 2000, p.21). Introducing syllabus attachments as a strategy for implementing curriculum change reflects a linear approach to introducing curriculum change. However, this approach has been criticised by some critical curriculum scholars for placing teachers in the position of mere transmitters of expert knowledge (Cornbleth, 1990; Young, 1998).

According to the *Project Document*:

In order to strengthen the current curriculum on teacher development, the project will introduce the concept of Model Schools and will be provided with intensive training in Environmental Education... In addition the Model Schools will be trained in Action Reflection/Research in order to achieve self-learning competence..... The purpose of the Model schools is to create a considerable resource of experienced and practising teachers for dissemination of Environmental Education. (LEESP, 2000, p.23)

This statement specifies that, as opposed to focusing exclusively on the conceptual understanding of EE, the training workshops in the model schools would also cover action research as a strategy to promote teachers’ professional development. LEESP thus assumed that teachers would have the professional capacity, motivation and time to engage in action research, and that EE curriculum change would be facilitated by the ability of teachers critically to reflect on their practice. Mokuku (1999)

acknowledges the potential value of action research in supporting curriculum transformation in the context of Lesotho. However, the extent to which this approach was actually used by teachers in the model schools is yet to be seen.

The statement quoted above also reflects LEESP's expectation that, once trained, the teachers at the model schools would disseminate EE to other schools. The assumption here is that through training, teachers would develop professional capacity and competences that would enable them to train other teachers. It would also seem that LEESP assumed that there would be resources for teachers at the model schools to facilitate the process of EE dissemination.

In the statement above, LEESP uses the word "training" to describe capacity building workshops, and the term recurs throughout the project document. To me the use of such a word is problematic in that it has the connotation of "conditioning", which is contrary to the project's stated aims of emancipation, as will be seen later in this analysis. Commenting on teacher education models in the context of Lesotho, Sugrue (1997, p.19) associates the notion of "training" with greyhounds and horses, and prefers to use "teacher education" rather than "teacher training" to describe the professional development of teachers. Similarly, writing from a process perspective on curriculum development, McKernan (2008) makes a distinction between education and training, arguing that the latter is deterministic in that it emphasises the achievement of predetermined outcomes.

Therefore, using the word *training* to describe capacity building workshops appears to undermine the professional integrity of the stakeholders by reducing them to the status of a target group to be taught a particular way of doing things in order to achieve the project's stated goals, regardless of the specific contexts of schools. The description of staff development workshops as training programmes in the context of LEESP appears to conduce to the establishment of hierarchical power relations between the teachers and the project staff in the conduct of the workshops, with the latter being seen as experts and the former as mere recipients of expert knowledge. This situation would seem to have little to contribute to the professional development of teachers who are to implement curriculum reform.

## 6.5 The view of knowledge underpinning environmental education

In terms of McKeown's (2006) framework for orienting education to sustainability, as presented in Chapter 3 (see Section 3.2.2), environmental education adopts a broad view of knowledge relating to the environment, society and economy. It also comprises skills relating to action competence, perspectives and values. In this section I explore the view of knowledge underpinning environmental education in Lesotho as conceptualised in LEESP documents.

The *Reference Note* defines environmental education as:

an educational initiative pursuing the visions of Action Competence, which aims at educating learners to become responsible citizens in a society where severe environmental problems emerge and where sustainable solutions must be found. (LEESP, 2004: 1)

Central to this definition is the notion of action competence, which is described in the document as the ultimate goal of EE in Lesotho. The *Reference Note* defines action competence in line with the Danish literature (Jensen & Schnack, 1997) on EE as “a pedagogic aim in democratic perspective to build up responsible citizenship” (LEESP, 2004:3). The document further elaborates on action competence as follows:

Action is associated with activities, customs, life skills etc. An action must be conscious, reflective and aimed. Competency is associated with a capability and willingness towards a responsible participation in society, necessary decision-making and problem solving. (LEESP, 2004, p.3)

This quotation highlights capabilities, which reflect some aspects of the skills component of McKeown's (2006) framework for reorienting education for sustainable development (see Chapter 3). In this regard, introducing the concept of action competence into the curriculum discourse in Lesotho might be seen as a necessary step in transforming society towards sustainable development. As will later be shown in Section 6.7, its adoption represents an intention to shift curriculum policy from a teacher-centred approach to a learner-centred one, guided by a democratic vision of emancipation. For example, learners' competence is described in terms of participation, which is supposed to be voluntary, as illustrated by use of the word *willingness* in the quotation. This implies new roles for both teacher and learners. It would seem that LEESP envisaged a democratic teaching and learning situation

where learners would make a voluntary commitment to environmental activities, with teachers acting as facilitators. The question of how this curriculum vision is compatible with democracy in Lesotho will be explored later, in Section 6.6.2.

In pursuing the vision of action competence, the LEESP programme reflects the goals and objectives of EE as laid out in its founding international documents such as the *Belgrade Charter* (UNESCO, 1976) and the Tbilisi Declaration (UNSECO, 1978). For example, according to the *Belgrade Charter* one of the goals of EE is:

To develop a world population that is aware of, and concerned about, the environment and its associated problems, and which has the knowledge, skills, attitudes, motivations and commitment to work individually and collectively toward solutions of current problems and prevention of new ones. (UNESCO, 1976, p.3)

The *Reference Note* makes reference to EE with an emphasis on local, national and global environmental problems, and issues relating to energy, agriculture, biodiversity, pollution, solid waste treatment, sewerage and poverty (LEESP, 2004, p.3). In terms of McKeown's (2006) framework for ESD as presented in Table 6.1, the diverse nature of this content suggests that all school subjects are relevant to EE, and can contribute basic knowledge components necessary for achieving the goals of sustainable development. This content also provides opportunities for interdisciplinary teaching and learning, utilising knowledge from other subjects and the community. The interdisciplinary nature of EE is further stressed in the following statement, "each and every teacher, no matter the subject he teaches, will bear responsibility for EE as it relates to the subject taught" (LEESP, 2004, p.3). This statement reflects an intention to introduce an integrated view of the curriculum, situated in the practical knowledge interest as conceptualised in Chapter 4. The intention to adopt an integrated approach challenges the dominant disciplinary view of knowledge embedded in the history of formal education in Lesotho.

While the content of EE as stipulated above may seem to be comprehensive in terms of its coverage of environmental issues, it is striking that the *Reference Note* does not mention climate change, despite its currency both in Lesotho and internationally. The issue is not mentioned in the teachers' handbook either. Is this just an accidental

omission? Or does it suggest a conspiracy to legitimise the economic policies pursued by certain neo-liberal States? It is now a matter of common knowledge that the issue of climate change is surrounded by political controversy on a global scale, with some countries showing reluctance to subscribe to climate change conventions, notably the Kyoto Protocol (Bednarz, Peterson & Bednarz, 2007). In my view this omission, if indeed such it is, is to be highly regretted in the context of Lesotho, where the majority of people are confronted with challenges and risks associated with climate change (see Chapter 2). While the causes of climate change may not be a big issue in Lesotho, as the country has very low levels of greenhouse gas emissions, education ought to play a major role in developing the adaptive capacity of communities to cope with the issues and problems of climate change. In view of the observation that climate change is not given a substantive position in the *Reference Note*, following critical curriculum theorists, for example Apple (2004) and McLaren, (2007), I raise the following two questions: whose knowledge is this? Whose interests does it serve?

With respect to its view of the environment, the *Reference Note*, consistent with international trends, takes a broad view of the concept, encompassing the biophysical, social, economic and political dimensions. This view resonates with the model of environment described in Chapter 3 (see Figure 3.1). The document uses the word *complex* to describe the relationship among the four dimensions. This suggests that EE content should emphasise the interdependence of the natural and built environments and encourage a holistic view of environmental issues among learners. The adoption of this broad perspective on the environment also suggests that EE practice should encourage decision-making processes that take into account the environmental, economic, political and social dimensions, based on the three pillars of sustainable development (McKeown, 2006). Secondary school geography as an integrated subject, drawing content from both natural and human sciences, has the potential to embrace these four dimensions of the environment.

### ***Contradictions associated with the view of knowledge***

While the view of knowledge underpinning environmental education may seem to be supporting the emancipatory knowledge interest, as I have already noted in this section, it could also be argued that EE as described in the *Reference Note* has an instrumental goal supporting the technical knowledge interest. The following

statement illustrates this argument: “Environmental Education is an educational initiative ... which aims at educating learners to become responsible citizens in a society where severe environmental problems emerge...” (LEESP 2000, p.1). This statement suggests that EE is seen as some kind of panacea for Lesotho’s environmental problems and risks. Mokuku et al. (2005) argue that viewing EE in this way is simplistic and “may not be a helpful perspective in view of the complex socio-political and structurally rooted nature of environmental and education problems, the solutions of which lie beyond the realms of the school contexts” (ibid., p.163).

The writers of the *Reference Note* apparently assume that environmental problems in Lesotho are a result of the fact that the citizens are not responsible. This assumption is implicit in the following statement extracted from the general goals of EE, “...educating learners to become responsible citizens”. The document does not elaborate on the phrase *responsible citizen*, thus leaving its interpretation to the reader. If responsible citizenship implies responsible use of environmental resources, it would appear that LEESP has made a linear assumption that once people change their environmental behaviour, environmental problems will be resolved, regardless of the dynamics of contexts in schools and communities.

Another form of technical rationality is evident in the manner in which the content of EE is stated in the *Reference Note*. Rather than raising questions about environmental issues particular to specific contexts, the document provides a long list of EE themes. While I do not dispute the validity of this content (except for some omissions), it seems that listing environmental themes in this manner could encourage a fragmented approach to teaching. It could also restrict teachers’ and learners’ reflexivity and creativity in terms of identifying relevant environmental problems and issues in their specific contexts. The teachers’ handbook, as Ansell (2006) notes, also presents environmental issues in a didactic manner without acknowledging that such issues are contestable. This didactic approach contradicts the LEESP’s transformative vision of action competence, where teaching and learning are supposed to be contextualised, reflective and empowering. The approach also has the potential to reinforce traditional teacher-centred methods in the implementation of EE.

## 6.6 Values

The values dimension is internationally recognised as an important outcome of environmental education. Chapter 36 of *Agenda 21* states that:

[Education] is critical for achieving environmental and ethical awareness, values and attitudes and behaviour consistent with sustainable development and for effective public participation in decision-making. (*Agenda 21*, Chapter 36)

This statement provides an impetus for the inclusion of values in EE programmes in UN-member countries. In line with this global environmental action plan, the overarching goal for EE in Lesotho is to achieve sustainable development, which is seen internationally as providing a moral framework for EE programmes (Postma, 2002, p.41). For the purpose of this analysis, the values expressed in the *Reference Note* are classified as sustainable development values, democratic values, and ethical and aesthetic perspectives as outlined in the environmental education international documents (the *Earth Charter*) and literature (McKeown, 2006).

### 6.6.1 Sustainable development values

Sustainable development is the key value in the LEESP programme, because it is considered to be the “overarching” goal of EE in Lesotho (LEESP 2004, p.3). The *Reference Note* defines sustainable development as:

A process which requires that the use of environment and resources does not jeopardize the environments and the well-being of people, locally and globally, or destroy the capacities of future generations to satisfy their reasonable needs and requests. (LEESP, 2004, p. 3)

This definition echoes a widely-used definition of sustainable development contained in WCED (1987), which has been criticised for being anthropocentric and based on economic motives, seeing nature as a resource to be exploited in order to satisfy human needs (Bonnett, 2007, p. 710). Bonnett argues that this view of the environment is the root cause of current environmental problems and poses a threat to our physical well-being. Thus, this understanding of sustainable development reflects

an instrumental rationality emphasising human needs, and giving no attention to the needs of other species (Williams & Millington, 2004).

The idea of sustainable development as conceptualised in the *Reference Note* also seems to stress the importance of intergenerational moral values. Citizens are expected to use resources in a manner that does not *“destroy the capacity of future generations to satisfy their reasonable needs and requests”*. The word *destroy* implies an abusive or wasteful use of environmental resources, suggesting that there should be a limit on the exploitation of resources in order to ensure equitable distribution at an inter-generational level (Williams & Millington, 2004; Hattingh, 2005). This reflects values related to environmental justice, albeit human-centred. The validity of environmental justice in the context of Lesotho, where the majority of people rely on natural resources for their livelihood and energy supplies, cannot be questioned. However, commenting on sustainable development values as internationally conceptualised, some environmental educators and philosophers argue that the imposition of such values on people may preclude personal autonomy (Postma, 2002) and render EE susceptible to manipulation or indoctrination (Jickling, 1992; Jickling & Sporks, 1998, Jickling & Wals, 2008). Paradoxically, the *Reference Note* expresses a commitment to promoting action competence grounded in liberal democracy, where citizens have individual rights to choose and develop their own values. Postma (2002) argues that environmental ethics based on liberal ideals cannot include obligations to future generations. Seen from this point of view, it could be argued that LEESP’s interest in liberal values is at odds with its ideals of sustainable development.

The *Reference Note* puts the concept of sustainable development in the context of Lesotho by identifying the challenges to be addressed through EE:

Sustainable Development is intended to alleviate the causes of present environmental problems concerning overgrazing, soil erosion, water pollution, handling of solid waste, poverty, HIV/AIDS etc. (LEESP, p.1)

This list includes environmental, economic and social issues and risks that are identified in national policy documents as imperatives for development and for curriculum change (see for example, *National Environmental Policy for Lesotho, 1997; Lesotho Vision 2020*). From this list of national priorities, it can be inferred that ecological, economic and social sustainability are the key values underlying EE in

Lesotho. It can also be inferred that EE is seen as a strategy to address poverty, which in Lesotho is construed as both a cause and a consequence of land degradation (*National Environmental Policy for Lesotho*, 1997), as well as a cause of increasing levels of HIV/AIDS (*Poverty Reduction Strategy*, 2002). The compatibility between LEESP and the national imperatives for sustainable development in Lesotho appears to be one of LEESP's areas of strength.

The above statement also highlights the need for paying attention to the root causes of environmental problems, issues and risks (*Sustainable Development is intended to alleviate the causes*), rather than only focusing on the issues as symptoms of environmental crisis. The *Reference Note*, however, does not specify the causes. While this may be seen as creating a recontextualisation space for the implementation of EE, it may on the other hand suggest that LEESP assumed the causes of environmental problems in Lesotho to be commonly known and uncontested. Stevenson (2007) notes that, internationally speaking, the causes of current environmental problems are contestable, given the fact that some people blame capitalism. This makes the question of values in the implementation of environmental education in public schools in the United States, for example, a hotly contested issue (McKeown, 2006).

In Lesotho, while environmental problems relating to land degradation may generally be attributed to rapid population growth around the middle of the twenty century, they are also rooted in the history of capitalism in the region of southern Africa prior to and during the colonial era. The increasing demand for cheap labour in the mining industry of South Africa contributed to a shift in Lesotho's economy from a *granary* to a *labour reserve* (Gay et al., 1995). This led to a situation where agriculture was left in the hands of women and young people, as able-bodied men, who could productively farm and conserve the land, migrated to South Africa for non-sustainable jobs. The problems could also be linked to power struggles over land resources during the Great Trek and other subsequent events, when the Basotho were pushed towards the Drakensburg Mountains, away from the flat arable land in the Free State. This history is referred to neither in the *Reference Note* nor in the teachers' handbook. Why is this history left out? This omission has the effect of marginalising certain forms of knowledge and values.

The lack of clarity concerning the root causes of environmental problems in the *Reference Note* leaves readers of the document to ponder. This may pose a threat for re-orienting education towards sustainable development. Teachers are likely to teach environmental issues in a de-contextualised manner, without realising that such issues are also historically anchored. This also seems to conceal the ideological position of LEESP with respect to environmental problems.

### 6.6.2 Democratic and citizenship values

The *Reference Note* explicitly expresses commitment to democratic citizenship values, which are important for a promotion of a transformative education *for* the environment (Fien, 1993). Although the document does not specify the values to be promoted, it links them to the concept of action competence. This suggests that the values required for promoting democratic citizenship, as part of EE, include participation, freedom, cooperation, individual rights and responsibilities, tolerance, equality and justice, the key aspects of liberal democracy that underpin action competence (Jensen & Schnack, 1997). By espousing these democratic citizenship values, the LEESP programme reflects national development ideals as stated in the *Lesotho Constitution, 1993* and the *Vision 2020* (see Chapter 2 and Chapter 3). For example, the Bill of Rights in the Constitution identifies the right to personal liberty, freedom of expression and the right to participate as among the fundamental human rights. More specifically, the *Vision 2020* describes the national vision as follows:

By the year 2020, Lesotho shall be a *stable democracy* where principles of good governance will be anchored on the respect for *human rights*, the rule of law, political openness, political *participation*, and *tolerance*. (Government of Lesotho, 2004, p.4) (Emphasis mine)

This reflects another area of compatibility between LEESP and Lesotho national ideals. Lesotho has historically been a democratic state, as reflected in the manner in which *Pitsos* (public consultation forums) were conducted. Machobane (1990, p.23), citing Casalis, notes that *pitso* was “a remarkably democratic institution” where freedom of speech was exercised. The democratic nature of a *pitso* can be exemplified by commonly used Sesotho phrases such as “*mooa-khotla ha a tsekisoe*” and “...le

*motinyane o na le lentsoe*”, which translate as having respect for everybody’s views, enables freedom of speech. These phrases illustrate democratic values of participation, tolerance and freedom that characterised the processes of decision-making and problem-solving in traditional Basotho communities.

Although there seems to be congruence between LEESP and national ideals with respect to democracy, it might be asked whether emphasising such democratic values at the level of basic education would be appropriate in Lesotho, given the age of the learners at that level of education. While these principles were valued in the culture of the Basotho, they only applied to adults. Children would not participate in discussions or debates with adults. As noted in Chapter 2 (see Section 2.4.1), traditional education in Lesotho is also characterised by an authoritarian relationship between adults and children, and a low level of learner engagement. An adult was seen as a potential source of knowledge. By introducing liberal educational values in Lesotho, LEESP challenges those responsible for education to interrogate the existing culture and the residue of colonial education. As mentioned earlier in this section, such a move represents an intention to introduce fundamental changes in the whole school system, in order to promote liberal democratic values such as free individual choice and rights. Arguing from the critical perspective, introduction of these values at the level of basic education may on the other hand be seen a necessary innovation to emancipate school children.

In the context of this study, it might nevertheless be asked whether educational change driven by an imported concept of action competence is in the best interests of the Basotho. As a project designed within the global political economy, the LEESP carried curriculum discourses that could possibly incorporate Lesotho into membership of the new order of global economy. This observation is probably confirmed by the Danish assistance strategy to the southern African region, which states:

It is concluded that globalisation creates new opportunities and threats for developing countries and that assistance will be needed to integrate these countries in the world economy. In this respect, ‘Partnership 2000’ specifically mentions that Danida will actively engage in the promotion of regional cooperation that can strengthen the economic links of the developing countries

with the surrounding countries and provide a springboard to the global market. (Danida, available on line, retrieved on 19/05/2009)

From this quotation it would seem that LEESP assumed that pursuing the agenda of action competence would build a democratic society in Lesotho reminiscent of the neo-liberal requirements of the global market. From the critical perspective, the question must be asked whether the promotion of global market ideals through donor agencies from developed countries is in the best interests of developing countries such as Lesotho.

### **6.6.3 Ethical and aesthetic values**

The *Reference Note* states that —the ethical and aesthetic perspectives, the employment perspectives, the cultural heritage and inherited values are also seen as important components of the content” (LEESP, 2004, p.3). The inclusion of the ethical and aesthetic perspectives of EE could be interpreted as suggesting that the LEESP EE programme espouses conservation values as well an *appreciation of the beauty of nature*. In particular, the ethical dimension has the potential to encourage the development of personal environmental responsibility and stewardship for the environment. However, given the way in which sustainable development is defined in the *Reference Note* (see Section 5.4.1), it could be argued that the conservation of natural resources is only valuable to the extent that nature can be used instrumentally to meet human needs. This is further confirmed by the inclusion of aesthetic values, which could be interpreted as implying that value is attached to pristine environments because they satisfy human emotional needs. Hattingh (2005), citing Fox, notes that —preservationism stresses the instrumental values that can be enjoyed by humans if they allow presently existing members or aspects of the non-human world to follow their own characteristic patterns of existence” (p. 78). He goes on to explain that:

Although this may look like a non-anthropocentric position, it is in fact not the case, because the basis for and objective of leaving certain aspects of the non-human world completely untouched and intact is still the instrumental, that is, the use value that humans get from it. (ibid, p. 79)

#### **6.6.4 Other values**

Other values considered important in the content section of the *Reference Note* are the *employment perspectives*, the *cultural heritage* and *inherited* values. The interest in employment perspectives might suggest that a positive attitude to work is one of the values to be promoted through EE. This points to the technical rationality of the EE programme in Lesotho, as reflecting one of the Basotho views and aspirations (Section 2.5.1). The 1982 *Education Sector Survey Report* provides a list of Basotho aspirations, one of which is stated as follows: “Sufficient numbers of individuals should be provided with appropriate occupational, technical and managerial skills to ensure the country’s socio-economic development” (p.11).

The interest in cultural and inherited values, expressed in the *Reference Note*, is in line with the provision of EE in Lesotho as mandated by objective (I) of the *Environmental Policy for Lesotho*: “To conserve the Basotho cultural heritage for the benefit of the present and future generations”. However, the motive for conservation here is still instrumental, because the cultural history of Lesotho is seen in the policy as a tourist attraction.

#### **6.7 The intended environmental education pedagogy in Lesotho**

The *Reference Note* states that environmental problems in Lesotho will be addressed “via a comprehensive, learner-centred pedagogical approach, embedded in the whole curriculum” (LEESP, 2004: 2). However, the document does not elaborate on the learner-centred pedagogy, thus leaving it open to interpretation. While this might be interpreted as creating an opportunity for curriculum recontextualisation, on the one hand, it might, on the other hand, be interpreted as suggesting that LEESP assumed there to be a universal learner-centred approach. This lack of clarity might pose a problem for the successful implementation of learner-centred pedagogy. Some teachers, particularly those without formal training in pedagogy, may have a limited perspective on learner-centred pedagogy and think of it as involving ordinary practical activities such as planting trees and cleaning the surroundings (under the instruction of the teacher). They may also equate it with ordinary discovery-oriented activities (O’Sullivan, 2004).

However, the *Reference Note* describes the goals of learner-centred pedagogy in terms of action competence. The document states that:

The pedagogic aim is to ensure that each learner develops the necessary **Action Competence** to manage the environment and to support a **Sustainable Development** in Lesotho. (Emphasis in the original LEESP, 2004, p.3)

From this statement it is clear that the LEESP-espoused learner-centred pedagogy is underpinned by action competence, as defined in Section 6.5. Thus learner-centred pedagogy is seen as an education process that can help drive society in Lesotho towards sustainable development. The emphasis on action competence also implies that the environmental education process envisaged in Lesotho is not concerned only with behaviour modification through campaigns promoting better habits regarding the use of resources; rather, the key concern is what is learnt from participating in environmental activities (Stevenson, 2007: 473).

Implicit in the concept of action competence as emphasised in the statement above are a host of skills that are to be developed through democratic learner-centred pedagogy. In the *Reference Note* document action is associated with *life skills*, and competence with “capability and willingness towards responsible participation in society, necessary decision-making and problems solving” (LEESP, 2004, p.3). Life skills, as elaborated in the EE teachers’ handbook, encompass effective communication, interpersonal skills, creative thinking, critical thinking, decision making and problem solving. Using the analytical tool in Table 6.1, these skills may be described as the practical and psycho-societal skills required for action taking, both individually and collectively. This suggests that teachers should create a context for learners to apply these skills to enable meaningful action to benefit the environment.

As indicated in Chapter 3 (see Section 3.2.4), action competence theorists make a distinction between *activity* and *action*, and note that action could either be direct or indirect (Jensen & Schnack, 2006). The teachers’ handbook provides guidelines on the application of decision making and problem solving so as to lead to action taking, and acknowledges that these processes involve dealing with conflicting interests. However, it does not demarcate *activities* from *actions*, nor *direct action* from *indirect*

*action*. This may lead to a situation where teachers might think of all activities as actions, or of environmental action as involving the usual practical environmental activities only, and as a result do very little in terms of achieving the goals of action competence.

The *Reference Note* further states that EE pursues a “Whole-School Development Approach”, engaging all teachers, all learners, the school administration and the local community in the necessary educational changes (p.3). The whole school approach involves re-orienting traditional school pedagogy and practice to address issues of sustainability, linking learners with teachers, school administrators, parents and the community (Tilbury & Wortman, 2006). Thus the adoption of a whole-school development approach challenges certain features of the traditional education system in Lesotho, where the curriculum is organised into separate subjects emphasising disciplinary learning and largely excluding the everyday knowledge of the learners (see Section 2.3.2). Through learners’ participation in community activities, LEESP assumed that they would bring about change in society. This represents a progressive view of social influence where “all groups, including children, have the potential to be agents of social and environmental influence and change” (Uzzell, 1999, p. 398). It also creates an opportunity for the inclusion and application of local knowledge in formal school education, as schools are expected to work collaboratively with communities in addressing environmental issues. This represents a shift from emphasis on academic educational outcomes to vocational outcomes.

The interest in promoting vocational skills through education in Lesotho has been expressed in a number of policy documents (see Chapter 2 section 2.3). For example, the 1991/1992-1995/1996 *Education Sector Development Plan* states one of the goals of education in the following manner:

Sufficient number of individuals should be provided with appropriate occupational, technical and managerial skills to ensure the countries socio-economic development... . (cited in Khati & Matsoso 2006, p. 5)

As I have already indicated above, the whole-school development approach recommended in the *Reference Note* creates a context for the utilisation of indigenous knowledge. The EE teachers’ handbook explicitly recognises the important role of

indigenous knowledge in promoting the conservation of natural resources. This is illustrated by the following extract:

During the pre-colonial times, customary law played a big role in the conservation of Lesotho's biological resources.... The role that was played by indigenous knowledge is evident in the Sesotho language. The richness of the Sesotho language as a carrier of culture can be seen in the names of places, clans and the taboos that contributed to conservation of natural resources. (LEESP, 2003, p.55)

Consistent with international trends, the handbook describes EE as a lifelong process existing in the three forms of education *about* the environment, education *in* the environment and education *for* the environment, with the last-mentioned in line with the vision of critical pedagogy (see Section 3.2.3). The handbook recommends a thematic teaching approach since environmental issues –cut across all subjects in the curriculum and do not respect subject boundaries” (LEESP, 2003, p.19). The thematic teaching recommended in the teachers' handbook weakens the boundaries between teachers of different subjects, and provides an opportunity for interdisciplinary teaching. By recommending thematic teaching, LEESP envisaged a collegial school environment where teachers would be willing to co-operate and work together for a common goal. The thematic approach would require change in teachers' views of knowledge, and teaching and learning.

Regarding the role of the learner and the teacher, the handbook – in line with the overall goal of EE in Lesotho – envisages an action-competent learner with a comprehensive knowledge of environmental problems locally and globally. In order to develop an action-competent learner, the handbook recommends that –Classroom practice should engage the whole learner: the mind, elaborating comprehensive knowledge and skills (cognitive domain); and soul (affective domain), developing personal and social attitudes and values” (LEESP, 2003, p.22). The teacher is expected to assume the role of a facilitator by challenging the mind of the learner rather than trying to control his or her behaviour. This is consistent with one of the contemporary goals of EE, as set out in the following:

I would argue that to be consistent with democratic principles students should be exposed to the plurality of environmental ideologies, and through a process of inquiry, critique and reflection they can be assisted to develop and defend their own set of environmental beliefs and values. (Stevenson, 2007: 143)

In order to achieve this goal the handbook advocates the use of participatory learner-centred methods, which include cooperative learning, field trips and project work, guided by constructivist teaching/learning principles. These approaches provide opportunities for the exploration and examination of environmental issues, and give learners control over instructional rules. Recommendation of such progressive participatory learning may be interpreted as reflecting an assumption that learners will facilitate the process of democratisation in the wider society in Lesotho. This seems to indicate that DANCED (the LEESP donor funding agency) considered learner-centred pedagogy to be a strategy for promoting democracy in Lesotho. As noted in Chapter 4, this seems to be a common trend among donor agencies in African countries (see Section 4.10.2): —.aid agencies not only seem, in principle at least, to favour the democratisation of the African political systems, they also see education playing an important part in the process” (Harber, quoted in Tabulawa, 2003, p. 8).

The *Teachers’ Handbook* elaborates on the above teaching methods. In particular, it elaborates on cooperative learning, and makes a distinction between this method and commonly used group work:

In a learning situation, this means that learners have to work together for a common goal... If one member of the group does not achieve their individual task, the whole group is affected. This is what makes cooperative learning more than just group work. (LEESP, 2003, p. 27)

The handbook goes on to outline the basic elements of cooperative learning, which include positive interdependence, individual accountability and interpersonal and small group skills. Adoption of such a cooperative learning approach will create opportunities for learners to interact among themselves and collaboratively learn together in a democratic learning environment. This represents a social constructivist view of knowledge. However, its implementation would require thorough planning and knowledge of learning theories on the part of the teacher. It would also require proficiency in English (the medium of instruction in Lesotho) on the part of the learners.

The espousal of cooperative learning and other progressive teaching methods underpinned by action competence reflects an intention to shift from the traditional purpose of schooling – transmitting basic information to enable the development of routine skills, and to maintain existing social conditions and relations – to the revolutionary purpose of promoting the values that underlie the decision-making process (Stevenson, 2007).

The adoption of a learner-centred pedagogy seems to be consistent with the Lesotho philosophy of education, as stated in some education policy documents. For example, Section 3(c) of the 1995 *Education Act* states that “the best interests of the child shall be the guiding principle of those responsible for the education and guidance of the child”. This policy intention for promoting a learner-centred pedagogy is further expressed in the latest *Curriculum and Assessment Policy*, which describes the Lesotho philosophy of education as follows:

The framework is derived from the Basotho philosophical justice, equality, peace, prosperity, participatory democracy and mutual co-existence which underpin their way of life. (MOET, 2009, p.vi)

While learner-centred pedagogy is a valued education practice in LEESP curriculum reform, Tabulawa (2003) notes that the learner-centred approach promoted by international aid agencies is not value-neutral, but is rather “a view about the world, about the kind of people and society we want to create through education” (p.9). He is sceptical about learner-centred pedagogy, and argues that it is intended to disturb the culturally sanctioned authoritarian pedagogy in schools in order to pave the way for penetration of the free-market economic system. This observation raises a concern about the relevance of LEESP learner-centred pedagogy, underpinned as it is by the principles of an imported concept of action competence. I have already shown that the Danida development strategy for assistance to southern Africa is intended to integrate developing countries into the global free market (see Section 6.3.2). Moreover, like many other African countries, as noted in Chapter 2, Lesotho has a long tradition of a bureaucratic and authoritarian type of traditional education where children do not have free choice regarding their learning, let alone being allowed to question the views of adults (see Section 2.3.1). This culture was reinforced by the colonial type of education, whose legacy is still felt even in the new millennium (Mokuku, 2005). To

implement learner-centred pedagogy guided by the principles of action competence is therefore to engage with the structural roots of the education system and culturally valued child rearing practices in Lesotho. O'Sullivan (2004, p. 595) quotes Hawes and Stephen, who point out that the implementation of a learner-centred pedagogy needs consideration of "the general child rearing practices considered appropriate and legitimate by the culture in which the teacher works". The extent to which LEESP considered these local contexts is yet to be established.

## 6.8 Assessment

As part of its strategy for the integration of EE into the school curriculum, the *Reference Note* calls for the revision of assessment strategies so as to incorporate practical issues (p.6). The teachers' handbook elaborates and provides guidelines on how the assessment of practical issues relating to EE should be carried out. It outlines four levels of knowledge: namely, data knowledge, where learners demonstrate the ability to recall factual information; explanation knowledge, focusing on connections between processes; judgement knowledge, which requires the ability to evaluate a piece of information; and action knowledge, which is regarded as the most important level in assessing the development of action-competence skills. The action knowledge level stretches the traditional Bloom's Taxonomy by emphasising the importance of action competence, which has been lacking in traditional assessment practices in Lesotho. The handbook recommends that apart from classroom tasks, action competence skills should be assessed through a "comprehensive assessment" involving projects aimed at encouraging learners to demonstrate not only knowledge with understanding, but also practical skills, cooperative skills, attitudes and values (LEESP, 2003, p.126). The concept of comprehensive assessment is used in this handbook as a substitute for continuous assessment as associated with written tests, for the latter "do not seem to assess Action Competency and ... are not able to assess integrated EE knowledge of higher order, such as judgement knowledge or action knowledge" (ibid.).

The handbook goes on to make a distinction between comprehensive assessment and continuous assessment: "Remember, we do not [only] assess to give marks and let the learner pass or fail. We assess first of all to advise and encourage the learners to

improve their learning” (LEESP, 2003, p.126). This statement points to the need to focus assessment on the individual learner’s progress, rather than encouraging competition by attaching value to numerical scores. This form of assessment implies a process view of learning where learners learn at their own pace.

The handbook further provides guidelines on how projects should be planned and assessed. The recommendation is that projects should be planned around environmental issues. The handbook gives examples of questions that could be used to guide learners’ projects:

- What environmental issues are most common in your school and community?
- What issue or problem do we want to investigate?
- What do we want to achieve at the end of this project? (LEESP, 2003, p.124)

The handbook suggests that teachers arrange for reporting and information sharing after the project work. This offers learners an opportunity to interact among themselves and develop communication skills, thus creating a context for the assessment of cooperative learning skills. It also provides an opportunity for the outdoor learning necessary for the development of observation skills and problem-solving skills, central to school geography.

With respect to giving feedback on the projects, the LEESP assessment guidelines recommend transparency, in terms of which the teacher and the learner sit together to reflect on the performance. The following questions are suggested as guidelines for reflection: “What went well? Where did we come across difficulties...? Why did we go well? Why did we run into difficulties/make mistakes?” (LEESP, 2003, p.129). Giving feedback in such a collaborative and reflective manner is not only transparent, but is also empowering, as learners are encouraged to critically reflect, through a guided process, on their strengths and weakness. It also weakens the boundaries between the teacher and the learners, thus creating an opportunity for mutual inquiry. This is evidenced by the word “we”, which is used in the last question. LEESP’s recommending this individualised form of assessment implies an assumption that optimum class sizes that would allow teachers to pay attention to individual learners’ needs. It also reflects an emphasis on formative assessment, rather than summative

assessment which has historically characterised the assessment practices of secondary school teachers in Lesotho.

Analysis of LEESP assessment guidelines further reveals that, contrary to the dominant assessment practice underpinned by Bloom's Taxonomy (Mokuku et al., 2005), the project envisaged, through action competence, assessment practices that emphasise the practical skills and affective learning required for informed and strategic action for the environment. This could be seen as a strategy to address poverty, which is seen as posing a threat to sustainable development in Lesotho. The assessment of practical skills has always been an area of concern in Lesotho, though expressed in "continuous assessment" terms. In explaining the advantages of continuous assessment, the *Task Force Report* of 1982 makes the following statement:

The advantage of continuous assessment is that it makes it possible to evaluate a pupil's understanding of his immediate environment; his appreciation of cultural and aesthetic matters; his attitudes and character development; practical application of knowledge... (Ministry of Education, 1982, p.77)

This perspective is taken further in the most recent *Curriculum and Assessment Policy*: "... assessment will be broadened to test achievement not only in one domain area but also in a range of domains" (Ministry of Education and Training, 2009, vi).

However, it is interesting to note that the teachers' handbook provides assessment guidelines only when the project method of teaching is involved. This could serve to limit the exploration of other classroom-based activities that might be used to assess the development of action competence skills, since teachers could gain the impression that the assessment of such skills is only possible when practical activities involving direct action are attempted. Yet opportunity abounds for the assessment of indirect action in day-to-day classroom activities. In the absence of guidelines for the assessment of indirect action, little might be achieved in terms of action competence, given the organisational structure of schools, which inhibits the frequent use of practical environmental projects.

## 6.9 Conclusion

The environmental education policy guidelines in Lesotho as laid out in the *Reference Note* and EE teacher's handbook provide direction for the implementation of EE. In terms of these guidelines, action competence is the overarching concept intended to guide environmental education activities in schools. The LEESP programme endeavours to promote a broad view of the environment as comprising concepts drawn from the biophysical, social, economic and political dimensions. The content also includes intellectual, social, political and environmental values and attitudes as part of the explicit and implicit curriculum. The guidelines present an integrated view of the curriculum, recommending a cross-curricular approach in terms of which teachers and learners are expected to work collaboratively with communities towards sustainable development.

The envisaged integrated curriculum is to be achieved through a learner-centred approach underpinned by action competence. By pursuing the vision of action competence, the LEESP programme envisaged a democratic teaching and learning process in which learners would be encouraged to act on their values in resolving environmental issues, which are to be seen as arising in communities with conflicting interests at different levels. Thus, the adoption of this type of learner-centred pedagogy reflects the assumption that by becoming democratic, formal education can facilitate the consolidation of democracy in Lesotho. It also reflects an assumption that formal education can be used to achieve economic development through the promotion of vocational skills, including basic life skills.

The EE guidelines also indicate that EE practice should address the three perspectives of education *about* the environment; education *in* the environment; and education *for* the environment. Furthermore, LEESP recommended the adoption of a comprehensive assessment apparatus that emphasises the assessment of knowledge in conjunction with understanding, skills, attitudes and values related to the imported concept of action competence.

It has also emerged from this analysis that some aspects of the content and intended pedagogy of the LEESP programme enjoy synergy with Lesotho's and international

ideals for education and development. This could conduce to the successful implementation of environmental education in Lesotho.

While the guidelines are useful for analyses of geography texts and classroom practices, in order to identify the links between school geography and EE policy intentions in Lesotho, it is important to consider the implications of LEESP curriculum intentions for the implementation of EE in the context of Lesotho. First, the learner-centred pedagogy advocated by LEESP has cost implications in the context of Lesotho, where most schools have limited resources and where teachers work under pressure to meet external examination standards. Secondly, the principles underlying action competence are in conflict with the authoritarian culture of the Basotho. The implementation of action competence may therefore lead to a contradiction between the envisaged school education practice and what learners are used to at home. Finally, the integrated approach recommended by LEESP would require change in the way that subject knowledge is viewed by teachers. Currently secondary teacher education programmes in Lesotho support strong boundaries between subjects by emphasising specialisation. Most teachers are therefore likely to be keen to preserve their subject's boundaries and encourage disciplinary learning in their pedagogic practices.

In conclusion, I reflect on observations that can be made about policy development. The first is that curriculum policy guidelines present selected knowledge deemed necessary for inclusion in the school curriculum. As with most environmental programmes elsewhere, the concept of sustainable development, however controversial, is intended as the overarching goal of environmental education in Lesotho. This is to be achieved through a democratic learner-centred approach, which is also contestable. Another observation is that, while the policy statements are intended to provide directive messages about how environmental education should be implemented in Lesotho, there is some recontextualisation space for practitioners to make their own autonomous decisions in their specific contexts, thus creating an opportunity for local adaptation of the new curriculum ideas. However, the extent to which curriculum implementing agents can make sense of and enact the new curriculum depends on how the policy was conceptualised and disseminated. Finally, the analysis in this chapter has revealed that, as is the case with most policy

documents, the LEESP policy guidelines contain contradictory messages that their developers may or may not be conscious of, which may lead to a tension between policy intentions and classroom implementation. Therefore it would seem that an analysis of curriculum policy requires an exploration of the social context in which it was developed and disseminated. This is the focus of the next chapter.

## CHAPTER 7

### THE SOCIAL PROCESSES OF DEVELOPING AND DISSEMINATING THE LEESP CURRICULUM POLICY GUIDELINES

#### 7.1 Introduction

This chapter provides an analysis of the data generated through interviews with curriculum decision-makers, Examination Council of Lesotho (ECOL) staff and curriculum developers, as well as three members of the Monitoring and Research Team (MRT) who were involved in LEESP activities. The chapter examines the social interaction in the processes of developing and disseminating environmental education policy guidelines under the LEESP, with a view to understanding issues of participation and contestations at the macro-level of curriculum policy development and implementation in Lesotho. I perform this analysis to gain a deeper understanding of the curriculum policy-making process. The analysis is also intended to generate insights for an explanation of why geography teachers in the selected schools incorporated environmental education principles into their classroom practice in the way that they did (see Chapter 11).

The chapter is premised on the assumption that if the process of disseminating and conceptualising environmental education did not take into account the multiple realities of schools and classrooms as experienced by teachers and other stakeholders, there is little chance of the vision of environmental education being realised at the level of the classroom. Another premise is that the development and conceptualisation of curriculum policy is a social process characterised by contestation and controversy, as different actors struggle for domination of the policy discourse in the three arenas of policy development, namely the *context of influence*, the *context of policy text production*, and the *context of practice* (Bowe et al., 1992). Drawing on Bowe et al., Hodgson and Spours (2006) note that policy is not simply transmitted from central government to the implementing agents, but rather that there is a battle of ideas which creates what they call a “political space” (p. 690). As such, analysis of the process of making and disseminating a new curriculum policy needs to uncover the issues of participation, exclusion and contestation as role players made sense of the new policy in their specific contexts (Bowe et al., 1992).

The data generated through interviews with relevant stakeholders, as specified earlier in this section, was supplemented with information from the records of LEESP consultative meetings and workshops held for stakeholders, minutes of the Project Steering Committee, the project's progress reports and field notes compiled by the MRT. The data was analysed under the following themes: development of the project proposal document, the project operational structure, development of the *Reference Note*, development of syllabus attachments, areas of contestation, and tensions and contradictions associated with capacity building workshops held for model schools. Lastly, I consider the possible influence of LEESP educational discourses at the level of curriculum development in Lesotho.

## **7.2 Development of the project proposal document**

Following stakeholder consultative meetings and workshops in 1997, a project proposal was developed by a team of two consultants working with a representative of the National Curriculum Development Centre (NCDC), who later acted as a coordinator of LEESP activities at the curriculum centre. One of the consultants was a Danish expert, who according to the coordinator, assisted mainly in matters of project management to ensure that the proposal was aligned with the funding requirements of the Danish International Development Agency (DANIDA). The other consultant was a Lesotho expert in curriculum development and environmental education.

I held in-depth interviews with the Lesotho consultant, as the other consultant had already left the country at the time of this research. The purpose was to get information on his role in the development of the project proposal, and also on the social process of developing the document. The respondent said he was called upon at a time when he was busy with his PhD, and saw this as an opportunity to bring his environmental education-related expertise into the whole process of LEESP conceptualisation. The respondent said that his input concerned environmental education theory and its conceptualisation in the context of the Lesotho curriculum. According to him, the process of developing the document started with situational analysis, using the views of key people from stakeholder institutions and government departments in 1997. He described the whole process as follows:

*.... there was this reconnaissance phase where there had to be assessment of the situation in the country regarding EE. ... There was a very conscious approach to ensure that ideas and possibilities of the direction that might be taken were guided by the stakeholders. I seem to remember very well that we interviewed stakeholders at NUL and various ministries. Their orientation was to be guided in terms of the project framework as to what should be done. There was a kind of unanimous view that NCDC was an appropriate anchor institution. And really generally the consultants sort of framed and developed the proposal based on the input of relevant departments and stages of debriefing, where after having developed draft proposal we would then go back to stakeholders to brief them again and reconsider their ideas. (MRT 1)*

The respondent said that the stakeholders consulted include key officials in government ministries, institutions involved in teacher education, the NCDC, a teachers' association, and teachers in selected schools. I had access to the minutes of some of the meetings held with the stakeholders. From the list of institutions and government departments consulted, it does not seem that ECOL was involved in the situational analysis conducted by the Danish Cooperation for Environment and Development (DANCED) mission. The former registrar of ECOL was not quite sure whether she had been personally consulted as head of ECOL, and she could not remember the details of the consultation. She said,

*They might have consulted but I don't remember the details of the consultation process. The chances are they consulted with the council but not with me in particular. (ECOL staff 1)*

It also transpired from the minutes of a consultation meeting with NES that a concern was raised that consultation with NCDC professional staff appeared to occur rather too late in the schedule. This was noted despite the fact that, as mentioned earlier in this section, the NCDC was represented by one subject specialist in the team that conducted the consultation process and developed the project proposal. I contend that the NCDC as an implementing agent of LEESP would have benefited from early deliberations on the environmental education reforms, prior to consultation with and dissemination to other stakeholders. It is recognised in the literature that the early involvement of key implementers of curriculum change is a crucial step towards ensuring the successful implementation of the intended curriculum reform (Carl, 2002).

An analysis of a summary report of a two day consultative workshop (12 and 13 August, 1997) for principal participating institutions and participants from a range of other interested and relevant stakeholder groups reveals some important findings on how the key content areas of LEESP were identified, as well as issues of participation. The workshop is reported to have followed a Logical Framework Approach (LFA), with the consultants acting as facilitators. The LFA is a goal-oriented approach to project implementation, which is based on the positivist assumption that following logical steps in conceptualising the project will lead to the successful implementation of the project (Aune, 2000) – as though curriculum implementation were a simple technical process. As is the case with many bilateral projects worldwide, LEESP was designed on the LFA.

According to the report of the consultative workshop, the process of LFA began with a brainstorming exercise in which the participants examined international themes and concerns in environmental education and then considered national trends and developments in Lesotho. Following this, the participants examined environmental problems in Lesotho through small group discussions. From this exercise, the report states, environmental degradation was identified as a core problem in Lesotho, which could be addressed through environmental education. The report further shows that after reflecting on the education system of Lesotho, the participants felt that capacity building in stakeholder institutions and materials development should be among the pillars of LEESP activities.

As indicated in Chapter 6, environmental degradation is described in the *Reference Note* as the most serious problem. The possibility of the workshop facilitators channelling the direction of the workshop outcomes notwithstanding, the intertextuality between the *Reference Note* and stakeholders' views on the core environmental problem could be interpreted as suggesting that LEESP was designed using local input, particularly with respect to environmental issues to be addressed.

While the consultative meetings and workshops that informed the development of the project proposal may have created an opportunity for a –ontextualised social process” (Cornbleth, 1990, p. 12) in conceptualising environmental education, I recognise also the limitations associated with the LFA that was followed in this

consultation process. The approach has an interest in the outcome of the process, which unfortunately might exclude the views of stakeholders whose contribution could be critical to the successful implementation of curriculum change. For example, in the stakeholder consultative workshop referred to above, ECOL representatives do not appear on the list of participants. Perhaps this explains why there was a lack of effective cooperation between NCDC and ECOL on LEESP activities (See *Project Completion Report, p.13*). The *Project Completion Report* describes the involvement of ECOL in LEESP activities as peripheral.

The stakeholder consultation report further indicates that NCDC, which was regarded as a partner institution, was represented only by subject specialists of carrier subjects. The exclusion of other subject specialists at this early phase of EE conceptualisation could have been detrimental to the successful implementation of environmental education, which required a broadly cross-curricular approach.

The consultation report also shows that teachers were represented only by the president of the Lesotho Association of Teachers (LAT). At the time of stakeholder consultations there were two teachers' organisations at the broader national level, namely LAT and the Lesotho Teachers Trade Union (LTTU). The LTTU does not seem to have been involved in this consultative process. This raises a concern as to whether there was a deliberate exclusion of other interest groups. The government of Lesotho at the time distrusted this organisation, for (among other reasons) it had been associated with the 1995 nation-wide teachers' strike over salaries. Thus while it may appear that teachers were represented at this important workshop, in my view this representation was not authentic. Subject panels, which act as NCDC curriculum development support structures (see Section 2.5) were not involved at this early stage of conceptualising environmental education. Van den Akker (2003) makes the point that many top-down curriculum reforms fail because they are characterised by the absence of timely and authentic involvement on the part of stakeholders; in this case teachers, through their subject panels or subject associations.

It also emerged from interviews with the Lesotho consultant who developed the project proposal, and the recorded minutes of initial consultation workshops, that the process of consultation did not take into account parents' views and learners' own

aspirations. While I acknowledge that involving parents and learners would have been an expensive and time-consuming task, it is necessary to recognise them as important stakeholder groups in curriculum reform processes (Marsh & Willis, 2007).

### **7.3 Project operational structure**

In its implementation phase LEESP adopted a participatory support structure that was representative of all the key stakeholders, as identified in the project document. Consistent with the views of stakeholders consulted during the reconnaissance phase of the project, NCDC was the host and implementing institution. It was expected to gradually take over the project's activities towards the end of the phase. Within the NCDC a coordinator was appointed to serve as a link person between the project staff and NCDC staff, as well as with the Ministry of Education and Training (MOET). In an interview, the coordinator said that she also served as an immediate advisor to the project staff, because of her knowledge of the school context in Lesotho. Other than the coordinator, there was a task team consisting of NCDC professional staff. This team worked closely with the project staff in planning and running dissemination workshops for model schools.

To further enhance stakeholder participation in the project's activities, a Monitoring and Research Team (MRT) was established, drawing members from key stakeholder institutions in Lesotho. There was also a Project Steering Committee (PSC) to oversee the project's activities. This support structure involving key stakeholders could be seen as an effective strategy to ensure the country's ownership of the LEESP environmental education reform process, which is crucial for the institutionalisation of environmental education. People who worked with the project from these stakeholder groups were interviewed for their views on the inside workings of the conceptualisation and implementation processes of LEESP.

#### **7.3.1 LEESP task team**

As noted in Chapter 2 (see Section 2.5), the NCDC is an implementing agent of curriculum policy. It is staffed with subject specialists, who work with subject panels on which teachers and other relevant stakeholders are represented, to develop

curriculum materials. The subject specialists at NCDC worked with project staff members who were recruited from Denmark to provide technical assistance. The role of this team was described by the former director of NCDC as significant in providing a forum for engagement with the project staff, so that the project was not necessarily donor-driven in terms of ideas. Some of these subject specialists served as members of the project's task team.

I interviewed six members of this team who were available at the time of my research. The purpose of these interviews, as stated in Chapter 5, was to understand the social process of conceptualising and disseminating environmental education. In order to understand their level of commitment to the project's activities, I asked them to explain how and why they became members of the task team. They said it was out of their interest in environmental education, with some adding that they represented their subjects which were, prior to LEESP implementation, designated as environmental education carrier subjects.

They said that their role in LEESP activities was to participate in the planning and facilitation of staff development workshops held for the model schools. The process of planning the workshops, as described by these respondents, involved meetings which were initiated by the project staff and held at NCDC. Members of the team worked with the project staff to implement a pre-determined work plan for the project activities. They generally felt that their input into this work plan was minimal. One respondent said that the external consultants drew up the work plan on their own, with minor input here and there from members of the task team. One respondent expressed the view that one of the project staff members was imposing ideas rather than creating an opportunity for dialogue and deliberation on the workshops' activities. He said:

*....most of the time I was with the person [mentioning the name of the project staff] who actually wanted the programme to run the way she wanted. So, I would not say I had the power. I can say she was.... What can I say? Maybe authoritarian. (NCDC staff 5)*

Similarly, another member of the task team expressed the following view:

*Initially you would find that when we had a workshop, but it was for one person who would facilitate the workshops from day one up to the last day.*

*But another teacher educator was different. We would discuss the programme before we left for the workshop, then we shared the workshop's activities. The other one was so possessive. She wanted to run the whole workshop. But I raised that issue, and then after that we were included. We were not necessarily dominated but I can say we were excluded.... (NCDC staff 6)*

These extracts illustrate issues of domination which might possibly have undermined the spirit of collaboration or partnership between LEESP and NCDC, and eroded the capacity building of the latter for a meaningful implementation of curriculum change. In this case the dissemination workshops were planned and run in a manner that might not have taken fully into account the contexts of schools. Carrim (2001, p.98) argues that “[curriculum] policies are more effective when they allow for maximum participation, forcing policy to engage with people’s lived experiences and perceived interests at the local level”.

There was however, a different view expressed by one respondent, who felt that the LEESP task team meetings were democratic. She said that members of the team were encouraged to discuss issues rather than just to endorse the work plan. Although this respondent felt that the work plan was open to discussion, there were hierarchical relations between members of the task team and the Danish consultants. It transpired from the interviews that some professional staff at NCDC considered their participation in the LEESP activities a learning opportunity, implying that they lacked expertise in environmental education. Jansen (2001, p.279), writing from the South African context of curriculum reform, notes that the concept of participation is problematic in the sense that “participating groups have unequal power and expertise in different policy forums, leading to different kinds of emphasis in policy outcomes”.

### **7.3.2 The monitoring and research team**

During the inception phase of the project, a monitoring and research team (MRT) was established by the project staff in consultation with the NCDC. The inclusion of the MRT was not originally provided for in the project document. It was added with the aim of monitoring and critically supporting the project as it unfolded. Initially the team was composed of two representatives from each of the key stakeholder institutions namely, the NCDC, ECOL, Inspectorate, LCE and NUL. However, even

before the team started its operations, some members did not show up, while others withdrew from the team for reasons which, according to two respondents, included a feeling of being discriminated against by a member of the project staff. In an informal discussion, one respondent made the following complaint to express her feelings:

*When we were in Qacha's Neck I was restricted as to the type of accommodation and food I wanted. I slept in a very dilapidated B&B while the project staff member slept in a hotel.*

Another person who withdrew from the team said that she also felt discriminated against, as she and a colleague from her institution were not remunerated, whereas the two other members of the team from the University were paid for the time they spent on project activities. At the time of the project, the institution where this member was employed was a government department within the Ministry of Education and Training (MOET). As such, the employees were regarded as civil servants, and in terms of civil service regulations they could not claim any extra payment for work done in the ministry.

The team ended up effectively comprising four members, one person from NCDC, one person from LCE and two from NUL. One of the members of this team had a PhD in environmental education, and he had been one of the consultants who developed the project proposal. His expertise and experience in developing the LEESP project proposal might have added value to the project's implementation. However, a lack of representation of other stakeholder institutions posed a threat to the successful implementation of the project. As reported in one of the records of the Project Steering Committee (PSC), some members of the PSC raised the concern that some stakeholder institutions were not represented in the team, and they urged the project to try to ensure that each stakeholder had representation (Minutes of 17<sup>th</sup> January, 2003). In spite of this, the team of four remained as it was until the end of the project. I was a member of this team, representing – together with a colleague – the Faculty of Education at the National University of Lesotho. As a team we monitored and evaluated the conceptualisation and staff development workshops that were held for stakeholders and model schools, respectively.

I interviewed the other three members to find out how they were recruited for the team, and also to gain an understanding of the nature of the social interaction that

characterised EE conceptualisation and dissemination workshops. For purposes of reference, these team members are designated MRT1, MRT2 and MRT3. As illustrated by the following interview statements, their appointment to the team was based on various factors, including a perceived interest in environmental education:

*I was nominated by LCE (Lesotho College of Education) to represent it. Having returned from school where I was doing EE, the college felt that I could be the better person to represent it. (MRT 2)*

*I joined because it was part of my work. There had been before me one person who had been asked to be a member of the team, mm... two people actually before me. The other one had other things to do. So I was asked to join. Any body from our office could become a member of the team. (MRT3)*

The inclusion of a monitoring and research component in the LEESP operational structure was seen by one member of the team as an opportunity to contextualise LEESP's ideas through collaboration and critical engagement with the project staff. He said that from their observations of conceptualisation and staff development workshops the team produced conference papers, one of which was published in a reputable international journal. These papers were written jointly with the project technical advisor. The interview extract below shows how the co-authoring of these conference papers, in the view of the respondent, was valuable to the LEESP project.

*in developing those papers there would be engagements with ideas very critically .... And one would believe that through those engagements the project coordinator (referring to the Danish technical advisor) became aware of some of our ideas and critical input. His coordination alerted other project staff. But that does not mean the project became what we wanted it to become necessarily, because it also had its own ways of operation. (MRT1)*

Thus while the inclusion of the MRT in the LEESP activities created a “political space” (Hodgson & Spours 2006, p. 690), allowing local experts to influence the implementation process of the project, only limited input into the project's operations was possible. Does this suggest that the project activities did not pay sufficient attention to the MRT's perception of the local contexts?

### **7.3.3 LEESP Steering Committee**

As per the project document, LEESP was designed to include a project steering committee composed of the Permanent Secretary of the MOET or his/her appointee, the Chief Education Officer for curriculum services, and directors or heads of what

were referred to as primary key stakeholder institutions (NCDC, NTTC, NUL-Faculty of Education, LAC, LDTC, Inspectorate, ECOL, NES and Danced). This committee was supposed to act as a board for the project, reporting to the Danish Cooperation for Environment and Development (DANCED), which was the funding donor agency in Copenhagen, Denmark. The committee would meet twice a year within the three years of the project period. While the project document shows a wide range of stakeholder representation on the steering committee, it appears that some stakeholder institutions (ECOL, LAC, and NES) were not represented at some meetings of the committee (minutes of 17<sup>th</sup> and 31<sup>st</sup> January, 2003). This was explained by the project coordinator at NCDC and a respondent from ECOL as the result of the work commitments of individual members.

As outlined in the LEESP project proposal document, the terms of reference of the steering committee included, *inter alia*, the responsibility of identifying ~~any~~ significant problems associated with the implementation of the project, or any malpractices in its day-to-day operations...” (LEESP, 1997, p.31). The meetings of the committee would be chaired by the office of the CEO responsible for curriculum services, which was vacant for the major part of the period of the project’s implementation. Minutes of the meetings were co-recorded by the project coordinator who was a member of the NCDC professional staff, and the technical advisor, who was a Danish national. This co-recording might have put both the NCDC and the project staff in a position of power with respect to decisions made at the PSC meetings.

Five members of the Project Steering Committee who were available at the time of my research were interviewed for their views on the general operations and implementation of the project. From the interview data it appears that there was a problem regarding the coordination of the project’s activities, both at the NCDC and at the level of curriculum decision-making within the MOET. During the project period there were two acting directors at NCDC (acting in succession), with a new director only being appointed in 2003, two years after the start of the project’s activities. While this newly appointed director is reported to have shown support for the project, the completion report shows that there was less support from the senior

level of curriculum management in the MOET (see the *Project Completion Report* p. 13).

Because the office of the CEO responsible for curriculum development was vacant, as mentioned above, meetings of the steering committee were chaired by the CEO responsible for tertiary education. But he would often miss meetings because his own work took priority over the project's activities. When this happened, he would ask another officer of lower rank (an inspector for tertiary education) to deputise for him. This officer expressed the concern that sometimes she would be informed of a meeting at such short notice that she would have to attend unprepared. In such circumstances, her role was restricted to ensuring that there was order in the meeting rather than giving direction or guiding discussion. She also expressed the opinion that the MOET was not ready for the implementation of EE at the level of curriculum decision making and did not fully commit itself to the activities of the project. She wondered why the ministry did not assign a senior officer to work full-time on overseeing the project's activities and constantly report to the PS. "The ministry seemed to have not taken the project seriously", she said.

Assigning an officer with the rank of inspector to chair the PSC meetings was described by another respondent (who was then the chief inspector for secondary education, one rank lower than CEO) as an anomaly. The respondent expressed a feeling that the acting CEO-curriculum should have asked one of his counterparts (i.e. CEO-primary education or CEO-secondary education), or someone with at least the rank of chief inspector, to chair the meetings whenever he was away. In this way, she noted, there might have been continuity and follow-up with regard to decisions made at the PSC meetings, because all officers in the position of chief inspector were members of the steering committee and would normally attend its meetings. The literature shows that the successful implementation of curriculum reforms relies on a clear **policy memory** held by senior officers and based on their previous experience of curriculum development projects (Hodgson & Spours, 2006). A person of the rank of inspector could not be expected to have a clear policy memory or to make a valuable contribution in terms of chairing the PSC meetings.

It also appears from the minutes of the PSC meetings that the attendance of other senior officers in the MOET was not regular. A respondent who was at the time of LEESP serving as a senior officer in the MOET attributed this to a lack of coordination of activities within the ministry. She said that sometimes they would be called, at very short notice, to attend an important function where the Minister was going to give a speech. She added that, unlike other projects (presumably those funded by the World Bank), LEESP did not spread a lot of money around to attract the full attention and commitment of the Ministry. What was the interest of the MOET in LEESP? The literature on international funding (see Section 4.10.2) suggests that in many African countries, the acceptance of innovative curriculum ideas promoted by international donor agencies is not necessarily motivated by educational goals, but by financial incentives (Chilsholm, L. & Leyendecker, 2008).

Other challenges faced in the operations of the project were policy related. As stated in one of the project's completion reports, LEESP was implemented in an educational environment where there was no clearly articulated comprehensive national policy for educational development. This is reported to have forced the project team to adopt a project-approach – rather than a holistic, integrated strategy – in its implementation (LEESP *Project Completion Report*, 2005, p.13). The lack of clear policy guidelines, coupled with the absence of effective structures to foster EE integration are reported to have constrained the development of effective co-operation or synergies among the stakeholders (ibid.). It is noted in another LEESP report that the absence of a contemporary and comprehensive policy or vision articulating the roles and functions of the different stakeholder institutions led to a variety of interpretations of national needs and agendas. The report states that: “Many institutions have a tendency to follow their own agenda without a common and clear vision of the direction for the necessary educational changes” (LEESP, 2002, p. 5), thus resulting in incoherent programmes.

This lack of synergy among institutions involved in the curriculum management cycle is further illustrated by a comment made by a respondent working for ECOL:

*That was a curriculum project not assessment project. If you take a project and put it at NCDC and make a subject specialist at the centre to be the coordinator of the project, what you expect from us? If you want to make a*

*curriculum and assessment issue you have to make sure that the representation within the project also includes ECOL staff. When you attend their meetings you become like a teacher, then you would not feel comfortable. (ECOL staff, 2)*

This interview extract also highlights the existence of power issues between NCDC and ECOL, which had the potential to impede the EE curriculum reforms. Ansell (2002), reports similar findings, noting that there are clashes between the two institutions over curriculum design, and that this could possibly stall change or manipulate education policy. As can be noted from Chapter 2 (see Section 2.6.2), the lack of coordination of curriculum reform processes appears to be a perennial problem, threatening the successful implementation of curriculum reform in Lesotho.

#### **7.3.4 The Project Activity Group**

The project support structure was also to be enhanced by a Project Activity Group (PAG), consisting of an appointed focal person from each of the stakeholder institutions. Given the tight work schedule of members of the Project Steering Committee, the powers of this committee (PSC) would be assumed by the PAG, which would actively participate in project activities (LEESP, 2001). The role of the PAG was to participate in discussions with project staff and in the monitoring of the project's progress. It was also expected to analyse and debate with the project staff major problems arising from the project's activities, and approve minor adjustment in the project's programme.

Regrettably, this group did not last for the duration of the project. In an interview, the project coordinator said that the PAG was regarded redundant, since there were task teams, such as the LEESP task team composed of NCDC professional staff, and the monitoring and research team, which had similar functions. In my view, such a group, with broad stakeholder representation, would have contributed expertise and experience to the project and critically engaged the project staff regularly on the key concepts of the project, in full awareness of the local context. Relying on the input of NCDC professional staff and members of the MRT alone might have denied the project critical input from system-wide stakeholders' views. Although some members of the NCDC professional staff said in an interview that they had volunteered to

become members of the LEESP task team, the bottom line is that they were immediate partners and implementing agents of the project. As such, they participated in the project's activities as part of their routine work. Again being civil servants directly answerable to the director of NCDC, who was part of the project management group, the NCDC staff might have been reluctant to raise critical questions and issues associated with the day-to-day operations of the project. One has to ask: was the potential value of the PAG, with stakeholder representation from outside the NCDC and therefore greater autonomy, ever fully considered?

It should also be noted that some members of the MRT participated in the project activities as consultants, and were paid for the time they spent on the project's activities. As such their enthusiastic response to the financial incentive might have been wrongly interpreted as full commitment to the project. The financial incentives might also have interfered with the quality of debate between this team and the external consultants (project staff).

#### **7.4 Development of the *Reference Note* for Environmental Education in Lesotho**

As was mentioned in Chapter 1, the *Reference Note* was the product of two stakeholder workshops. The first workshop was held in 2001 during the early phase of the project implementation, while the other was held in 2004 to obtain further inputs on the draft *Reference Note*. Based on the views of participants in these workshops and also on the need assessment done through stakeholder consultation, the project staff compiled the *Reference Note* (see LEESP, 2004). Drawing on the views of curriculum stakeholders might have created a social context for the co-construction of the key ideas of LEESP, although this would depend on how the workshops were conducted. According to the project coordinator at NCDC, the *Reference Note* was developed from international environmental policies such as *Agenda 21*, and from Lesotho government policy documents such as *Constitution of Lesotho 1992* and *Lesotho Environment Policy 1997*.

While it is claimed, in that document, that the *Reference Note* is a key policy text representing the views of the major stakeholders and reflecting the local context, some stakeholders (including some NCDC professional staff) expressed the view that

they were not involved in its development. For example, in expressing his regret over his lack of involvement, one NCDC respondent said:

*I was never involved myself. That was a political project, which was signed at political level, is just hailed from top to be implemented. Otherwise, if I was personally involved, I would have raised a lot of issues there...And err... we could have found alternative philosophies, which may at least make the project successful. Nevertheless, the project itself had good principles of concepts which are worth trying given resources and training, particularly if you are looking at emancipating learners. We should emancipate them from our own perspective not European perspective. (NCDC Staff 1)*

Another respondent, an active member of the MRT, was not quite sure whether he was involved in the development of that document:

*I am still not very clear, who actually was involved in these workshops. However, personally, I don't seem to remember being engaged as an individual.... I might have been involved, but I don't seem to remember. (MRT 1)*

These responses might be interpreted as suggesting that Lesotho education practitioners were not directly involved in the development of the *Reference Note*, except for their (limited?) input during the two workshops. Given this finding, the extent to which the *Reference Note* can be regarded as representative of the views of educational stakeholders in Lesotho cannot be ascertained. The process through which that document was developed contrasts with the normal procedure of curriculum development policy in Lesotho, where policy is initiated at the level of curriculum decision making in the MOET and then translated into curriculum documents by the NCDC, working together with subject panels (see Section 2.5).

However, an environmental education coordinator at NCDC reported that she attended meetings that led to the production of the *Reference Note*, which were chaired by the project technical advisor, a Danish consultant. When asked to describe her role and that of other NCDC staff members who attended the meetings, she said:

*We felt that our role was advisory, hence the expectation was that the project staff would make final decisions. Our role was to identify those concerns as laid out in Rio Declaration that were relevant to Lesotho. The project staff*

*came with the methods such as storyline approach, cooperative learning, paradise valley. (LEESP Coordinator)*

### **7.5 Development of syllabus attachments**

LEESP introduced syllabus attachments to the existing syllabuses for all secondary school subjects as a strategy to integrate EE into the curriculum. The attachments were appended to the *Environmental Education Teachers Handbook*, which was distributed to the model schools. These syllabus attachments, contrary to the usual process of curriculum development (see Section 2.5), were developed by subject specialists at NCDC with the exclusion of subject panels. The views of the subject panels were only solicited through one conceptualisation workshop which was held during the early phase of the project's operations. The project had employed a material design specialist, a Lesotho citizen who had been sent by the project for a training programme on materials development at the EE regional centre in Howick, South Africa. This might have created space for regional input into the conceptualisation of environmental education in Lesotho.

This material design specialist worked with the NCDC subject specialists in developing syllabus attachments. I held informal discussions with this person to get her views on the social process of developing these attachments. She said that the role of subject specialists was to make suggestions on how EE could be integrated into their specific subjects, and these suggestions would be discussed in professional staff meetings at NCDC. She alleged that some specialists came to the meetings unprepared, and that sometimes the discussion was not fruitful because of petty controversies. She said that mostly she would just go ahead and introduce changes, based on her readings in EE and material design, and with the help of two external editors appointed by the project for the purpose.

Although the material design specialist felt that there was less than complete cooperation from the NCDC subject specialists, the responses of the former geography subject specialist suggest that there was a collegial social environment conducive to a cross-curricular approach. She described the process as follows:

*...we had to sit down as different subject specialists and see how we relate to each other. For instance you would realise that geography links with science and agriculture. So we sat down and established the common themes so that we avoid duplication. We used the thematic approach to develop the syllabus attachments. (NCDC staff 6)*

The former director of NCDC felt that his professional staff (subject specialists) played a pivotal role in devising the syllabus attachments:

*LEESP, though had consultants, it was not consultant-driven. On their own they would not manage to go to model schools for workshops. They would not even, on their own, manage to develop syllabus attachments. (NCDC Staff 2)*

While the NCDC staff, according to the NCDC director, played a major role in developing the syllabus attachments, the fact that subject panels, with teacher representation, were not involved in this exercise, is a cause for concern. The Lesotho curriculum change management model employs what can be described as a participatory approach, recognising the important role of subject panels in reviewing and developing syllabuses (see Table 2.1). Commenting on the process of developing the syllabus attachments, a geography subject officer at ECOL, who was previously a geography subject specialist at NCDC, said that she was not involved in the development of the attachments. She added that ECOL was only involved at the broader level of stakeholder consultation workshops, when EE was discussed at the conceptual level. In her view, her involvement in this process would have been helpful in terms of understanding her role as an examiner. The respondent expressed her frustration at the fact that, despite her efforts to seek information on how EE could be integrated into geography assessment, there was no assistance forthcoming. She further explained that since she did not participate in the development of the syllabus attachments, she was not in a position to know whether she was doing enough to integrate EE into geography assessment. Whether or not EE has been integrated into geography examinations for junior secondary education is beyond the scope of this study. Nonetheless, one might infer from the views of this geography examination officer and the concerns expressed earlier by another ECOL staff member (in Section 7.3.3), that little is being done to integrate EE into national geography assessment standards. This could have implications for its implementation at classroom level, given that the Lesotho education system is examination oriented (see Chapter 2).

Another respondent who was then a science subject officer at ECOL said she was not even aware of the syllabus attachments that were intended to guide integration of EE into science. She noted that,

*If a project is based at NCDC sometimes the ideas do not get to us at ECOL, because there is some sort of... maybe now it can happen because curriculum and assessment are sort of working together. They inform us if they think we need it. (ECOL staff 2)*

Another flaw in the process of developing syllabus attachments is that subject inspectors, whose work it is to supervise the implementation of the curriculum in schools, were not involved. An inspector who was then responsible for geography and history at the Central Inspectorate within the MOET said, in our informal discussion, that he did not participate in any activities relating to LEESP, including development of syllabus attachments. He added that he does not remember getting an invitation to attend any of the LEESP meetings or workshops.

The data reported in this sub-section seems to suggest that the participation of subject panels, which include teachers and other key stakeholders, is evident at the level of consultation workshops, but was minimal at key points in the development of the *Reference Note* and syllabus attachments. This has the potential to compromise the value of curriculum recontextualisation in the processes of conceptualising and implementing environmental education. The process reflects also a technical rational model of introducing curriculum change, where teachers are regarded as mere implementers, denied the opportunity to contest and give consent to new ideas in the light of their specific work contexts. It should be noted that LEESP, as claimed in the *Reference Note*, was indeed built on democratic principles, adopting a participatory curriculum development strategy that recognised the importance of stakeholder participation and empowerment (LEESP, 2004).

## **7.6 Areas of Contestation**

It is widely recognised that curriculum is an area of contention, as different stakeholders and interest groups struggle for domination (Bowe et al., 1992; Goodson,

1997; Jansen, 2001; Apple, 2002; Olssen et al., 2004). In this section I consider areas of contestation in the process of conceptualising and implementing EE in the context of LEESP. From the interviews with curriculum developers and other members of the LEESP MRT, it became clear to me that the need to introduce EE in the formal education system of Lesotho was not contested at the level of curriculum development. Some respondents at NCDC, including the former director, explained that the decision to introduce EE had been made at the senior level of curriculum decision-making within the MOET. However, there was disagreement about some aspects of LEESP and its approaches to introducing environmental education. The interview data pattern points to the following issues: the coordination of LEESP, model EE integration, dissemination strategy, conceptual issues, and continuous assessment.

### **7.6.1 Coordination of LEESP**

A respondent who was involved in the development of the LEESP project proposal said there was consensus among the stakeholders who were consulted that the NCDC was an appropriate anchor institution for the project. There were, however, concerns about the housing and coordination of the project; as one respondent recalled of the LEESP workshop held for ECOL, Inspectorate and NCDC:

*I think you could sense controversies of power struggle, like where was this project housed? Some people feeling that since the project was based at NCDC, it was not meant for them. (MRT 3)*

This was evident in an interview with a member of ECOL staff, who felt that her institution should have been represented in the coordination of the project, since the project was intended to influence both curriculum and assessment (see Section 7.3.3 for her views).

A minor concern was also raised during the reconnaissance phase of the project. The record of the consultative meeting with the then Dean of the Faculty of Education at the National University of Lesotho shows that the Dean felt that the project should be coordinated within the faculty, as similar environmental education initiatives in South

Africa are housed in the university faculties of education (Minutes of 8<sup>th</sup> August, 1997).

It also transpired from my interview with the former director of NCDC that initially there were some conflict between the MOET and Project management on the administration of the project. According to this respondent, the MOET wanted the administration of the project to be its responsibility as is the case with other projects, but the donor agency (DANCED) insisted that the project be centrally administered from Denmark. The respondent added that DANCED would trust only its own technical structure, which was already operating in the region of southern Africa. Although I acknowledge that there was a need for the donor agency to exercise control over the management of the project, its lack of trust in the local projects' administration structures in Lesotho could possibly have cost it the full support and commitment of the senior officers in the MOET.

### **7.6.2 Model of EE integration**

As stated in chapters 1, 3 and 6, consistent with official policy documents in Lesotho, LEESP introduced environmental education as a social process to be integrated in all school subjects. However, during its early phase there were issues of contention relating to the model of integration. A respondent who participated in the development of the LEESP project proposal said that during their stakeholder consultation meetings leading to the development of the document, the concept of the carrier subject was devised and there was consensus that certain subjects could carry EE. As listed in the project proposal document, at secondary school level there were six such subjects: geography, science, development studies, agriculture, home economics and health/ physical education (LEESP, 1997).

While the intention to integrate environmental education into carrier subjects could have put geography in a privileged position, there were dissenting voices on the use of a carrier subject approach. In the early phase of the conceptualisation of LEESP, there were ambivalences concerning an appropriate implementation strategy. According to a respondent at NCDC, some curriculum developers supported the idea of integrating

environmental education into carrier subjects only, whereas others had a feeling that it should be a stand-alone subject. There were yet others who felt that it should be integrated into all subjects, to avoid curriculum overload.

The following interview extract typifies the nature of the contestation at the national level of curriculum development:

*Originally we had individual subjects which were supposed to be carriers of EE. Later on we had to say, we cannot have such a thinking. If we are talking about integration we cannot have such thinking as carrier subjects. [the idea of using] Carrier subjects to us is contradictory to the idea of integration. (NCDC Staff 1)*

The integration of environmental education into carrier subjects only was also noted in the Faculty of Education at the National University of Lesotho. Monaheng (2007) reports that some members of the faculty felt that only the staff teaching the identified carrier subjects should be involved in LEESP activities as the project would have a direct bearing on their subjects. This is an indication that environmental education is seen by some teacher educators as aligned with disciplinary subjects, rather than as a social process that can enhance the whole school curriculum. This perception poses a threat to the successful implementation of environmental education at school level.

However, despite the disagreement concerning the model of integration for environmental education, as reported in this section, eventually the decision was made to shift from the carrier subject approach to the notion of integrating EE into all subjects. It would appear that the argument for the cross-curricular approach was based on the assumption that integrating EE into carrier subjects only would serve to marginalise environmental education into a few school subjects – particularly geography, which is offered as an optional subject.

### **7.6.3 Issues associated with the dissemination strategy used**

As indicated in Chapter 1, LEESP used twenty schools as “model schools” to model integration of environmental education in all school activities. The schools were selected from a group of what were formerly known as trial schools. The NCDC was

expected to support these schools in the second layer of EE dissemination, to ~~neighbouring schools~~".

The strategy of using model schools to disseminate environmental education is reported by some respondents to have raised concerns among curriculum developers. According to these respondents, the approach was challenged on the basis of it being time-consuming, as there are currently no networks of teachers. Teachers at model schools would have to travel to their neighbouring schools, which are often some distance away. In the view of some respondents, the commonly used cascade model, where teacher-representatives are called to a central place for training, would have been more appropriate and cheaper. The following interview extract captures some of these concerns:

*There was no way in which we would find teachers, especially in the primary schools, going out to train their colleagues. So we did advise that there would be a time when a neighbouring school would be some 20-30 kms away. And also .... it would take five to six years to train the whole country. (NCDC staff 3)*

Another respondent at NCDC spoke at length on the same issue of dissemination, highlighting problems associated with the notion of whole school development:

*So.... on the issue of whole school development we raised concerns that schools do not have resources to implement it. Secondly, the type of leadership at schools, being teachers and principals is not ready for whole-school development. It is still within the centre-periphery perspective whereby innovations are always leashed out. So that in itself it proved as they were about to implement the whole project that the whole school development approach is good on paper or is good on... where you had networks of teachers. (NCDC Staff 1)*

Indeed, the environmental education coordinator at NCDC reported in an interview with me that the second phase of dissemination to other schools was frustrated by a lack of funding for the purpose after the LEESP project period had elapsed. The coordinator also said that while they could still manage, to some extent, to support the model schools in their dissemination of environmental education to other schools with the few resources available, the NCDC was instructed by the authorities within the MOET to focus on the activities of a new donor-funded curriculum reform promoting

life skills education. This was confirmed by the former director of NCDC, who said the ministry felt that, given the shortage of funds, all the emerging curriculum issues including environmental education should be subsumed in life skills education, which had funding at that time. This new reform on life skills education was funded by the United Nations Children's Fund (UNICEF). Could the apparent abandoning of environmental education at this critical phase of country-wide dissemination confirm the views expressed earlier by two members of the LEESP Steering Committee, that the MOET did not fully commit itself to LEESP activities? (See section 7.3.3). Or could this be a reflection of a common problem of lack of capacity in developing countries to handle curriculum reform, especially beyond the period of donor funding, as noted in the literature (Chilsholm & Leyendecker, 2008)? If the latter is the case, it could be argued that LEESP did not take into account this contextual reality when adopting a model school strategy of dissemination.

#### **7.6.4 Conceptual issues**

LEESP introduced new concepts such as action competence and whole-school development. The concept of action competence was reported by most respondents to have been highly welcome by educationists in Lesotho. One respondent said:

*I think action competence was... people had a feeling that yes we having been having education all these years but the learners do not seem to be doing anything about what they have learnt at school. So action competence was greatly received as one way of putting life into subject. I think learners having gone through a programme they would be able to take action. (NCDC staff 3)*

In describing her impression of the introduction of environmental education, another respondent explained the potential value of action competence in geography.

*I was very happy because I had realised that geography has some weaknesses. For instance, we learned about geography as students as teachers, we know about soil erosion, soil conservation, we learned about the importance of clean environment, but there is no difference between me and a person who has not learnt geography. So the project came up with the concept of action competence which can be used to improve the teaching of geography. (NCDC staff 6).*

While most respondents said that action competence was well received, another respondent who is a senior professional staff at NCDC expressed a different view:

*The contestation was that they advocated school-based professional development and also they advocated action competence, which is based on Eastern Europe philosophy of Bildung, which is a socio-political philosophy about democracy. (NCDC staff 1)*

One other respondent explained that although the concept of action competence seemed to be a good idea in the Lesotho context, in terms of teaching and addressing environmental issues, there was at the same time an awareness of the limitations associated with examinations and a disciplinary approach. The respondent therefore felt that an opportunity should have been created for project staff and local experts to co-construct the new concepts over a period of time.

It is worth noting, however, that while the concept of action competence appeared to be new in the education system of Lesotho, one respondent felt it had been there before but in a different version. Responding to the question on whether the Lesotho conception of learner-centred pedagogy had always been in line with the notion of action competence, the other respondent said:

*I would say we actually didn't understand it. That is why I say we had picked it. But other subjects had, methodologies in science were already like that through the help of the projects [citing a few examples of other previous project], without calling it action competence. (NCDC staff 2)*

This view reflects what Bertram (2008), after Spillane et al. (2002), describes as the natural tendency to view new curriculum ideas, especially in developing countries, as minor variations on what is already known and practised. Chisholm and Leyendecker (2008) also observe that in many African countries grand philosophies are generally acceptable because they appear not entirely new and are ambiguous. If this is the case, then little can be achieved in terms of translating new policy into practice.

Another controversial issue was the whole school development approach, which was one of the key concepts introduced by the project. Two respondents said that they protested in vain that the whole school development approach would not work in Lesotho, given the limited resources and typical style of leadership. One respondent added that the approach had been introduced in 1973 as part of what was then known

in Lesotho as the experimental school project, but had never worked out. This information is corroborated by the findings of a study commissioned by LEESP (during its extension period) to assess curriculum dissemination models previously tested in Lesotho. In that study Jobo, Mokuku and Nketekete (2005) report that whole school development was the first model introduced in Lesotho to support a learner-centred approach. However, according to their findings, this model was officially abandoned because practical conditions in schools were not conducive to its implementation.

There was a feeling that, although the local school contexts in Lesotho were known to be unsupportive of the whole school development idea, the Danish had insisted that it was part of the strings attached to the funding of the LEESP project.

*....they [Danish project staff] drove it in as part of donor agency conditionalities. They drove it in as... you know even the teacher educator consultants were bringing that, like I pointed Bildung philosophy is the Danish philosophy, they bring it here. It appeared as if it was a driving force that in order for EE to succeed we should be looking at educational issues from this perspective. (NCDC staff 1)*

One might ask why it was in the interests of the Danish to push this idea into the educational system of Lesotho? Although it would be risky to make conclusive statements at this stage, given the data I have, it seems to have been part of an attempt to impose Danish hegemony in the implementation of LEESP. Whether this was done consciously or unconsciously could not be established by this research.

#### **7.6.5 Continuous assessment**

As noted in Chapter 6 (see section 6.8), LEESP emphasised the use of continuous assessment as a strategy for assessing progress in environmental education, particularly in the area of action competence skills. There were concerns about the implementation of this assessment strategy. Mokuku et al. (2005) report that, in a LEESP dissemination workshop held for subject panels, there was general apprehension that the implementation of continuous assessment would encounter problems. They note from their study that this could be a reflection of the dominant paradigm in Lesotho, where passing final examinations alone is regarded as a means

to success in education. In my interview with respondents at ECOL, similar concerns were expressed. A respondent from ECOL felt that the implementation of continuous assessment would be costly. Another respondent made the following observation:

*The project had their own philosophy of EE, which related to changing the mindset of individual, and they thought we were not doing that. I always felt they needed too much from us because we all know that type of examination we give is paper and pencil. If they wanted assessment for learning that is better done in the classroom rather than in public examinations. (ECOL staff 1)*

This view of examinations might well hamper the LEESP intended curriculum reforms at the national level of curriculum assessment. ECOL is identified in the LEESP project document as one of the key stakeholders expected to make a contribution to the project –in the form of assessment and feedback on the performance of the new curriculum that integrates environmental education” (LEESP, 2000, p.25).

LEESP expected that the model schools would put pressure on ECOL to set a special examination integrating practical skills related to action competence. The question is whether these schools would have the power to influence the examination body, as was expected. The former registrar of ECOL said in an interview that if normal procedures had been followed ECOL could have explored the possibility of including continuous assessment. Commenting on the organisational structure of the project she said:

*There was no link between the LEESP steering committee and NCC. NCC as a board mandated to oversee curriculum matters should have been the body to instruct ECOL to assess environmental education. The steering committee did not have the power to instruct us. ... However, we were not so rigid. If the steering committee approached us we would have explored possibilities of assessing it like we done with other trial syllabuses. (ECOL staff 1)*

Integrating continuous assessment with examinations has been a perennial problem in Lesotho, despite policy pronouncements to that effect (*Clarification of the Aims of Basic Education for All*, 1992). It is identified as one of the major barriers to curriculum reform in Lesotho (Ansell, 2002).

In the light of the contestation that characterised the conceptualisation of LEESP's ideas in the early phase of the project, it should be interesting to analyse the dissemination process at school level.

### **7.7 Teacher professional development workshops: contradictions and tensions**

As the literature reviewed in Chapter 4 (see section 4.11.2) illustrates, teacher professional development is seen an effective strategy of disseminating new curriculum policy. After the conceptualisation phase of the project in 2001, LEESP held a series of professional development workshops for staff at the twenty model schools (see Chapter 1). The workshops were held in schools and for that reason described as school-based. They were intended to build capacity and social structure for the effective dissemination and implementation of environmental education (LEESP, 2000). The move to build capacity at school level could be seen as an effort by LEESP to shift:

from *designing controls* intended to direct the system to *developing capacity* that enables schools and teachers to be responsible for student learning and responsive to diverse and changing student and community needs, interests, and concerns. (Darling-Hammond, 1998, p. 643)

The professional development workshops were supposed to be organised according to the notion of emancipation and guided by the vision of action competence (LEESP, 2000). However, the analysis of data generated through interviews with members of the MRT and LEESP task team, as well as from field notes recorded by members of the former team, reveals tensions and contradictions that had the potential to undermine the intended goal of these workshops. Most of the contradictions and tensions were associated with the structure of the workshops, the general approach used, and the action research strategy recommended by LEESP.

#### **7.7.1 The structure of the workshops**

There was to be a uniform programme for all schools (both primary and secondary, rural and urban), as though all school contexts were the same. The first four rounds of

workshops focused mainly on the conceptualisation of environmental education and the development of schools' environmental education policy and teaching methods, rather than seeking to identify and understand aspects of teachers' practice which needed to be changed or strengthened (Martin, 2008). In these workshops teachers were introduced to basic concepts of environmental education and theories of teaching and learning in an expository manner. There were also demonstration lessons, taught by workshop facilitators, which were intended to model application of the teaching/learning theories.

These demonstration lessons would normally start with a formal lecture, with a workshop facilitator playing the role of a teacher teaching about the structure of a flower. This would be followed by another lesson where learners were involved in some activities, and then another lesson in which the teacher played a facilitatory role. After such demonstrations, teacher participants would be asked to describe the features of each lesson in terms of the role of the teacher and the learner, and the view of knowledge underpinning the lesson. In the next school visits teachers were asked to try out the teaching approaches discussed in the previous workshop.

Asking teachers to try out a teaching approach after a formal presentation had been made reflects a technicist assumption that good teaching is preceded by theory, rather than a socially critical view wherein theory is generated from practice (Carr & Kemmis, 1986; Higgs, 1998). This approach proved ineffectual, as in many schools teachers simply staged shows without evidence of critical reflection on the new teaching approaches. For example, at one workshop for a secondary school held on the 2<sup>nd</sup> April, 2003, a member of the MRT noted that a teacher who got stuck in leading class discussions on the metaphor of a *paradise valley*, solicited help from a project staff member: 'What to do next?' This reveals that the teacher thought there was a standard procedure to be followed. It also suggests that the teacher regarded the project staff member as an expert capable of solving his or her classroom problems.

Another contradiction was noted in a different school by a member of the MRT, in a workshop on the school's environmental education policy. The process followed a linear approach in terms of which teachers would first identify environmental problems in a school, and then develop policy statements addressing the problems. In

a workshop which was held on 28<sup>th</sup> October, 2002, field notes from the report by a member of MRT show that a teacher educator (project staff) who was facilitating in that workshop expected the teachers to rigidly follow certain steps in developing school policy. In this school, as reported by the member of the MRT, the teachers had outlined suggestions on what could be done to address school environmental problems, but without a formal written environmental audit. Instead of building on what the teachers had done, the facilitator insisted that the policy be developed procedurally (ibid.). Such an approach would tend to discourage creativity on the part of teachers, thus contradicting the goals of emancipation in teacher professional development programmes.

There was also a feeling that the workshops' schedule was too tight, which compromised the quality of the discussion. In one school, the MRT's field notes show that teachers expressed a concern that the pace of the workshops did not allow for constructive comments and reflections. One of the members of the MRT observed in his field notes that activities were rushed, some even skipped, and he felt that more time was needed for discussion. This reflects a tension between the LEESP's emancipatory ideals and the need to complete the workshop schedule within the set deadlines.

### **7.7.2 The general approach used in planning and conducting workshops**

The workshops held for the model schools were generally described as school-based (*LEESP Progress Report* no. 2), suggesting that the approach was supposed to be participatory. However, analysis of the interviews with members of the MRT and LEESP task team reveals certain elements of a top-down approach in the manner in which the workshops were planned and conducted. Some respondents who were members of the LEESP task team felt that their input into the programme of the workshops was not sufficient. They reported that they operated on a pre-determined work plan, which had been prepared by LEESP project staff with minor consultations with the EE coordinator at NCDC. This indicates some form of hierarchical power relations between the project staff and members of the task team, and thus contradicts the vision of empowerment in the process of curriculum development (see also

Section 7.3.1). It could also put at risk the prospects for ownership of the project by the NCDC as an implementing partner.

There is no indication in the responses of teachers or learners or community members having had a significant voice in shaping the workshop activities. The interviewees said that the pre-determined programme minimised teachers' input into the workshops' activities, reducing them to the status of recipients of expert knowledge. When asked whether the teachers were given an opportunity to add an item to the workshop programme, a respondent said: *"No. Not at all. Theirs was just to follow our plan"* (NCDC staff 4). Another respondent explained: *"The role of the teachers was to participate and follow the pre-determined programme"* (NCDC staff 5).

This reflects a top-down approach in terms of which teachers had little control over workshop activities, and which is at odds with the project's goal of emancipation. It also reflects a tension between the need to empower teachers and an interest in the end product of the project, a characteristic feature of the Logical Framework Approach (Aune, 2000) followed by LEESP.

However, two respondents expressed a slightly different view of the level of teachers' input into the workshops' activities:

*I think I can say that initially teachers didn't have that voice, partly because the project initially seemed to be using a top-down approach. But as I say when things changed, the teachers gained strength to voice out things so that the project staff were able to use that voice. I can just cite an example, where teachers suggested activities that they could do following the training. You would find that these activities are actually based on the situations of the teachers, and when they brought out these suggestions (I can do this and that)...., the project staff came in. They actually helped teachers to work on the situation that was prevailing there in that particular school. (MRT 2)*

*Yes they did have input. Like take a case of recycling, you would find that areas like Maputsoe where there are factories, they would say the activity here would be to collect waste around their areas and then make good use of it. The practical activities were not necessarily determined by the project. (NCDC staff 3)*

While these respondents felt that the teachers made a contribution, from the extracts above it would seem that their input was limited to suggesting activities they could do, as a way of showing their understanding of what was required of them. If the workshops had indeed been school-based, as it was claimed they were, one would have expected that teachers would be allowed an active voice in the activities of the workshops.

One of these two respondents (MRT 2) also felt that learners had input in workshop activities, as whatever was done was done with the learners, but not to the learners. She spoke emphatically to express this view:

*I don't want to say [it was done] **on** the learners, because... you know.... It was at this stage where you could see teachers involving learners even in the planning some of the activities. Teachers were planning **with** the learners. So that is why I am saying the teaching was happening **with** the learners not **on** the learners. (MRT 2)*

She mentioned that in one school the teachers and learners planned together to involve the community in solving environmental problems in the school and the surrounding area.

### **7.7.3 An action research strategy recommended by LEESP**

Teachers were introduced to action research as a strategy to encourage reflective teaching. They were expected to keep a log book to record their strengths and weaknesses, with the purpose of improving their teaching. It was intended that through reflection the required teaching skills and knowledge would be developed, and then sustained through use on the job (LEESP, 2000). The interview data, however, suggests that teachers faced challenges with the use of the logbook.

*Using a log book was one of the things that teachers had to grapple with and try to see how it can fit into their work. (MRT 2)*

Data extracted from the field notes of the MRT also show that teachers at the model schools had concerns about using a log book. In one secondary school a member of the team noted that teachers were reluctant to use a log book, arguing that it was time-

consuming and had nothing to do with environmental education. This reluctance was also noted in a different secondary school where a member of the MRT noted that out of the twenty teachers who had attended the workshop only three had filled in their log books. The field notes further show that, when asked to fill in the log book daily a teacher at this school remarked as follows: *“It sounds like a punishment”* (MRT field notes, 26 September, 2003).

It would be naïve to interpret this observation as suggesting that teachers in the model schools do not reflect on their teaching. It is recognised in the literature that teachers naturally plan for their lessons and reflect on them (Liston & Zeichner, 1990; Christenson et al., 2002), and it only becomes a problem when they have to engage in formal or systematic research. Perhaps the challenge posed by the log book could be attributed in part to existing organisational structures in schools. Generally, as the literature suggests, teachers are prevented by heavy workloads from engaging in action research (McKernan, 2008). What is more, the successful implementation of action research requires a collegial school environment where teachers can openly share their experiences (Kang, 2007). One has to ask whether LEESP considered these school contexts and created the necessary conditions for the implementation of action research.

Another observation is that the manner in which teachers in the model schools were introduced to action research was epistemologically and methodologically flawed. Action research was introduced in the latter stages of the project's intervention, in workshop no. 5, subsequent to a workshop during which class observations were made by the project team. In my view, action research skills could and should have been integrated into all the workshops, so that teachers could have learned to reflect systematically on practice throughout the LEESP intervention. For example, it would have been possible to integrate action research into workshops 2 and 3 on school environmental education policy, and teaching and learning strategies, respectively. Introducing action research in a separate workshop, moreover in one conducted late in the intervention period, implies the view that reflection is separate from action, whereas in fact they are integrated. Action research, reminiscent of critical science, is a dialectical and cyclical process leading to the generation of professional knowledge

through planning, acting, observing and reflecting (Carr & Kemmis, 1986; McKernan, 2008).

### **7.8 Possible influences of LEESP educational discourses**

Although the focus of this chapter is not to examine the effects of policy *per se*, some data on the possible influence of the LEESP educational discourses at the level of curriculum development in Lesotho would provide useful insights for exploring classroom practice in Chapter 11. While it would be hard to determine whether or not the LEESP EE discourses have had an influence on curriculum developers and current curriculum work, it appears that the project introduced new terms that still feature in curriculum thinking in Lesotho. A respondent who was a member of the team that developed the 2009 *Strategic Plan for Education for Sustainable Development in Lesotho* and is also a teacher educator gave a list of terms that in her opinion were introduced by LEESP. These are action competence, reflexivity, constructivism, lifelong learning and comprehensive assessment. She said that these concepts continue to influence her current curriculum work:

*My involvement in LEESP has actually shaped my own ways of doing things, much as I came with some EE from training (for masters" degree). But as for the experience of working with these concepts I gained a lot from LEESP project, and it actually shaped me to what I am now. The way I teach my students, even today is still based on some the results of being in LEESP project. (MRT 2)*

A similar feeling was expressed by another respondent at NCDC. She felt that the LEESP capacity building workshops held for professional staff at NCDC were useful for curriculum development processes in Lesotho.

The former director of NCDC also reported that LEESP ideas had influenced the development of the new *Curriculum and Assessment Policy*. He explained that:

*...as NCDC we had to sit down and consider the contributions of the project (LEESP). We held a workshop of all stakeholders in which they had to present what they can contribute to the new curriculum policy. After that workshop decision was made to identify areas where environment as an aspect could fit. So in this second phase where we are now, EE is not seen in separate subjects, you can only see it in learning areas (NCDC staff 2).*

It could be inferred from this extract that the adoption of learning areas in the new *Curriculum and Assessment Policy, 2009* was the NCDC's attempt to implement the LEESP's idea of integration, in terms of which the boundaries between subjects are blurred to enable cross-curricular approach. In that document action competence is nominated as one of the pedagogical goals for secondary education in Lesotho (see Ministry of Education and Training 2009, p. 39).

Other local initiatives that seem to be building on LEESP discourses include the DELPHE project and the UNESCO Eco-schools movement which was formed in 2009. One must concede, however, that there might well be other local, regional and international influences on the current EE discourses in Lesotho.

## **7.9 Conclusion**

From the analysis of the data presented in this chapter, it has become clear that curriculum development and dissemination processes are indeed political in nature (see Chapter 4.4). The chapter demonstrates that while there is evidence of some consultation in the curriculum processes described, the participation of key stakeholders was minimal at critical points in the development of the *Reference Note for Environmental Education in Lesotho* and syllabus attachments. It has also emerged from the discussion that there were coordination problems resulting from the high turn-over of staff in the key positions in the NCDC and MOET. This denied the project the opportunity of benefitting from the institutional memory of senior officers in the MOET. The problem of coordination was exacerbated by the absence of comprehensive policy guidelines concerning the roles of key stakeholder institutions in curriculum reform processes. These problems might have detracted from the successful implementation of environmental education in the model schools.

The chapter has also shown that the process of the conceptualisation of environmental education was characterised by contestation, tensions and contradictions. The contested areas include the institutional coordination of LEESP, with one major stakeholder showing little commitment and support for the project on the grounds that it was not their first priority. In accordance with the findings reported in this chapter, I have contended that the approach used by LEESP to disseminate environmental

education to the model schools was generally top-down, with elements of technical rationality inimical to the project's expressed goals of emancipation. This top-down approach could have been detrimental to the successful implementation of EE at classroom level.

Although there were power issues and other challenges associated with the conceptualisation and dissemination of LEESP, the findings reported in this chapter indicate that LEESP left its mark on the educational landscape in Lesotho. Some of those who participated in the project maintain that the ideas that informed it are currently influencing their work as educationists. Furthermore, the new *Curriculum and Assessment Policy 2009* was reported to have adopted the notion of action competence as one of the goals guiding secondary education in Lesotho.

Since teachers interpret a new curriculum policy in the light of other existing texts (Bowe et al., 1992; Ball, 1994; Olssen et al., 2004), in the next two chapters I provide an analysis of geography curriculum materials to explore the level of congruence between these materials and environmental education as conceptualised under LEESP.

## **CHAPTER 8**

### **ANALYSIS OF THE GEOGRAPHY CURRICULUM DOCUMENT**

#### **8.1 Introduction**

The previous chapter provided analysis of the social process through which environmental education was conceptualised in Lesotho. In this chapter I analyse the junior secondary school geography curriculum document, along with the syllabus attachments made to support the integration of environmental education into the curriculum, with the purpose of exploring the nature of the interface between environmental education and school geography in Lesotho. As is the case in many other countries around the world, in Lesotho the subject curriculum provides guidelines for teachers and textbook writers. As noted in Chapter 2 (see Section 2.4), the curriculum is developed through a centralised process controlled by the Ministry of Education and Training (MOET), through its department of National Curriculum Development Centre (NCDC). There are subject panels consisting of teachers and other stakeholders, including teacher educators. These panels support the NCDC in the development of curriculum for various school subjects. After a new curriculum has been developed it is put on trial in selected schools and later implemented in all schools through a top-down approach.

The geography curriculum analysed in this chapter was developed as part of a comprehensive curriculum reform process which started in 1995. In terms of this reform process, environmental education was one of the emerging issues to be integrated in all subjects curricular. The geography curriculum was put on trial in 1999 and implemented in 2004. This trial period coincided with the conceptualisation of environmental education, under the Lesotho Environmental Education Support Project (LEESP).

As mentioned in chapters 1 and 7 (sections 1.3.2 and 7.5 respectively), LEESP made minor attachments to all the new syllabuses, for all subjects. It should be noted that LEESP was implemented at a time when the process of developing new syllabuses was well underway. So it was thought it would be a waste of effort to revise the whole

curriculum, which already had some elements of environmental education (LEESP, 2000). For geography, syllabus attachments were made only for the Form A level. However, for the purpose of this study, in this chapter I analyse the geography curriculum for three levels of learning at junior secondary schools, Forms A, B and C. The analysis focuses on:

- The view of knowledge and the intended pedagogy recommended in the curriculum, and how these relate to environmental education as conceptualised in the LEESP policy guidelines analysed in Chapter 6.
- Explicit and implicit skills, values and attitude promoted by the curriculum.

In order to achieve the goals of this chapter, I employ a qualitative approach to identify areas of congruence or incongruence between school geography and environmental education policy guidelines as presented in Chapter 6. I operated at two levels, inductive descriptive analysis and deductive analysis. At the inductive level of analysis, I describe the view of knowledge and pedagogy promoted in the curriculum, and analyse how it relates to the view of knowledge and pedagogy underpinning environmental education, as conceptualised in LEESP. For this analysis I draw insights from Habermas's theory of knowledge interests (see Chapter 4, section 4.4), and the general theory of environmental education. At the second level of analysis, I work within the framework of the concepts of classification and framing as theorised by Bernstein (1996, 2000), to analyse the degree of knowledge integration and the instructional theory recommended in the curriculum.

## **8.2 Descriptive analysis**

As is the case for all subjects in Lesotho, the geography curriculum<sup>3</sup> for the three levels of junior secondary school is organized according to the spiral approach, treating the same topics at different levels of complexity as the learners proceed through the three levels of junior secondary education. The content of geography is organized into eight themes covered in the three levels of Forms A, B and C. Other than the content for specific levels of learning, at the macro level the curriculum

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<sup>3</sup> I use the term curriculum to refer to general statements about the teaching of geography in all the three levels of secondary education, whereas the content and objectives for a specific level of learning comprise the syllabus for that level.

provides general information on geography, approaches to the study of geography, general objectives, assessment and examination.

### 8.2.1 General information on geography

In this section the definition, curriculum themes and mission statement of geography are examined. The syllabus defines geography as ~~a~~ subject that studies the earth as a home of man. Its concern is the interaction of man and his environment...” (NCDC, 2004, p.1). This definition stresses the importance of human-environment interaction and the effects of this interaction, assuming a broad view of the environment as consisting of natural and human activities. The syllabus explicitly states that ~~man~~‘s environment includes the natural and human activities” (ibid.), suggesting that content should be drawn from both natural sciences and human sciences. The syllabus then lists eight themes drawn from physical, human, and economic geography, and statistical methods. However, out of the eight themes listed, five are drawn from physical geography, thus reflecting a bias towards the earth science tradition, which has been one of the strong areas (the other one being the regional tradition) in secondary school geography in Lesotho since independence.

At the end of the list of curriculum themes, there is a statement expressing the subject’s commitment to addressing, among others, environmental issues: ~~I~~ntegrated in these are Environmental issues, population issues and Population and Family Life Education...”. (NCDC, 2004, p.1). The subject’s commitment to environmental education is further reflected in the mission statement, which declares as follows:

Geography aims at increasing students [sic] knowledge of and understanding of the earth as the home of man. This gives students knowledge of the interaction of man with his environment. It develops positive attitude towards caring for one’s environment. It gives students basic geographic skills and techniques that will enable them to solve environmental problems.... (NCDC, 2004, p.1)

In this quotation the emphasis is on the earth as a planet to be conserved for the continued existence of humankind. This might suggest that conservation values are embedded in the curriculum. The earth is viewed as something closely connected to

the human through its description as man's home. However, in this statement there is no mention of the other inhabitants of the earth, suggesting that the earth is valued only to the extent that it can serve to satisfy human needs.

### **8.2.2 Teaching approaches recommended**

The curriculum document expresses a commitment to learner-centred approaches wherein the teacher is expected to assume the role of a facilitator. This commitment is evident in the following statement: "It is believed that the teaching/learning takes place effectively where the learner fully participates in what he/she is learning" (NCDC, 2004, p.2). Though the curriculum document does not define participation, it recommends general teaching approaches such as observation, the use of visual materials in the classroom to represent distant environments, group work and debates, all of which call for active participation on the part of the learner. These approaches also provide opportunities for the integration of knowledge from other subjects and common knowledge, which are also envisaged in the LEESP programme. For example, the curriculum recommends that guest speakers be invited to give a talk in their area of expertise. The teaching approaches recommended in the curriculum also seek to foster the development of essential skills required for the effective learning of geography. Such skills include the observation and interpretation of visual material.

### **8.2.3 General objectives**

The curriculum is organised into general and specific objectives, with the latter stated in operational terms in order to guide the implementation and evaluation of the curriculum. Out of the five general objectives for teaching geography, two objectives express the subject's commitment to environmental education in explicit terms. Objectives 1 and 2 read thus: At the end of the course students should:

- Have acquired knowledge about local, regional and global environment
- Be aware of and appreciate developmental trends and their effect on the environment (NCDC, 2004, p. 3).

The first objective focuses on regional geography, with an emphasis on the geography of Lesotho, selected countries in Africa and other parts of the world. This is evident in

the following specific objective: “demonstrate knowledge of local environment and the general geography of Lesotho, selected countries in different regions, in Africa and other parts of the world” (NCDC, 2004, p.3).

Although the curriculum elaborates on what learners should know with regard to the environment, the emphasis is on environmental knowledge rather than environmental action. The curriculum-specific objectives that follow illustrate this point:

- demonstrate knowledge of the relationship between bio-physical processes and human activities
- demonstrate knowledge of the effects of human activities on the environment (NCDC, 2004, p. 3).

Looking at these objectives, it seems that the curriculum focuses more on content than competences. The same observation is made about the end of level objectives which, as shall be seen in the next section, focus primarily on cognitive abilities described in behavioural terms. This observation is not consistent with the LEESP environmental education programme in Lesotho, which emphasises the development of the ‘action competence’ necessary for environmental care and protection.

#### **8.2.4 Content of the curriculum**

The content is organised into discrete themes representing three areas of geography, namely, physical geography, human geography and aspects of map reading. Under each theme the subject matter is arranged in a logical sequence, thus giving the teacher and the learner little control over sequential rules. For instance, when dealing with content on “geomorphology”, the Form C syllabus outlines the content in terms of the specific objectives, as shown in Table 8.1.

**Table 8.1: Extract from Form syllabus**

End of level objective	Content
Describe drainage patterns	Drainage patterns: trellis, dendritic, radial and parallel
Describe the work of rivers	Erosion: attrition, corrosion, hydraulic action and solution
Describe river processes	Transportation: solution/corrosion, suspension, saltation and traction.
Describe characteristics of stages of a river and their resultant landforms	Deposition
Explain the formation of river capture	River profile: Characteristics and landforms of the upper course, middle course and lower course.
	Value of the landforms to man
	River capture

NCDC (2004, P.23)

Listing specific objectives as shown in the syllabus extract above may restrict the creativity of teachers in planning learning activities. It may also be interpreted as reflecting an objective view of knowledge, which in turn threatens ‘academic freedom’ (McKernan, 2008) in geography teaching. As noted in Chapter 4, critical curriculum theorists argue that for a curriculum policy to serve emancipatory interests, knowledge should be socially constructed and challengeable (Cornbleth, 1990; McLaren, 2007).

The objective view of knowledge evident in the geography curriculum contradicts its stated commitment to promoting the active participation of learners, as described earlier in Section 8.2.2. It is also inconsistent with the learner-centred pedagogy that is the overall goal of environmental education, as stated in the *Reference Note*.

The curriculum does, however, reflect a slight shift from the regional tradition to a more issues-based approach, with an emphasis on the geography of Lesotho, thus encouraging a deeper understanding of environmental issues in Lesotho rather than the memorisation of facts. The environmental issues that are covered include soil erosion, natural disasters, pollution, and energy, which are part of the content of environmental education as outlined in the *Reference Note* (see Section 6.5). This content seems to me to be addressing the two broad environmental issues of pollution

and land degradation, which were identified in the *National Environmental Policy for Lesotho* (1997) as among the most serious environmental issues in Lesotho.

For a deeper understanding of the content of the geography curriculum, in the following two sections I analyse the curriculum document in terms of values and skills.

#### **8.2.4.1 Values**

Although certain concepts of environmental education are visible in the geography curriculum, nowhere in a document of thirty-six pages is there mention of sustainable development (in whatever rubric), which is a dominant discourse within environmental education policy in Lesotho and internationally (see Chapters 3 and 6). The concept of sustainable development has attracted the interest of the geographical education community, on an international level, since the Rio Summit (Tilbury, 1997). The Lucerne Declaration on Geographical Education for Sustainable Development, building on the International Charter of Geographical Education (1992), emphasises the contribution of geography to education for sustainable development (IGU, 2007). Given that sustainable development is not explicitly mentioned in the geography curriculum, re-orienting geography towards sustainable development would depend on the ability of individual teachers and textbook writers to recognise the sustainability issues covered in the curriculum and seize the opportunity to promote sustainable development values.

Analysis reveals that, through its content, the curriculum expresses some environmental conservation and preservation values, as conceived by Fox (1990). The environmental conservation and preservation values are evident in the following extract from the Form A syllabus:

- Let students find out more about the importance of ozone layer (NCDC 2004, p.6).
- Carry out soil conservation in the school vicinity (ibid., p.10)
- Encourage students to help preserve the flora and fauna and indicate places where these are found (p.12).

The first two statements express *conservation values* while the third statement articulates *environmental preservation values*. According to Fox (1990), emphasising these values characterises caring for the environment as an instrumental goal. This means that the environment is only valued to the extent that it serves human interests.

#### 8.2.4.2 Skills

The geography education literature identifies observation, problem-solving, critical thinking and data representation as important skills to be promoted in geography teaching (Lambert & Bladerstone, 2000). These are the ‘core intellectual skills’ envisaged in the LEESP *Reference Note*. Although the curriculum does not explicitly state which skills should be emphasised, the following statements, taken from the syllabuses for Forms A and B respectively, promote the development of problem-solving skills leading to action competence: –Organise school and community awareness campaigns on clean water supply” (NCDC, 2004, p. 13); –Students should develop and implement an energy conservation plan for their schools” (NCDC, 2004, p. 21). These statements create opportunities for *indirect* and *direct* environmental action (Jensen and Schnack, 2006), respectively. They also create a context for the development of critical thinking skills necessary for understanding the root causes of environmental problems (Tilbury, 1997; Jensen, 2000). The intention to promote critical thinking skills is also implicit in the following statements:

- Indicate how HIV and AIDS will eventually affect population and population distribution in Lesotho (NCDC, 2004, p. 18)
- Form HIV and AIDS awareness Youth Clubs to teach people about Aids (ibid., p.11).

As would be expected, the curriculum also creates contexts for the development of observation skills. The following statements from the Form A syllabus encourage the direct observation in the field of both physical and man-made environments:

[Let] students observe vegetation in their environment (NCDC, 2004, p. 10)

[Learners] observe what is done in Agriculture concerning the topic (NCDC, 2004, p. 24).

While the analysis in this section shows that there are many curriculum statements that open up opportunities for the exchange of knowledge at the interface between

geography and environmental education, it is important to find out whether the view of environment in the curriculum is congruent with the LEESP's conception of environment.

### **8.2.5 The view of environment**

The LEESP environmental education programme, in line with regional and international trends, adopts a broad view of the environment, incorporating the four dimensions of the biophysical, the social, the economic and the political (see Section 6.5). In particular, LEESP refers to a model of the environment developed by O'Donoghue (1995), which shows that the biophysical dimension provides a sustaining base for the other three dimensions (see Figure 3.1). I use this model to analyse relevant curriculum learning outcomes (LOCs), in terms of the four dimensions of environment. I am of course aware of the limitations of compartmentalising environmental issues as though they were autonomous entities. For the purpose of this analysis, a statement that relates to two or more dimensions is classified under a holistic view of environment.

**Table 8.2: The view of environment as expressed in selected learning outcomes**

View of environment	Selected syllabus outcomes
Biophysical	<p><i>Form A syllabus</i></p> <p>Discuss the effects of weathering on the environment            Identify agents of soil erosion            Identify types of water erosion            Discuss causes of soil erosion            Describe problems caused by soil erosion            Describe soil conservation methods            Carry out soil conservation methods in the school vicinity            Discuss the relationship between vegetation and climate            Illustrate hydrological cycle            Suggest water conservation methods</p> <p><i>Form B syllabus</i></p> <p>Describe processes of wind erosion and transportation            Explain formation of landforms resulting from wind erosion            Classify sources of energy as renewable and non-renewable</p> <p><i>Form C syllabus</i></p> <p>Describe the relationship between climate and vegetation            Describe the characteristics of the main natural climatic regions and vegetation belts (LOC 9).</p>
Social	None
Economic	<p>Form A syllabus</p> <p>Explain uses of rocks (LOC 12)            Explain uses of soil (LOC 22)            Discuss uses of vegetation (LOC 31)</p> <p>Form B syllabus</p> <p>Discuss economic value of volcanism in Lesotho (LOC 7)            Discuss the impact of modes of transport on the environment (LOC 33)            Identify sources of energy (LOC 39)</p> <p><i>Form C syllabus</i></p> <p>Describe conditions favourable for growing of maize...            Discuss problems of crop farming in Lesotho and their solution            Describe favourable conditions for livestock farming.</p>
Political	None
Holistic	<p><i>Form A syllabus</i></p> <p>Discuss problems caused nature and humans on vegetation            Suggest soil conservation measures (LOC 32)            Discuss problems related to rapid population growth (LOC 39)</p> <p><i>Form B syllabus</i></p> <p>Discuss the effects of earthquakes and volcanism            Identify disasters related weather conditions and discuss ways of dealing with them            Discuss the impact of the Lesotho Highlands Water Project on population and environment (LOC 37)</p> <p><i>Form C syllabus</i></p> <p>Discuss the influence of climate on human activities            Describe the impact of mining on environment and economy (LOC 25)            Discuss importance of forests (LOC 16)            Describe advantages and disadvantages of H.E.P and solar energy (LOC 30).</p>

Table 8.2 shows that the view of environment in the curriculum differs according to the class levels. The Form A syllabus is more concerned with explanation of the physical processes, whereas the Forms B and C syllabuses have more statements

encouraging a holistic view of the environment. This is to be expected, given that the content in the curriculum document is fragmented, with the form A syllabus focusing more on physical geography.

The table, surprisingly, also shows that the social and political dimensions of the environment are neglected across all three levels. This may suggest that the junior secondary geography curriculum in Lesotho has not altogether adopted the sort of cultural approach that is essential in helping learners “to become active citizens who can understand and act critically and with responsibility in their local and global environment” (Tani, 2004, p. 7). The neglect of these two dimensions makes the successful implementation of environmental education within the geography curriculum in Lesotho less likely.

The learning outcomes presented in Table 8.2 were extracted from a list of 138 end of level objectives set for forms A, B and C, on the basis of their relevance to environmental education. They constitute 25% of the total learning outcomes in the curriculum. Although this percentage is low, the curriculum can nevertheless be said to provide opportunities for the integration of environmental education in geography teaching. It would be interesting to find out whether teachers at the model schools, after receiving training in environmental education, take advantage of these learning outcomes to promote environmental knowledge, values and attitudes in their pedagogic practice. The data on this will be presented in chapters 10 and 11.

### **8.2.6 The theory of instruction**

The theory of instruction legitimised by the curriculum provides opportunities for enquiry teaching and learning approaches which are considered effective for promoting action competences within the context of the environmental education model of education *for* the environment (Fien, 1993). This is illustrated by suggestions such as:

- Undertake a project work to grow and protect endangered species of vegetation in the school garden (NCDC 2004, p.10).
- Organise school and community awareness campaign on clean water supply (ibid., p.13 ).

These statements provide opportunities for the examination of real environmental problems by the learners themselves through direct observation, project work and debates.

Moreover, the curriculum, through its methodological suggestions, offers scope for the development of a range of skills including intellectual skills, information finding skills and problem-solving skills. For instance, in Form A, the syllabus recommends as follows: “Let students find more about the importance of ozone layer” (NCDC, 2004, p.6). In line with this statement, teachers can encourage learners to use the internet, where available, and listen to radio news in order to get more information about the ozone layer. Although the syllabus does not give guidelines on how the information could be shared in class, teachers could ask learners to report their findings. Sharing information in class can help them to develop effective communication skills.

However, there are no clear curriculum guidelines on the use of group activities, which could serve to promote cooperative learning, as envisaged in LEESP (see Section 6.7). The environmental education literature also recognises that solutions to environmental problems require a concerted effort and collective action, since environmental problems are structurally anchored in society (Breiting and Mogensen, 1999).

### **8.2.7 Assessment**

The geography curriculum emphasises the assessment of basic geography skills such as the ability to interpret and analyse geographic data, drawing skills, the ability to analyse and to show relationships between natural and human activities. There is also an emphasis on knowledge with understanding. This represents a shift from the traditional mode of assessment, which focused mainly on factual geographical knowledge. However, there is no clear indication as to how these skills should be assessed during the course of the programme. The curriculum document simply indicates the structure of the end of year examination, which is to be organized into two papers, with Paper 1 assessing the basic skills and techniques of map reading and interpretation, and basic principles of physical geography; and Paper 2 focusing on

knowledge and skills relating to human and economic geography. The absence of clear guidelines on continuous assessment might suggest that the curriculum supports an examination-oriented assessment, which has characterised the education system in Lesotho since the colonial period (see Chapter 2).

The LEESP programme calls for comprehensive assessment, including a focus on the affective domain. Regrettably, the curriculum makes no reference to the assessment of the affective aspects of learning such as environmental attitudes and values, which are recognised in the environmental education literature as important in promoting positive environmental action (McKeown, 2006). LEESP further emphasises action-knowledge, considered as the highest form of knowledge in terms of which a learner is able to act, making use of his or her own experience (LEESP, 2003). The curriculum does not mention the need to assess individual or group action in solving environmental problems, despite its inclusion of some methodological suggestions that encourage learners to perform actions through projects.

The descriptive analysis of the geography curriculum document provided in this section illustrates that, although there are some discrepancies, the curriculum generally contains content and methodological suggestions that relate to environmental education. However, such a descriptive analysis does not illuminate the issues of power and control relations between discourses (EE and geography) and within intended classroom practice. To overcome this limitation, in the next section I employ Bernstein's theoretical concepts of classification and framing, as described in Chapter 5 (see Section 5.6.3).

### **8.3 Power and control relations in the geography curriculum**

Using the concepts of classification and framing, I developed criteria for the analysis of the syllabuses for Forms A, B and C so as to examine knowledge integration and the structure of the intended pedagogy. To enable this analysis I initially identified statements or sentences for each syllabus, in the curriculum document, that could be analysed in terms of the theoretical concepts of classification and framing (as presented in Table 8.2). As mentioned in Chapter 5 (see section 5.6.1.2), I performed a content analysis of relevant curriculum statements, focusing on the rationale for the

study of geography: objectives, themes and methodological suggestions. The analysis was deductive in that it was based on the pre-defined analytical categories of classification and framing. All the statements analysed were coded according to the classification and framing scales as described in Chapter 5 (see Section 5.6.3 for the analytical framework).

I then coded all the selected statements using the four-point scale proposed by Bernstein (1996) to indicate the strength of classification and framing reflected in each syllabus's statements. Where there was a *very strong* classification or framing, a statement was given the highest value (C++ or F++), which indicates an absence of relations between categories or agents. A *very weak* classification or framing was denoted by C-- or F-- respectively, which indicates the presence of close relations. Where there were little or implicit relations with respect to classification and framing, I attached intermediate values (such as C- and F-). The coding was based on both objective and subjective decisions: that is, on the basis of my interpretations, I made qualitative decisions as to how the statements could be coded. The analysis of the *Lesotho Junior Certificate Geography Syllabus* in this section focuses on knowledge integration and the theory of instruction.

### **8.3.1 Knowledge integration**

The analysis explored relations between geography and environmental education (interdisciplinary relations), relations among knowledge fields within geography (intra-disciplinary relations), and the integration of everyday knowledge (inter-discursive relations).

#### **8.3.1.1 Relations between geography and environmental education**

The question for this analysis was: To what extent are environment and environment-related concepts/issues integrated into the curriculum? I focused on general statements, which include a definition of geography, mission statement, general curriculum objectives for teaching geography, and learning outcomes. For this analysis the criteria shown in Table 8.3 were developed from Bernstein's principle of classification.

**Table 8.3: Criteria for the analysis of EE integration into the geography curriculum**

<b>Classification Coding scale</b>	<b>Description</b>	<b>Pointers</b>
C++	Very low integration	The statement does not contain concepts related to EE, yet there is a high potential for such integration
C+	Low integration	The statement does not explicitly refer to environment related concepts
C-	High integration	The statement refers to EE related concepts
C- -	Very high integration	The statement contains the word environment or makes a clear reference to EE related content

Using these criteria, I was able to identify curriculum statements which could be analysed accordingly. Table 8.4 shows the statements that were analysed in terms of classification principles, together with their coding.

**Table 8.4: Environmental education knowledge integration within geography curriculum**

General statements	Its [Geography's] main concern is the interaction of man with his environment and its effects.	C - -
	It [geography] develops a positive attitude towards caring for one's environment.	C - -
	It gives students basic geographic skills and techniques that will enable them to solve environmental problems.	C - -
	It also enables learners to improve their social lives and the environment in which they live.	C - -
General Curriculum Objectives	Have acquired knowledge about local, regional and global environment.	C - -
	Be aware of and appreciate developmental trends and their effect on the environment.	C - -
	Have acquired knowledge of spatial distribution of both physical and human aspects.	C -
	Have acquired knowledge of spatial distribution of both physical and human aspect on the quality of life locally, regionally and globally.	C -
Form A syllabus learning outcomes	Discuss effects of weathering on the environment	C - -
	Discuss causes of soil erosion	C - -
	Discuss problems caused by soil erosion	C - -
	Describe soil conservation methods	C - -
	Carry out soil conservation in the school vicinity	C - -
	Identify vegetation types	C -
	Explain distribution of vegetation	C -
	Discuss uses of vegetation	C -
	Discuss problems caused by nature and humans on vegetation	C - -
	Suggest vegetation conservation measures	C - -
	Discuss the relationship between vegetation and climate	C -
	Illustrate hydrological cycle	C - -
	Discuss uses of water and water-related problems	C -
	Suggest water conservation methods	C - -
Discuss advantages and disadvantages of tertiary industries	C +	
Form B syllabus learning outcomes	1. discuss the impact of modes of transport on the environment	C - -
	2. discuss the impact of LHWP on population and environment	C - -
	3. suggest solutions to problems caused by LHWP on population and environment	C - -
	4. describe energy conservation applications	C - -
	5. carry out energy conservation measures	C - -
	6. describe relationship between climate and vegetation	C - -
Form C syllabus learning outcomes	Describe the relationship between climate and vegetation	C -
	Discuss the influence of climate on human activities	C - -
	Discuss the importance of forests	C +
	Explain the impact of mining on environment	C - -
	Describe advantages and disadvantages of H.E.P. and solar energy	C -

Table 8.4 illustrates that geography, as represented in the three syllabuses, is generally loosely bounded to allow for the incorporation of environmental education. Interestingly, most statements showing a very high level of inclusion (C- -) of environmental concepts are found in the Form A syllabus, which leans towards physical geography. It would seem that the integration of environment-related content is obvious when one is dealing with physical geography. This finding is consistent with the findings in Table 8.2, which shows that the Form A syllabus emphasises the bio-physical aspect of the environment through its content.

### **8.3.1.2 Relations within knowledge fields in geography**

Geography is by nature an integrated subject, drawing content from natural and social sciences (Tilbury, 1997; Huckle, 2002). However, as I indicated in Section 8.2.4 of this chapter, the content of the syllabuses for the three levels of junior secondary education is organised according to a traditional fragmented approach separating topics relating to physical geography from those relating to human geography. The curriculum themes are organised such that all the topics in physical geography are treated before the topics in human/economic geography. For example, the Form B syllabus deals with wind erosion, which is followed by farming systems (p.18), but without establishing a clear connection between these two themes. Wind erosion is an aspect of physical geography that has a bearing on human activities, particularly in desert areas. Instead of including a learning outcome on how wind erosion can positively or negatively impact on agriculture, the syllabus simply focuses on the physical process of wind erosion, and the landforms resulting from it.

The same observation is made with regard to the Form C syllabus, which treats content on climate regions in a fragmented traditional approach. The following quotation from the methodological suggestions in the syllabus illustrates this: “[Describe] characteristics in terms of temperature, rainfall, vegetation, position/location, human activities” (NCDC, 2004, p. 24). Within Bernstein’s analytic framework of classification, this statement can be coded C++, which represents a very strong classification between geography knowledge fields. While this structured approach may be appropriate for examination purposes, it is inadequate in terms of enabling the learners to develop a holistic view of environmental issues. It is likely to

promote a narrow “environmental determinism” (Marsden, 1997), wherein emphasis is placed on the influence of physical environmental factors on human activities, with little concern for how humans impact negatively on the environment (Huckle, 2002; Tabulawa, 2002). This approach to organising the content has historically, been a characteristic feature of school geography both internationally and in Lesotho (see Chapter 3).

### **8.3.1.3 Integration of everyday knowledge/inter-discursive relations**

Environmental education, as conceptualised in LEESP via the notion of whole-school development, requires an integrated approach linking school knowledge with the everyday knowledge of the learners (see Chapter 6, section 6.7). However, geography as represented in the curriculum generally retains its disciplinary status by emphasising specialised geography knowledge. Content analysis of the syllabus shows that across the three levels (Forms A, B and C) there are few statements that explicitly encourage teachers to relate geography to the everyday knowledge of the learners. For example, out of the fifty-eight (58) learning outcomes set for the Form A level, only three (3) provide a context for inter-discursive relations: *Explain uses of rocks; Explain uses of soil; Discuss uses of vegetation*. Other similar statements are found in the Form B syllabus: *Invite guest speakers from LNDC, Trade and Industry and Central Planning (when teaching about secondary industries); Use current affairs to further clarify disasters*. Given this low representation of statements creating a context for the integration of everyday knowledge, the syllabus can be coded (C++) in terms of inter-discursive relations.

Such a strong classification is unexpected, given the number of opportunities in the curriculum for the integration of everyday knowledge. For instance, with regard to topics dealing with soil conservation, vegetation, agriculture and population, the curriculum does not explicitly mention the need to draw on local methods of conserving soil, indigenous plants, traditional farming methods as employed in the local communities of the learners, and cultural practices and myths that contribute to rapid population growth and HIV/AIDS. An explanation for this strong classification between geography and everyday knowledge could be that, as a legacy of colonial education, geography – like other school subjects in Lesotho – has a strong academic

tradition that marginalises local common knowledge. In the absence of clear curriculum guidelines on the integration of everyday knowledge, the use of learners' common knowledge at the level of classroom practice is left to the creativity of textbook authors and individual teachers.

#### 8.3.1.4 Relations between geography and other subjects

There are very few statements encouraging an integrated approach using knowledge from other subjects. In the section on methodological suggestions in the *Form A syllabus*, there are only two items that make explicit reference to relevant knowledge from other subjects: *invite guest speakers from the Ministry of Agriculture or the Agriculture teacher [to talk about soil erosion]; Consult science teacher about water experiments*, (*Form A syllabus*, p.9 and p.13 respectively). There are no such statements in the syllabuses for Forms B and C. Given this observation, the curriculum can be coded C++ with respect to inter-disciplinary relations. The LEESP environmental education programme, on the other hand, advocates a thematic approach, encouraging teachers to consult across different subjects to make the teaching of environmental issues meaningful (LEESP, 2003).

#### 8.3.2 Theory of instruction

The following indicators developed by Morias et al. (1999) guided an analysis of the instructional practice recommended by the syllabus:

- F++ The sentence contains statements that give a clear emphasis to a directive role of the teacher in the teaching –learning process or the sentence refers to cognitive and/or socio-affective competences which suggest a passive intervention of the learner. In this case the syllabus values a theory of instruction exclusively centred on the transmitter.
- F+ The sentence contains statements which emphasise the orientating role of the teacher in the teaching-learning process or the sentence refers to cognitive and/or socio-affective competences which suggest some participation of the learner. In this case, the sentence passes on the idea that the syllabus values a theory of instruction which although centred on the transmitter, considers also the learner's intervention.
- F-- The sentence contains statements which emphasise a higher degree of intervention of student in the teaching and learning process or the sentence refers to cognitive activities and/or socio-affective competences which suggest a higher degree of learner's **participation**. In this case the sentence passes the idea that the syllabus values a theory of instruction mainly centred on the acquirer.

- F- The sentence contains statements which emphasise a higher degree of intervention of the student in the teaching-learning process or the sentence refers to cognitive/or socio-affective competences which suggest a higher degree of student's **autonomy**. In this case, the sentence passes the idea that the syllabus values a theory of instruction mainly centred to the acquirer.

Source: Morias et al. (1999, p.42)

Table 8.5 shows the theory of instruction recommended for the three levels of junior secondary education. For this analysis I concentrated only on statements concerning instructional theory that are not ambiguous.

**Table 8.5: Analysis of the theory of instruction**

Framing scale	Sentence extracted from the syllabus
F++	<p><i>Form A syllabus</i></p> <ul style="list-style-type: none"> <li>• Define concept of latitude and longitude ...</li> <li>• Describe climate characteristics of Lesotho using temperature and rainfall. Use climate maps</li> <li>• Indicate examples in Lesotho</li> <li>• Invite guest speakers</li> <li>• Collect (population) data from class</li> <li>• Include nutritional density and arithmetic density</li> <li>• Mention the push and pull factors of migration</li> <li>• Include government's efforts to improve tertiary industries</li> <li>• Consult Science teacher about water experiments</li> </ul> <p><i>Form B Syllabus</i></p> <ul style="list-style-type: none"> <li>• The teacher should explain that rotation is only a contributing factor, it does not cause tides on its own</li> <li>• Specify types of folds, faults and volcanoes</li> <li>• Remember to include micro and macro climates</li> <li>• Name ocean currents, their types and show where they are found</li> <li>• Mention isotherms and isohyets</li> <li>• Relate biological weathering to both physical and chemical weathering and include chemicals produced by living and dead organisms</li> <li>• Relate weathering to rock types and climate conditions</li> <li>• Highlight soil conservation done in Form A</li> <li>• [Describe] characteristics in terms of inputs, outputs, land size and purpose</li> <li>• Indicate how HIV and AIDS will eventually affect population and population distribution in Lesotho</li> <li>• Invite guest speakers from LNDC, Trade and Industry and Central Planning</li> </ul> <p><i>Form C syllabus</i></p> <ul style="list-style-type: none"> <li>• Include the advantages of using zonal time over local time</li> <li>• [Describe] characteristics in terms of temperature, rainfall, vegetation, position and human activities</li> <li>• Use pictures to illustrate methods of mining</li> <li>• Show how transport facilitates trade</li> <li>• Use diagrams to illustrate different landforms</li> </ul>
F+	<p><i>Form A syllabus</i></p> <ul style="list-style-type: none"> <li>• Let students find more about the importance of the importance of ozone layer</li> <li>• Let students visualize how like would be like without rotation and revolution</li> <li>• Let students bring photographs and pictures of eroded areas</li> <li>• Encourage students to help preserve flora and fauna of Lesotho and indicate places where these are found</li> <li>• Analyse HIV and IDS statistics in Lesotho</li> </ul> <p><i>Form B syllabus</i></p> <ul style="list-style-type: none"> <li>• Use of an atlas is important is important in teaching latitudes and longitudes for location</li> <li>• Identify volcanic features in Lesotho</li> <li>• Learners be made aware of recent events of volcanism and earth quakes</li> <li>• Use current affairs to further clarify disasters</li> </ul> <p><i>Form C syllabus</i></p> <ul style="list-style-type: none"> <li>• Revise time calculation</li> <li>• Study Lesotho drainage patterns</li> <li>• Use an atlas to illustrate other drainage patters</li> <li>• Revise world distribution of temperature, pressure, winds and rainfall done in Form B</li> <li>• Revise local uses of forests</li> </ul>
F-	<p><i>Form A syllabus</i></p> <ul style="list-style-type: none"> <li>• [Students] role play solar system</li> <li>• [students] role play movements of the earth demonstrating day and night</li> <li>• Students draw and label [weather] recording instruments</li> </ul>

	<ul style="list-style-type: none"> <li>• Students visit weather station</li> <li>• [students] study soil profile in their environment</li> <li>• Students observe vegetation in their environment</li> <li>• Introduce a tree planting day</li> <li>• Study soil in their vicinity</li> <li>• discuss the importance of soils conservation</li> <li>• Discuss how misuse of vegetation affects ecosystem</li> <li>• Establish soil conservation day</li> </ul> <p><i>Form B syllabus</i></p> <ul style="list-style-type: none"> <li>• Use blank map of Lesotho to locate rivers and other geographical features</li> <li>• Convert one scale into another</li> <li>• Encourage map drawing using sketch map to locate places</li> </ul> <p><i>Form C syllabus</i></p> <ul style="list-style-type: none"> <li>• Discuss the importance all landforms</li> <li>• Observe what is done in agriculture concerning the topic</li> <li>• Visit woodlot/forestry division</li> <li>• Practise different methods of showing relief</li> </ul>
F- -	<p><i>Form A syllabus</i></p> <ul style="list-style-type: none"> <li>• [Students] collect and study samples of rocks that are found in the neighbourhood</li> <li>• [students] collect and study soil samples</li> <li>• Use one of the methods to prevent soil erosion in the school</li> <li>• Students describe weather conditions daily and put them on a wall chart</li> <li>• [students] undertake a project to grow and protect endangered species of vegetation in the school garden</li> <li>• Form HIV and AIDS awareness youth club</li> <li>• Debate advantages and disadvantages of service industry</li> <li>• Students should develop and implement energy conservation of their school</li> </ul> <p><i>Form B syllabus</i> Students develop and implement energy conservation plan for their school</p> <p><i>Form C syllabus</i> None</p>

Table 8.5 shows that the theory of instruction recommended in the curriculum could be described as a mixed pedagogy. Although the curriculum generally gives control to the teacher, there are many opportunities for learners' to participate and act autonomously. This is most notable in the case of the Form A syllabus, which exercises the least control over the learner, as illustrated by eleven (11) statements coded F- (weak framing) and eight (8) statements reflecting a very weak framing (F--), thus giving a total of nineteen (19) statements displaying weak framing. This number is high when compared to only nine (9) statements at this level showing very strong framing and five (5) showing strong framing. In this way, the Form A syllabus contrasts sharply with the syllabuses for the other two levels. The Form B syllabus is more centred on the teacher, as illustrated by 15 statements (11 = F++ and 4 = F+) showing strong framing, and only 4 statements (3 = F- and 1 = F--) showing weak framing. The same pattern is noted with the Form C syllabus, where 10 statements are strongly framed and only 4 are weakly framed, with no statement coded F-- (very weak framing).

Why is the Form A syllabus so different from the other two syllabuses? A number of reasons could be given. First, it could be that the syllabus writers assumed that more

learner-centred activities would be more appropriate for this level given the developmental stage of the learners. Secondly, the syllabus writers may have assumed that teachers would use learner-centred activities similar to those recommended for Forms A for the other two levels (Forms B and C), as they teach the same curriculum themes, following the spiral approach. As I indicated in section 8.2 of this chapter, it should be noted that the curriculum follows the spiral approach, treating the same theme at different levels of complexity as learners move through the three levels of junior secondary education. Thirdly, the Form A syllabus leans towards physical geography, which is generally considered, in Lesotho, to be abstract. Hence to reduce the level of abstraction, the syllabus writers may have felt that it was necessary to include more learner-centred activities. Of course, it is possible that the curriculum writers may not have made any conscious decisions with regard to the differences in the theory of instruction suggested for the three syllabuses.

The LEESP environmental education programme, in contrast to the Forms B and C syllabuses, espouses a learner-centred pedagogy giving learners control of instructional rules. The lack of clear curriculum guidelines for the use of learner-centred approaches in the two syllabuses (Forms B and C) may be detrimental to successful implementation of environmental education at the classroom level.

As mentioned in Chapter 1 (see section 1.3.2), LEESP aimed to strengthen the existing syllabuses in Lesotho through the introduction of syllabus attachments for all subjects. In the next section I compare selected statements from this syllabus with the attachments added by LEESP to provide guidelines for the integration of environmental education.

#### **8.4 Analysis of syllabus attachments for the geography curriculum**

As stated in Chapter 7 (see Section 7.5), the syllabus attachments were developed by NCDC subject specialists in conjunction with the LEESP external consultants. In this section I analyse the geography attachments, with a view to understanding whether and how they introduce change in the content of the subject and its intended

pedagogy. The key question addressed in this analysis is therefore: to what extent do the geography syllabus attachments represent a shift from the original syllabus in terms of content, as expressed in learning outcomes, and pedagogy? For this analysis I use Bernstein's concepts of classification and framing as used in sections 8.3.1 and 8.3.2. The analysis is limited to the Form A syllabus because syllabus attachments were made for this level only. What follows is a comparative analysis of the substantive syllabus and the attachments, focusing on knowledge integration and instructional theory.

#### 8.4.1 Changes in knowledge integration

Table 8.6 indicates some shifts in the existing curriculum as a result of the LEESP attachment.

**Table 8.6: Level of environmental education integration**

Environmental issue	Original syllabus statement (competences)	Classification	Syllabus attachments (Competences)	Coding
Biodiversity	Identify the types of vegetation	C-	Explain the impact that nature (rain, temperature, wind etc.) and human activities (cultivation of land, building roads and dams) have on the environment.  Assess the impact of nature and human activities on the environment, and make sound judgement on appropriate action to be taken to alleviate them.	C-
	Explain distribution of vegetation locally	C-		C - -
Fuel and energy	Discuss uses of vegetation	C+	Explain the impact that nature (rain, temperature, wind etc.) and human activities (using wood as fuel) have on the environment. Learners discuss the impact of human activities on the loss of biodiversity  Discuss conflicting interests arising when an area becomes a nature reserve  Assess the impact of nature and human activities on the environment, and make sound judgement on appropriate action to be taken to alleviate them.	C-
	Discuss problems caused by nature and humans on vegetation	C-		C - -
	Suggest vegetation conservation measures	C - -		C - -
Land degradation	Identify agents of soil erosion	C-	Apply knowledge of the local environment and general geography of Lesotho to assess the seriousness of land degradation in their area and in Lesotho at large  Conserve soil in their local environment	C+
	Identify types of soil erosion	C-		
	Discuss causes of soil erosion	C-		
	Discuss problems caused by soil erosion	C-		C - -
	Describe soil conservation methods	C - -		
Carry out soil conservation in the school vicinity	C - -			

While the statements from the original/substantive syllabus and the syllabus attachments generally exhibit weak classification, the level of environmental education integration is higher in the latter, as illustrated by more statements coded C--. Nevertheless, some statements in the syllabus attachments retain the notion of geographical disciplinary knowledge. The following two statements are typical examples of strong classification with respect to interdisciplinary relations:

- Explain the impact that nature (rain, temperature, wind etc.) and human activities (using wood as fuel) have on the environment.
- Apply knowledge of the local environment and general geography of Lesotho to assess the seriousness of land degradation in their area and in Lesotho at large (LEESP, 2003, p.158).

The attachments also introduce new environmental concepts such as *biodiversity* and *conflicting interests*. The concept of biodiversity is traditionally unique to biology. Hence its inclusion in the geography syllabus attachment creates the opportunity for an interdisciplinary approach in the teaching and learning of geography. The notion of conflicting interests is emphasised in the LEESP environmental education programme, as a strategy for promoting a deeper understanding of environmental problems and issues. The environmental education literature recognises that environmental problems need to be understood as community issues, with conflicting interests at the individual, social and structural level (Breiting and Mogensen, 1999).

It is interesting to note that neither the substantive syllabus nor the syllabus attachments signal an intention to integrate the everyday knowledge of learners. This could be explained in two ways: First, it could be that, unlike human geography which relates directly to people's lives, physical geography (for which the attachments were made) is not obviously linked to everyday knowledge. The lacuna would then reflect a limited understanding of school geography as an integrated subject. Second, it could (also) be a reflection of the limitations of the process through which the syllabus attachments were developed. It should be noted that this process did not benefit from the diverse views of members of the National Geography Panel (see Section 7.5).

#### **8.4.2 Shifts in instructional theory**

Table 8.7 compares selected original syllabus statements with syllabus attachments to highlight possible changes in the theory of instruction as introduced by the LEESP.

**Table 8.7: Instructional theory implicit in the learning experiences**

Environmental issue	Original syllabus statement	Coding	Syllabus attachments	Coding
Biodiversity	Students observe vegetation in their environment	F-	Learners discuss the impact of human activities on the loss of biodiversity	F- -
	Introduce tree planting day	F-	Learners locate nature conservation areas on the map of Lesotho. Discuss conflicting interests arising when an area becomes a nature reserve	F- -
	Undertake a project to grow and protect endangered species of vegetation in the school garden	F- -		
Fuel and energy	Discuss how misuse of vegetation affects ecosystem	F-	Learners relate land degradation in their locality to the exploitation of trees or shrubs as sources of fuel and energy Learners suggest plans for action to change inappropriate attitudes and habits towards wood consumption as a source of energy	F- F- -
Land degradation	Study soil in their vicinity Let students bring photographs and pictures of soil erosion and prevention	F- F+ F- -	Learners apply appropriate conservation measures for their area, based on their knowledge of the climate and other geographical characteristics of Lesotho	F- -
	Discuss the importance of soil conservation Use one of the methods to prevent soil erosion in the school Establish a soil conservation day in the school	F- F-	Learners carry out a well planned soil conservation project in the school vicinity	F- -

The table shows that although both the original syllabus and the syllabus attachments are generally weakly framed, the latter exhibits a preponderance of very weak framing, thus granting learners more explicit control over instructional rules. The syllabus attachments also represent a shift towards action competence. For example, the suggested activity on page 158 of the *Teachers' Handbook* stresses the importance of action (though indirect action): “Learners suggest plans of action to change inappropriate attitudes and habits towards wood consumption as a source of energy” (LEESP, 2003, p.158). This statement is different from the corresponding suggestion in the original syllabus, which reads as follows: “Discuss how misuse of vegetation affects ecosystem” (NCDC, 2004, p. 11). Moreover, an understanding of the complex nature of environmental issues is more visible in the attachments.

While the analytical framework developed from the concepts of classification and framing has enabled an understanding of the differences between the substantive syllabus and the LEESP syllabus attachments, it does not seem to contribute to an understanding of the differences in terms of the skills relating to action competence. Hence I drew on a model of action competence proposed by Jensen (2000) to determine the extent to which the geography curriculum objectives encourage the development of action-competence skills (critical thinking, problem solving and

decision making) in dealing with environmental issues. This model was described in detail in Chapter 3 (see Figure 3.3). Table 8.8 shows a comparative analysis of the substantive syllabus and the syllabus attachments in terms of action competence.

**Table 8.8: Analysis of syllabus statements according the model of action-competence**

Knowledge dimensions	Substantive syllabus	Syllabus attachments
Knowledge about the effects of an environmental impact	Discuss problems caused by nature and humans on vegetation  Discuss problems caused by soil erosion	Explain the impact of nature and humans on the environment  Apply knowledge of local environment and the general geography of Lesotho to assess the seriousness of land degradation in their area and in Lesotho at large.
Knowledge about the root causes of environmental problems	Nil	Nil
Knowledge to bring about change	Suggest vegetation conservation measures Carry out soil conservation methods	Conserve soil in their local environment
Knowledge that draws on ways in which people resolve issues in other societies, and use this information to create and implement alternatives and <i>visions</i> for the future in relation to his/her own life, work, family and society	Nil	Assess the impact of nature and humans on the environment, and make sound judgment on appropriate actions to be taken to alleviate identified problems

As shown in Table 8.8, there are no major differences between the two syllabuses in terms of types of environmental knowledge. In both cases there are two statements that promote awareness of environmental issues, awareness that, on its own, is of little value in terms of encouraging learners to take action for the environment (Jensen, 2000). There is, however, one statement in the attachments that covers the last dimension of knowledge, focusing on action rather than mere awareness. Depending on the interpretation of individual teachers, the statement can serve to encourage learners to explore alternatives and develop a vision for the future in relation to their own lives. As learners assess the impact of humans on the environment they are expected to explore possibilities for resolving environmental problems. In this

process, learners can think of what kinds of action would be appropriate, whether direct or indirect (Jensen, 2000).

## 8.5 Conclusion

The analysis of the Lesotho junior secondary geography curriculum document presented in this chapter generally shows that there are congruencies between geography and environmental education as conceptualised by LEESP. The analysis indicates that the curriculum, through its content and intended pedagogy, creates many opportunities for the integration of environmental education into secondary school geography. While there are indications of the possibility of knowledge exchange at the interface between environmental education and geography, there are also major differences that could be detrimental to the successful implementation of environmental education at the classroom level. For example, the descriptive analysis has shown that the geography curriculum is organised in a fragmented manner, thus reflecting an objectivist view of knowledge. The chapter has also revealed that the geography curriculum document evinces strong classification with respect to intra-disciplinary, inter-discursive and interdisciplinary relations. This contrasts with the integrated approach espoused by LEESP. An integrated approach would allow for the integration of knowledge fields within geography, which would enable a broader view of environmental issues. It would also create a context for teachers to draw on other subjects and the everyday knowledge of learners, thus making the subject more real and interesting to the learners. Within the theoretical framework of Bernstein this curriculum can be described as a *collected curriculum* as opposed to an *integrated curriculum* (see Section 5.6.3.1).

The descriptive analysis has also shown that while there are some curriculum statements that reflect a holistic view of the environment, the curriculum is biased towards the biophysical dimension of the environment, neglecting the social and political dimensions. This bias threatens to prejudice the successful implementation of environmental education at the classroom level.

With regard to pedagogy, the analysis has shown that, with the exception of the Form A syllabus, which is largely learner-centred, the curriculum, though allowing learners

some control and autonomy, is generally centred on the teacher. This contradicts both the stated claims of the curriculum itself, and the overarching pedagogy underpinning LEESP.

A comparative analysis of the substantive syllabus and syllabus attachments highlighted some shifts introduced by the latter. First, the syllabus attachments show a weaker classification with respect to inter-disciplinary relations, allowing teachers to recruit relevant concepts from other subject areas. Secondly, the attachments allow learners more explicit control. Finally, it has emerged that, although there are no major differences between the two in terms of the types of environmental knowledge, the attachments present more opportunities for promoting action-oriented learning. The question of how geography teachers in the model schools are interpreting and integrating these attachments into their classroom practice will be addressed in Chapter 11.

As I indicated in the introduction (Section 8.1) to this chapter, a curriculum document as an official pedagogic text provides guidelines for teachers and textbook writers. However, the implementation of the environmental education-related content and pedagogy in the geography curriculum would depend on how well they have been translated into the textbooks. In the next chapter, I analyse three textbooks that were produced to support the geography curriculum analysed in this chapter.

## **CHAPTER 9**

### **ENVIRONMENTAL EDUCATION IN GEOGRAPHY TEXTBOOKS**

#### **9.1 Introduction**

As noted in Chapter 4 (see Section 4.12.1), it is widely recognised that textbooks are valuable resources for teachers in planning lessons, and thus have a great influence on their teaching practice (Mikk, 2000; Ensor et al., 2002; Tani, 2004). This suggests that the analysis of textbooks can generate insights into how a new curriculum policy is translated into classroom practice. Thus far there has been no research into how the new curriculum policy in Lesotho relating to the integration of environmental education has been implemented at the level of geography textbooks. In this chapter I analyse three geography textbooks to explore the relationship between environmental education rhetoric and the intended practice of geography teaching in the secondary schools of Lesotho.

The analysis sought to address the following questions:

- How does the geography content as contained in the textbooks deal with environmental education in terms of coverage of environmental and sustainability issues?
- How does the pedagogy promoted in the textbooks compare with methodologies of environmental education as conceptualised in LEESP documents?
- What environmental education skills and values are embedded in different areas of the textbooks?
- What is the general form of assessment supported by the textbooks through their assessment tasks?

For the purposes of this study, as mentioned in Chapter 5, I analysed a series of three textbooks used to teach geography at junior secondary level at the model school, which was the main research school. The language used is generally at level of an average junior secondary school learner in Lesotho, which is likely to enhance their readability. They are generally small books with page numbers ranging from 98 to

153. These textbooks were published and produced in Lesotho under the Textbook Rental Scheme introduced with the financial assistance of the World Bank in 2004, and were first distributed to schools in 2005 and 2006. At that time environmental education had been declared an emerging curriculum theme to be incorporated into all levels of learning. For ethical reasons, I refer to the textbooks as books 1, 2 and 3 instead of by title or author's name.

## 9.2 Criteria used for textbook analysis

As indicated in Section 5.6.1.3, I analysed the textbooks using a qualitative approach involving *'content analysis'* and *'didactic analysis'* (Pingel, 2010) to determine how environmental education is dealt with. The concepts for developing analytical criteria were drawn from analyses of the *Reference Note for Environmental Education in Lesotho* and *Lesotho Junior Certificate Geography Syllabus* (see Chapters 6 and 8) for the three levels of junior secondary education in Lesotho (Forms A, B and C). I also used insights from a review of relevant literature in the fields of geography education, environmental education and curriculum studies. I then developed the analytical criteria shown in Table 9.1.

**Table 9.1: Criteria for analysis of textbooks**

Units of analysis		Analytical questions
Content	Definition of geography	How is geography defined in the textbook?
	Environmental concepts/issues	Does the textbook have a good coverage of environmental/sustainability concepts and issues? What is the general view of environment?
	Skills	Does the textbook encourage development of skills related to environmental education?
	Values	Does the textbook promote ethical, aesthetic, social and political values relating to environmental education?
Theory of instruction	General approach used to present content	Does the textbook work inductively in presenting the content?
	Learning experiences	Does the textbook use a variety of learner's activities?
	Visual representation of content	Are there visual representations of environmental issues?
	Assessment	How is assessment treated?

Using these criteria, I identified environmental education-related content, pedagogy, skills and values as reflected in the objectives for each chapter, relevant texts, diagrams/illustrations and learning activities. The analysis focused on explicit and implicit messages in different areas of the textbooks. As Mikk (2000) suggests, I also analysed the forms of null curriculum (what is left out) to highlight the strengths and weaknesses of each book, and their implications for classroom practice.

### **9.3 Inclusion of environmental education related content**

In this section I examine the coverage of environmental and sustainability issues in the three textbooks. I also analyse their perspective on the environment in terms of the four environmental dimensions – bio-physical, social, economic and political (O'Donoghue, 1993) – as described in Chapter 3 (see Figure 3.1).

#### **9.3.1 Definition of geography in the textbooks**

Only one book (Book 2) starts by introducing geography to the learners and providing a rationale for studying the subject. The book seems adopt the human-environment perspective of geography by defining it as ~~the~~ "the study of the interrelationship between people and environment". It goes on to say: "Geography offers us an understanding of the Earth and its inhabitants so that the world becomes a better place to live in". The textbook then gives an overview of the study of geography by emphasising that learners will:

- study how human actions change the environment
- examine how issues/problems such as drought, earthquakes and poverty affect people
- acquire knowledge and skills that will help them solve local and national environmental problems
- develop attitudes and values about the environment around them.

Although the book cannot be judged by this preliminary information alone, these statements show a clear commitment to the inclusion of environmental education.

### **9.3.2 Environmental concepts and sustainability issues**

All three books cover environmental content as an integral part of the geography content in most of the chapters. In Book 1, environment-related content is covered explicitly in six chapters out of eleven. In Book 2 and Book 3, environmental content is found in seven out of thirteen, and five out of nine chapters, respectively. In these chapters, local and global environmental and sustainability issues, or concerns arising from human interaction with the physical environment, are covered. These issues include loss of biodiversity, pollution, ozone depletion, climate hazards and HIV/AIDS. Table 9.2 provides a summary of the coverage of environmental concepts and sustainability issues, as expressed in the objectives of the books' chapters.

**Table 9.2: Coverage of environmental and sustainability concepts and issues**

Book series	Selected objectives	EE concepts and issues
Book 1	<p><i>Chapter 1: The solar system and the Earth</i> Describe the Earth's atmosphere</p> <p><i>Chapter 3: Weather and Climate</i> Discuss hazards caused by weather and climate and ways to deal with them</p> <p><i>Chapter 5: Soils and soil erosion</i></p> <ul style="list-style-type: none"> <li>• Identify agents of soil erosion</li> <li>• Identify types of water erosion</li> <li>• Describe problems caused by soil erosion</li> <li>• Describe soil conservation methods</li> <li>• Carry out soil conservation in your school's vicinity</li> </ul> <p><i>Chapter 6: Vegetation</i></p> <ul style="list-style-type: none"> <li>• Identify types of vegetation</li> <li>• Discuss problems caused by nature and humans on vegetation</li> <li>• Suggest vegetation conservation measures</li> </ul> <p><i>Chapter 7: Water</i></p> <ul style="list-style-type: none"> <li>• Illustrate hydrological cycle</li> <li>• Discuss water related problems</li> <li>• Describe simple water purification methods</li> <li>• Suggest water conservation methods</li> </ul> <p><i>Chapter 8: Population</i> Explain the impact of HIV/AIDS on population</p>	Ozone depletion, climate hazards, soil erosion, water, HIV/AIDS
Book 2	<p><i>Chapter 2: Geology and geomorphology</i> Discuss the effects of earth quakes and volcanism</p> <p><i>Chapter 3: Weather and climate</i></p> <ul style="list-style-type: none"> <li>• Identify and discuss disasters related to weather and climate</li> <li>• Discuss ways of dealing with them</li> </ul> <p><i>Chapter 4: Weathering</i> Describe the impact of weathering on the environment</p> <p><i>Chapter 5: Wind erosion</i> Suggest ways of controlling the rate of wind erosion in your surrounding areas.</p> <p><i>Chapter 10: Transport and communication</i> Discuss the impact of different modes of transport on the environment</p> <p><i>Chapter 11: Water</i></p> <ul style="list-style-type: none"> <li>• Discuss the impact of the LHWP on the physical environment</li> <li>• Discuss the impact of the LHWP on the social and economic lives of people</li> <li>• Suggest possible solutions to the problems caused by the project to population and the environment.</li> </ul> <p><i>Chapter 12: Energy</i></p> <ul style="list-style-type: none"> <li>• Describe the impact of energy use on the environment</li> <li>• Describe energy conservation measures</li> <li>• Conduct energy conservation activities</li> </ul>	Natural disasters, acid rain, wind erosion, pollution of water, HIV/AIDS, loss of biodiversity, energy scarcity, traffic congestion
Book 3	<p><i>Chapter 3: Weather and climate</i></p> <ul style="list-style-type: none"> <li>• Describe relationship between climate and vegetation</li> <li>• Discuss the influence of climate on human activities</li> </ul> <p><i>Chapter 4: vegetation and agricultural land use</i> Discuss uses of forests</p> <p><i>Chapter 5: Settlements</i> Topic : Environmental problems of rural and urban settlements</p> <p><i>Chapter 6: Industries</i> Explain the impact of mining on the environment...</p> <p><i>Chapter 8: Energy</i> Describe the advantages and disadvantages of hydro-electric power and solar energy</p>	Deforestation, loss of biodiversity,  soil erosion, greenhouse effect, desertification, pollution, littering, waste management

Some of the issues shown in Table 9.2 are identified in the *Lesotho Environment Policy 1997* and the *National Vision 2020* as priority areas to be addressed through education. These issues are soil erosion, loss of biodiversity, pollution and

HIV/AIDS. Soil erosion and pollution relate to the traditional content of geography, whereas biodiversity and HIV/AIDS are new content areas in the subject. The inclusion of these new sustainability issues represents a change in secondary school geography, which may be seen as supporting the goals of sustainable development in Lesotho. This congruence with environmental education policy initiatives is likely to put geography in a competitive position within the secondary school curriculum in the country, as the subject may be perceived to be addressing key national goals relating to sustainable development. However, as Bednarz, Petersen and Bednarz (2007) suggest, the presence of environmental concepts and issues in the textbooks does not give a full picture of the extent of inclusion of environmental education. It is necessary to explore the view of the environment adopted in the textbooks in the course of their presentation and treatment of the concepts and issues mentioned above.

### **9.3.3 View of the environment**

Like the geography curriculum document analysed in Chapter 8, the textbooks generally treat the environment as fragmented, while emphasising the biophysical dimension. The content is structured according to the broad distinct themes of physical and human geography, with little attempt to show the links between the two. For example, in Book 1, consistent with the official syllabus for the targeted class, the book emphasises the earth tradition, treating the environment as the physical earth. Out of the six chapters analysed for the purpose of this study, only one chapter deals with the human aspect of the environment. The emphasis throughout falls upon the question of how the biophysical environment functions, and little attempt is made to show how these physical aspects relate to human activities.

However, as the learners progress through the class levels up to Form C, the emphasis in the textbook content shifts towards human geography. There are three chapters out of seven which focus on human geography in Book 2, and four chapters out five in Book 3 (see Table 9.2). This represents discontinuity rather than continuity in geography content, which is also evident in the geography curriculum document analysed in Chapter 8. Unless geography teachers are able to bring relevant knowledge from the physical background of geography to their teaching of issues

relating to human aspects, the learners are unlikely to develop a holistic view of environmental issues. The lack of continuity in the content of the subject, as described above, may impede learners' understanding of the complex interaction between people and their environment. It is acknowledged in the literature on geography education that continuity enhances learning, as learners use and build on their previous knowledge, thereby acquiring skills and understanding (Lambert & Bladerstone, 2000; Bennetts, 2002; Beets & Le Grange, 2008).

A fragmented view of the environment is also observable in Chapter 3 of Book 3, which deals with world climate regions. On page 33 of this book there is an opening statement which reads:

We know that climate *influences* human activities. But, climate may not necessarily *determine* all the activities because human beings are capable of modifying some natural elements. (p.33)

Despite this statement, the content in this chapter is fragmented and tends to follow the traditional approach of environmental determinism (Marsden, 1997). For example, when human activities in desert areas are discussed on page 41, there is no reference made to the role of farming technology in modifying the physical environment in order to create possibilities for crop farming in naturally dry desert conditions. Moreover, when describing the characteristics of the *rainforests* the authors simply point to a one-way relationship between climate and vegetation, without illustrating how vegetation may influence climatic conditions. Such a narrow analysis of physical processes is inadequate in terms of promoting ecological thinking among the learners.

There are, however, instances where a holistic view of the environment is promoted. The most notable example can be found in Chapter 1 of Book 1, where the author discusses the causes and effects of ozone depletion. In this discussion, the author considers how humans have contributed to the destruction of the ozone. She also describes health problems associated with ozone reduction, its impact on food production and the importance of the ozone international agreement signed in Montreal, Canada as a policy to support the conservation of the ozone layer. This reflects a broader view of the environment, in that the depletion of ozone is a biophysical environmental issue resulting from human activities, which in turn has a

direct impact on social and economic dimensions. In response to these problems, the author of the textbook further shows that there is political will and commitment on a global scale to conserve the ozone layer. In this way, the approach used to present this aspect of the content reflects the links among the three pillars of sustainable development, as illustrated in Chapter 3 (see Figure 3.2). A similar observation is made in Chapter 6 of the same textbook, where the human causes of water pollution and the effects of this pollution are presented in two diagrams covering more than a page each (see for example Figure 9.2).

A broad view of the environment is also evident in Book 2, where the advantages and disadvantages of volcanic eruptions are treated in a holistic way, reflecting their physical, social and economic dimensions. This gives learners a broad perspective on environmental and sustainability issues (McKeown, 2006). The integrated view of the environment, evident in the textbooks, reflects the traditional distinctive feature of school geography as both a social and natural science subject. A further analysis of how the environment is conceptualised in the textbooks is considered later in section 8.6, which deals with values and attitudes.

## **9.4 Theory of instruction**

LEESP espoused a learner-centred pedagogy underpinned by the concept of action competence (see sections 1.3.2 and 6.7 respectively). In this section I analyse the three textbooks to identify the dominant implicit pedagogy. For the purpose of this analysis, I focus on the general approach used to present the content, learning activities, and the visual representation of environmental issues.

### **9.4.1. General approach used to present the content**

There are variations within and across the textbooks in the manner in which they present the content. However, in Book 3, the approach is generally deductive. At the beginning of each chapter there is a list of objectives followed by the text, rather than the text being introduced with an activity exploring learners' prior knowledge. The book encourages didactic methods of teaching by defining the key concepts and providing a dense text, but without sufficient activities to help learners to interact with

the text. For example, in Chapter 4 of this book, instead of starting by exploring learners' prior knowledge and experience on the topic, the authors provide a long didactic text (about a page) on factors affecting crop farming in Lesotho (see the extract in Box 9.1).

### Box 9.1: Extract showing a didactic approach

#### Factors affecting crop farming

We will first discuss the conditions that affect crop agriculture generally and then the specific conditions affecting each crop.

- The annual average rainfall of 700 mm is adequate for most crops grown in Lesotho. The relatively low temperatures in summer and the cold winters discourage pests and diseases and

make it possible to produce good quality crops. The climatic conditions are also good for the production of temperate fruits at a time when these fruits are out of season in the northern hemisphere.

- The occurrence of frost shortens the length of the growing season and can damage the crops.
- Drought can affect production very severely.
- The soils of Lesotho, although generally not very fertile, can be made productive with good management.
- There is plenty of water in Lesotho to make irrigation possible. Irrigation would help to increase production, as well as reduce the impact of drought. What is needed is capital (money) to make it possible to bring water to where it may be needed.
- A good infrastructure, particularly roads, is needed to enable the farmers to bring in their produce and to get it to the market. Roads have been improved considerably in recent years, particularly in the Lowlands. Roads and other facilities, such as irrigation are, however, still inadequate.
- Farmers need capital if they are to invest in agriculture. Since the collapse of the Lesotho Agricultural Development Bank, there is no special bank from which farmers can borrow money.
- There is a shortage of labour but a high level of unemployment in Lesotho. People do not want to go into agriculture for the reasons given above. What is needed is to make agriculture attractive by, for example, offering good prices. In the past, the Basotho have shown that they are hardworking and willing to take chances in order to produce more crops.
- There must be a good marketing system. The marketing system has not been working well. The Government is now encouraging private companies to be responsible for buying produce from the farmers.
- One of the major factors is land and how it is held. It is estimated that agricultural land makes up only 9% of the total area of Lesotho and is shrinking as a result of soil erosion and land degradation. As a result, the farms are small and this in itself does not make it easy to improve agriculture, for example, by the use of tractors and other machinery by individual farmers. In addition, the fields are often scattered and the farmer wastes a lot of time moving between the fields. At the moment, land in rural areas is owned by the community and cannot be sold. This means an able and keen farmer cannot expand his or her land by buying more land.

By contrast, in Book 2 most chapters begin with an activity eliciting learners' prior knowledge on the topic. Most of these activities require learners to reflect on their everyday knowledge and articulate what they know about the topic under discussion. A typical example of this approach can be found in Chapter 5, which begins with activity 5.1, asking learners the following questions:

### **Box 9.2: Extract of activity from Book 2**

1. What is wind?
2. In your local area, dusty winds are often experienced. What kind of objects do you normally see being picked up by the winds?
3. Suggest ways of controlling wind erosion in your local area.
4. Why do some places experience more dust than others?
5. In Lesotho, which month of the year experiences dusty winds? Why? (p.54)

This activity is followed by text describing wind as an agent of erosion. The approach encourages learners to link geography knowledge with their everyday knowledge, thus making the subject more practical and real. Another example of an explicit link being made between geography subject knowledge and everyday knowledge of the learners is found in Chapter 12, in the section dealing with energy conservation.

However, this book (Book 2) also, despite its strength in attempting to link the subject content to local environmental issues, is inconsistent in terms of chapter design. Chapter 9 works against the inductive approach. After the list of objectives at the beginning of the chapter, there is some text describing the general characteristics of human population, followed by an activity designed for the learners to interpret population statistics from four Basotho villages. This design is not maintained throughout the chapter. On page 79 there is a table showing HIV/AIDS prevalence in Lesotho. Instead of creating an opportunity for the learners to explore the impact of HIV/AIDS using the information shown on the table, the authors provide a list of points describing the impact. In my view, a follow-up activity should have been designed to elicit what learners know from their everyday lives about the impact of HIV/AIDS, and how the problem is being handled in their communities. This design is in direct contrast with the claim made on the cover of the textbook that the information in the book is organised in a manner that encourages logical progression from the known to the unknown. The inconsistency in the general organisation of the chapters may reflect differences relating to the textbook authors' pedagogical principles.<sup>4</sup>

With regard to their view of knowledge, the textbooks seem to have a strong technical orientation in their methodologies. In most cases, the content is presented in an

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<sup>4</sup> This book is written by thirteen authors, who may have different educational backgrounds and experiences influencing their view of knowledge and pedagogy.

objectivist and transmissive manner, without encouraging learners to question it. This is illustrated by the emphasis on factual information typical of didactic texts. As has been already noted earlier in this section, this is particularly the case with Book 3 (see Box 9.1). This view of knowledge is inconsistent with learner-centred approaches recommended in the geography curriculum, and espoused by LEESP (see Chapters 6 and 8, sections 6.7 and 8.2.3).

The tendency to use didactic approaches in the textbooks, in spite of the curricular mandate for learner-centred approaches, might be attributed to a number of factors. First, it could be that the authors of the textbooks had their eye on examination requirements, which currently exert a lot of influence on classroom teaching in Lesotho (see Chapter 2). Secondly, it could be that the authors believe in transmissive teaching because they themselves are products of an educational system which emphasises didactic methods of teaching.

#### 9.4.2 Learning activities

With the exception of Book 3, which is generally non-interactive, the textbooks use a variety of learning activities. These activities include group discussions, experiments and project work, all of which have the potential to promote environmental action-oriented learning. The following activities are typical examples:

#### Box 9.3: Extract from books 1 and 2

Identify an area in your school where there is soil erosion. What has it been caused by? What can you do to prevent further erosion? Present your ideas to the rest of the group and carry them out (Book 1, p.57).

Work in groups

1. Discuss the effects of the use of ... energy sources on the environment under the following headings: extraction, processing, transportation and disposal of waste product.
2. Each group should discuss one source of energy and present its findings to the class.
3. The sources of energy to be discussed *are: biomass, coal and hydropower* (Book 2, p. 129).

As can be seen from the extracts, the activities require learners to work in groups and think about solutions to the problem of soil erosion in their local contexts. Apart from laying a foundation for action-oriented learning, these activities provide an

opportunity for learners to work collaboratively, and thus create a context for cooperative learning as envisaged in the LEESP programme (see Chapter 6). For example, the activity extracted from Book 2, though prescriptive, affords learners the opportunity to interact and share experiences of different backgrounds (rural and urban) with regard to the use of various energy sources. Learners' experiences could be used to emphasise the importance of interdependence and individual accountability, which are regarded as the key aspects of cooperative learning (Stevenson, 2007).

The analysis also shows that, consistent with the syllabus requirements, the textbooks provide opportunities for outdoor learning about both the natural and the built environments. For example, activity 2 in Chapter 5 of Book 1 requires learners to observe the soil profile near their school or in their local areas.

#### **Box 9.4: Extract from books 2 and 3**

There are other similar activities in the other two books:

After windy weather, go outside and observe the area around your school or your home. Then record anything that you see has been formed as a result of the windy weather.

Give a brief description of:

- a) the features that you observed
- b) areas where you have observed them and the process of erosion that you think has occurred (Book 2, p.57).

Study the town nearest to your school. Write an essay on the morphology of the town (Book 3, p.95).

By including outdoor learning activities, the textbooks reinforce geography's traditional principle that "the field is the geographic laboratory" (Bland, Chambers, Donert & Thomas cited in Kent & Foskett, 2002, p.160). They also support the learning perspective of education *in* the environment (Fien, 1993). But most of the activities that open up opportunities for outdoor learning simply focus on the direct observation of the environment, without engaging learners in hands-on activities. This approach conflicts with the methodological guidelines in the curriculum document, which suggest that learners should be encouraged to undertake environment-related projects, such as the growing of endangered plant species or the conservation of soil

(see Section 8.2.6). Fien (1993) and other environmental educators argue that the goals of education *for* the environment can be achieved when learners are engaged in hands-on activities attempting to address environmental issues and problems.

The LEESP environmental education programme adopts a whole-school development approach which requires learners to interact with the community in resolving environmental problems (see Chapter 6). The textbooks, particularly Book 1, contain community-based learning activities that create a context for learners to interact with the community. In line with the syllabus recommendations, there are some activities that require learners to conduct community environmental awareness campaigns.

### **Box 9.5: Community awareness campaign**

- (a) In your groups, discuss what issues need to be addressed in order to make your community aware of the importance of clean water.
- (b) Make posters that can be put in your community. Remember that they should be as informative as possible and that your slogan should be eye-catching! (Book 1, p.70).

Community-based activities, such as the one described in Box 9.5, have the potential to bridge the gap between theoretical geography knowledge and community knowledge. Consistent with the methodological suggestions of the syllabus, the textbook (Book 1) creates contexts in which members of the community can come to school and lead discussions in class. For instance, when the topic is water purification methods the author recommends that someone from the Water and Sewerage Authority (WASA) could be invited to give a talk to the class. Similarly in Book 3, learners are required to ask old people in their communities about how vegetation has changed over a period of time. A further example of the integration of geography with common knowledge can be found in Chapter 12 of Book 2, in a section dealing with energy conservation:

### **Box 9.6: Community-based activity on energy conservation**

1. What is the main source of energy [used] in your home?
2. Which activity consumes most energy in your house?
3. What can your family do to save energy? (Book 2, p.129)

Not only do the community-based activities suggested in the textbooks bridge the gap between geography school knowledge and everyday knowledge, they also represent a form of indirect environmental action (Jensen and Schnack, 2006, p.479), raising the level of environmental awareness, which can lead to direct environmental action by members of the community. This is particularly exemplified by the activity shown in Box 9.7.

#### **Box 9.7: An activity leading to action-competence**

Conduct an interview with a group of people affected by the project [Lesotho Highlands Water Project] to find out how they were affected and compensated (Book 2, p.122).

The analysis also reveals that some learning experiences supporting textual information in textbooks encourage enquiry learning, which has been historically neglected in Lesotho secondary geography. Most enquiry-based learning exercises encourage learners to go beyond the text and seek information from the internet and the community. The following are typical examples of such enquiry learning approaches:

#### **Box 9.8: An extract showing examples of enquiry approaches**

If you have access to computer, find out more about the potential disasters that could be caused if ozone problem was not controlled (Book 1, p.12).  
Do [internet] search to find information on one of the following topics:

- impact of AIDS on women
- the impact of AIDS on children, especially in developing countries like Lesotho (Book 1, activity 4, p.76).

#### **9.4.3. Visual representation of environmental issues**

In geography, it is recognised that visual illustration, especially in the form of photographs or pictures, help to bring reality into the classroom (Lambert & Bladerstone, 2000). Illustrations of environmental issues and concepts in geography textbooks are particularly important in the context of Lesotho, where teachers rarely engage learners in field activities. As mentioned in Section 9.3.3, above, Book 1 uses

a variety of illustrations in the form of diagrams, pictures and photographs. In this textbook, there are illustrations of environmental issues relating to the biophysical, economic and social aspects of the environment. On page 64, there are fascinating pictures portraying human causes of pollution, which include industries, water transport, the use of farming chemicals, and littering (see Figure 9.1).

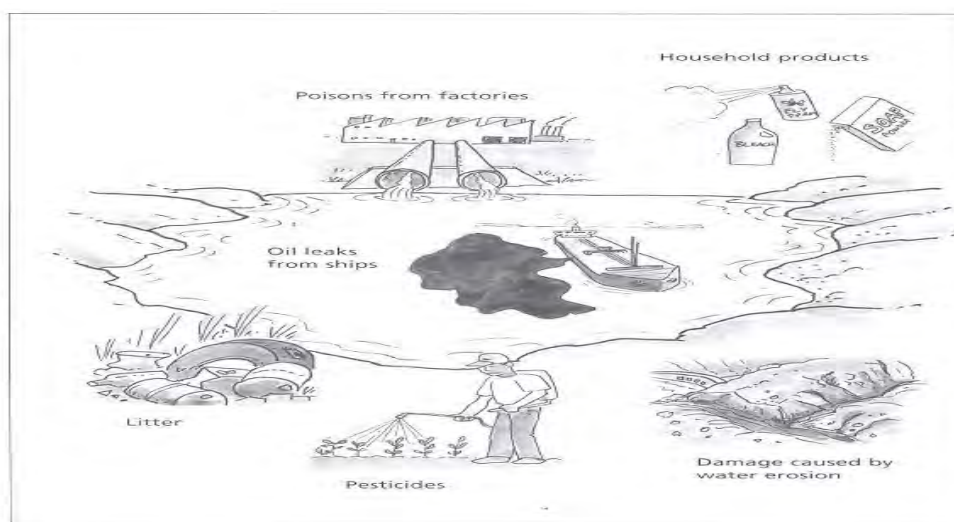


Figure 7.3 How water is polluted

### Figure 9.1: Human causes of pollution: Extract from Book 1

Although the information shown in the illustration in Figure 9.1 is comprehensive in terms of its coverage of the human causes of pollution, there is no link between the illustration and the text. There is also no activity to help learners work with the information shown for a deeper understanding of pollution as an environmental issue. This shortcoming applies to all the illustrations in this textbook. For example, on page 66 there is a good diagram illustrating the hydrological cycle as an environmental concept. The author makes no reference to this diagram in the text, nor does she suggest a related activity. This denies learners an opportunity to develop visual literacy (Mikk, 2000), which would help them understand environmental concepts and issues better (Bergmann, 2000).

Visual representation of environmental issues is very limited in the other two textbooks. In Book 2, the authors make use of a picture on page 24 to help learners identify the effects of earthquakes. This is one of the very few instances where an illustration is used to depict an environmental issue, despite all the opportunities

offered by the content. For example, in Chapter 10, which deals with transport and communication, the authors outline the environmental impact of different modes of transport in a table, but without an illustration.

Book 3 is probably the worst case in terms of the use of visual illustrations. Although the textbook generally provides rich textual information on environmental issues, there is little visual representation of these. Other than a figure on page 105, which shows the impact of mining on the landscape, there are no other illustrations depicting environmental concepts and issues. The text on the environmental problems of urban settlements in Lesotho on pages 97-98 would have had more affective impact if there had been pictures showing forms of pollution in the urban areas. Perhaps the sparing use of visual illustrations in this textbook reflects the didactic feature of the book reported in section 9.4.1.

The limited use of visual representation in the two textbooks could compromise an understanding of environmental issues in the context of Lesotho, where some learners have reading problems. As Bergmann (2000) notes, photographic representation enhances learners' conceptualisations of environmental issues. Moreover, the use of visual illustration could help develop positive attitudes about the environment. It is recognised in the literature that illustrations in textbooks can serve the purpose of developing desirable attitudes among learners (Mikk, 2000).

## **9.5 Environmental education-related skills**

The environmental education *Reference Note* calls for the development of skills relating to action competence (LEESP, 2004, p.3). Such skills include problem solving, decision making, creative thinking and critical thinking, investigative and inquiry skills, and communication skills. These skills are also relevant to school geography as a subject concerned with the explanation of the environment for the learner. In order to identify possible skills transfer, I analysed all the learning activities in the relevant chapters of the three textbooks. I concentrated only on cognitive skills because, unlike affective and psychomotor skills, they are easily identifiable from a written text. Table 9.3 shows an analytical instrument that I developed to identify the skills promoted in the three textbooks. I drew partly on the

work of Murray and Wilmot (2000), who evaluated learning support materials for the Life Science Project in Namibia.

**Table 9.3: Analytical instrument for identification of environmental education-related skills**

Skills	Guiding questions
Problem-solving and Decision-making	<ul style="list-style-type: none"> <li>• Are there opportunities for problem identification and exploration of solutions to the problem?</li> <li>• Do the textbooks create contexts where learners can evaluate alternatives to a solution of an environmental problem and decide on the appropriate course of action to be taken?</li> </ul>
Observation	<ul style="list-style-type: none"> <li>• Does the book create opportunities for direct observation of both physical and the built environment?</li> </ul>
Creative and Critical thinking	<ul style="list-style-type: none"> <li>• Are there opportunities for exploring the root causes of the problem, and why it is a problem?</li> <li>• Do the textbooks create opportunity to develop abilities to adapt to environmental problems?</li> <li>• Do they encourage learners to question the <i>status quo</i> and explore alternative ways understanding and solving environmental problems?</li> </ul>
Enquiry and Information sharing	<ul style="list-style-type: none"> <li>• Do the textbooks create opportunities for undertaking investigations on environmental issues?</li> <li>• Do they encourage learners to share their findings in the form a verbal or written report?</li> </ul>

Adapted from Murray and Wilmot (2000).

### 9.5.1 Problem-solving and decision-making skills

Through their learning activities, the three textbooks create opportunities for the development of problem-solving and decision-making skills. Learning activities found in the textbooks, such as poster development as a strategy for raising environmental awareness, or group discussions on possible solutions to environmental problems, can be described in terms of problem solving. In Book 3, for example, the learning activities shown in Box 9.9 reflect elements of a problem-solving strategy.

### **Box 9.9: Examples of problem-solving activities**

Discuss the litter problem in class. Try to find out how other countries deal with the problem of litter in settlements, make suggestions of what could be done in your village/town to prevent littering (Book 3, p.91).

Make a poster for Soil Erosion Day. Each member of the group should collect pictures and think of a slogan for the poster. On the day, put up all the posters around the school so that everyone can see them (Book 1, p.57).

In your school environment, identify areas that need to be protected against wind erosion. Think of ways of rehabilitating the bare areas and implement them (Book 2, p.61).

These activities have the potential to engage learners in decision-making as they suggest appropriate ways of responding to the problems of littering and soil erosion. In the process, learners are likely to suggest different courses of action to be taken, depending on their specific village/town contexts. For example, the activity extracted from Book 1 reflects a form of ‘indirect action’ (see Jensen & Schnack, 2006), sensitising other people to an environmental issue.

The representation of problem-solving skills in the textbooks, however, is relatively scanty, even though opportunities abound for emphasising them. For example, in Chapter 6 of Book 3, the activities do not take learners beyond the text to investigate or explore environmental issues associated with mining activities. The activity below serves to illustrate this claim:

### **Box 9.10: Activity on environmental impact**

Activity 6.7 Environmental impact

In groups, discuss the points above. Which are negative and which are positive?

Explain your answers (Book 3, p. 105)

The activity is based on a list of seven effects of mining, relating to the biophysical, social and economic dimensions of the environment. While this activity might also be useful in promoting cooperative learning, it is limited in terms of conceptual demands. Learners are simply required to classify the effects of mining, which have been

previously presented, into negative and positive impact. No attempt is made to encourage learners to explore what could be done at both community and government policy levels to minimise the negative impact of mining. The same observation is true of activity 8.6 on page 141 of the book (Book 3), which is limited to exploration of the negative effects of thermal power. Such activities are inadequate in terms of promoting action-oriented learning and encouraging learners to be actively involved in dealing with ongoing environmental problems. They reinforce education *about* the environment as opposed to education *for* the environment (Fein, 1993), and can cause worry and ‘action paralysis’ as they focus only on knowledge about the effects of environmental problems rather than exploring possibilities for change (Jensen, 2000).

### 9.5.2 Observation skills

The importance of observational skills in geography textbooks cannot be overstated, given the centrality of fieldwork or outdoor learning in geography (Lambert & Bladerstone, 2000; Lai, 2006). The Lesotho junior secondary geography curriculum also recognises the importance of observation skills by stating that ‘students can better learn by studying their environment and observing it closely’ (NCDC, 2004, p.2). As shown in section 9.4.2, which deals with learning activities, the textbooks (with the exception of Book 1) provide learning contexts for the direct observation of the environment through outdoor learning. Field observation activities involve both the natural and the built environments. As can be seen in Box 9.11, the authors create opportunities for direct observation in the environment.

#### Box 9.11: Opportunities for direct observation

Visit Bokong, Tsehlanyane or Liphofung. The purpose of the visit should include collection of plants for the school’s botanical garden or mini nature reserve.... (Book 2, p.122).

Walk around your school or village and make notes on the roles played by trees in protecting the environment. Write an essay on ‘Trees in our area’ (Book 3, p.77).

Activity 5.13: Environmental problems

Research and discuss the following as a class:

Find out more about the environmental problems in the town in your area. Have a class discussion about what can be done about these problems (Book 3, p.98).

However, as I indicated at the beginning of this section, there are no such activities encouraging direct observation of the environment in Book 1. This is surprising, given that the syllabus for this class level clearly recommends outdoor learning activities for direct observation of the environment, particularly in the study of weathering and natural vegetation. The mismatch between this textbook and the syllabus could mean that teachers will not take an advantage of the topics in this book to engage learners in field observations, thus denying them first-hand information about environmental concepts and issues.

### 9.5.3 Creative and critical thinking skills

The content analysis of the textbooks reveals an attempt to promote creative and critical thinking skills, though Book 2 is weak in this area. These skills are promoted through activities encouraging learners to think beyond the text and reflect on their local contexts in studying environmental issues. Learner activities in Box 9.12 are examples of such activities:

#### Box 9.12: Opportunities for development of critical thinking skills

##### *Book 1*

##### Activity 7: Coping with drought

In your groups, discuss the following paragraphs and debate how they apply to Lesotho. Present the outcomes of your discussion to the rest of the class.

- Sorghum and millet were the crops that people in southern Africa ate before maize was introduced. Some African farmers are discovering that sorghum grows when maize dies, so they are now planting sorghum. Maize needs good rains but sorghum survives better in the drier areas of southern Africa.
- All over the world dams are built in order to store water (Book 1, p.44).

##### Activity 3: Water pollution

In your groups, discuss the following questions:

- (a) How serious is water pollution in your local area?
- (b) What steps do you think should be taken to reduce the problem of water pollution in your local area?
- (c) If water in your local area is polluted, can you think of the reasons why this so?(Book 1, p. 70).

##### *Book 3*

Hold a debate in your class on whether Lesotho should or should not allow exotic species to continue to be planted (p. 73).

Although there is no mention of climate change, activity 7 in Book 1 encourages learners to think critically about ways in which communities in Lesotho can adapt to the negative impact of climate change. Activity 3 in a different chapter of this book encourages creative and critical thinking by asking learners to work in groups. In this activity the local context is emphasised, thus giving the learners an opportunity to think creatively and critically about the issue of pollution. The last activity in Book 3, as shown in Box 9.12, encourages learners to think of the negative impact of exotic plants and at the same time critically to consider who will benefit or who will be disadvantaged when exotic plants are banned, given the extent of wood shortages in some parts of Lesotho. Thus with appropriate mediation by the teacher, learners are likely to interrogate environmental issues and understand the conflicting interests associated with policies responding to environmental problems.

#### **9.5.4. Enquiry learning skills**

The geography junior secondary curriculum document recommends that “students may be guided into finding information on solving problems on their own and later report to the class” (NCDC, 2004, p.2). This suggests that geography teaching should emphasise the development of enquiry and communication skills. As I have indicated in section 9.4.2, the textbooks create some contexts for enquiry learning. There are activities that require learners to find information about environmental issues. These activities also require learners to organise the information and share it in class. For example, in Book 2, there is a research activity on page 122 that requires learners to interview members of the community on the impact of the Lesotho Highlands Water Project (LHWP). Book 1 also suggests a more elaborate activity intended to promote enquiry learning (see Box 9.13).

#### **Box 9.13: Enquiry learning**

Extract from *Book 2*

##### **Research**

You deserve an outing. Choose either A or B.

Topic A: Conduct an interview of a group of people affected by the project [LHWP] to find out how they were affected and compensated. You should divide yourselves

into groups so that the groups of people interviewed cover areas shown in the compensation plan (p. 122).

Extract from *Book 1*

### **A visit to a factory**

Ask your teacher to arrange for you to visit a factory in your local area. Find out the following:

- (a) How much water does the factory use par day, per week, per month and year/
- (b) Where does the water come from?
- (c) What is the water used for?
- (d) What are the workers doing to conserve water?

Present the information you have collected in the form of a table (p. 67).

Depending on teacher mediation, through these activities learners can learn how to find information and organise it in a way that would provide a broad picture of the impact of development activities on the lives of people and the environment at large. It is this kind of enquiry that can trigger political action for environmental conservation.

## **9.6 Values and attitudes**

As discussed in Chapter 6 (see Section 6.6), the LEESP environmental education programme envisages the development of values relating to sustainable development, democracy, as well as ethical and aesthetic aspects of learning. Similarly, the importance of making values and attitudes explicit in the geography curriculum and textbooks has been emphasised in the geography education literature (Ferreira, 2000; Lambert & Slater, 2000). The Lesotho junior secondary curriculum document, analysed in the previous chapter, also declares explicitly that “geography develops positive attitudes towards caring for the environment” (NCDC, 2004, p.1), even though there is no clear focus on sustainable development.

For an analysis of the values contained in the textbooks, I adapted Silva’s (1997) classification of values as cited in Ferreira (2000, p.76). In terms of this classification there are four categories of values, namely aesthetic, ethical, social and political (ibid.). Drawing partly on this typology of values, I conceptualise aesthetic values as consisting of aspects of learning which appeal to the emotional susceptibilities of the

learner. Ethical values encompass a personal code of conduct shaping the environmental behaviour of the learners. Social values are considered, in this study, as values developing when learners interact with each other and the environment, values that enhance an understanding of the complex human-environment relationship and respect for one's own culture and for cultural diversity. These also relate to a concern for sustainable development, empathy and solidarity. Political values, on the other hand, are related to voluntary participation in resolving environmental issues, and respect for democratic values.

Within the analytical framework developed by Silva, social and political values are sub-categories of ethical values. In the present context, however, these values are analysed as independent categories in order to highlight the social and political dimensions of environmental issues.

The geography textbooks analysed in this chapter, though not explicitly (as is the case with the curriculum document), do encourage the development of the values and attitudes needed for sustainable lifestyles, through a variety of learner-centred activities that challenge learners to move beyond the text and classroom environment. Table 9.4 shows the coverage of values according the four categories.

**Table 9.4: Values in geography textbooks**

Category	Values
<b>Aesthetic</b>	<ul style="list-style-type: none"> <li>• Empathy</li> </ul>
<b>Ethical</b>	<ul style="list-style-type: none"> <li>• Nature protection</li> <li>• Concern with sustainable development</li> <li>• Green consumerism</li> </ul>
<b>Social</b>	<ul style="list-style-type: none"> <li>• Cooperation</li> <li>• Concern with quality of life</li> <li>• Respect for own culture</li> </ul>
<b>Political</b>	<ul style="list-style-type: none"> <li>• Democracy</li> <li>• Citizenship</li> <li>• Environmental advocacy</li> </ul>

Adapted from Silva (as cited in Ferreira, 2000, p.76).

Table 9.4 shows that, with the exception of aesthetic values, which comprise the least represented category, there is generally a balanced approach in the coverage of values in the three textbooks. As these values form part of the hidden curriculum (Cornbleth,

1990; McLaren, 2007), I made a qualitative decision to identify values and classify them according to the four categories. It must be noted, however, that certain values cut right across the four categories as portrayed in the table. The integrated nature of values will be emphasised in the interpretation of extracts from the textbooks.

### 9.6.1 Aesthetic values

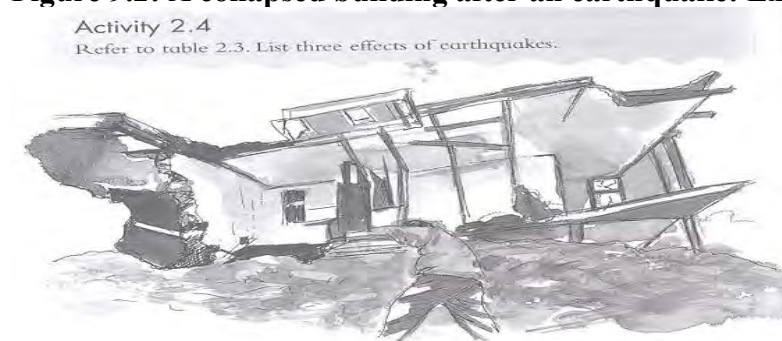
LEESP identifies aesthetic values as part of the core values to be included in environmental education. However, as Table 9.4 shows, these are the least represented values in the geography textbooks. Qualitative content analysis of the three textbooks shows that only one textbook (Book 1) emphasises, though to a limited extent, an aesthetic perspective on the geography content. The following is the only statement in the three textbooks that could be interpreted as reflecting aesthetic values:

...This activity is intended to help you as a class to form an HIV/AIDS Awareness Youth Club for the children in your school and in your community. As mentioned before there are many children who have been **orphaned** as a result of HIV/AIDS and who are now unable to attend school.... If you know any children who are in this situation, make a special effort to **include** them in your Youth Club (emphasis mine). (Book1, p.76)

While this extract may be seen as promoting social values, it also reflects the intention to promote the development of empathy so that learners can appreciate the need to support other people affected by HIV/AIDS, which is currently considered a serious sustainability issue in Lesotho and many other African countries (see Section 2.3.3).

The lack of emphasis on aesthetic values in the textbooks is not for want of opportunities. For example, in Book 2 the authors designed an activity based on a diagram showing the destruction caused by earthquakes (see Figure 9.4), but without an explicit focus on values.

**Figure 9.2: A collapsed building after an earthquake: Extract from Book 2**



Given the visual information conveyed here, the activities could have included a task asking learners to think of what they could do to assist people affected by an earthquake disaster. This task would have been useful in developing values and attitudes relating to solidarity and empathy. In Book 3, also, the authors do not take advantage of river landforms in Lesotho, nor of the rich biodiversity of the rainforests, in order to encourage appreciation of the beauty of nature. This is unexpected, given that one of the specific objectives of teaching geography as stated in the curriculum document is to “show appreciation of the need to preserve the beauty of their local and global environment” (NCDC, 2004, p.3).

### 9.6.2 Ethical values

As Table 9.4 shows, the textbooks contain three ethical values, albeit to a varying degree. In Chapter 1 of Book 1, there is an activity (activity 3) that promotes all three of the ethical values shown in the table. In this activity learners are asked to make an inventory of “ozone friendly” products and develop a poster showing the dangers of using CFCs. This activity follows a text dealing with the causes of ozone depletion. One statement in this text deprecates the use of CFCs as follows: “We put CFCs into the atmosphere when we use products that contain these chemicals...” (p.12). Although the author of the textbook does not acknowledge that products with CFCs have been removed from the market both internationally and in Lesotho, this statement reflects values relating to green consumerism, and has the potential to encourage the development of positive attitudes and values towards the environment. Green consumerism values are also implicit in Chapter 12 of Book 2, where the authors recommend the use of energy-efficient equipment as an energy saving measure.

There is also a concern for sustainable development, as illustrated in, for example, an emphasis on the importance of the conservation of natural resources and sustainable farming. The following extracts provide evidence for this claim:

**Box 9.14: Opportunities for development of sustainable development values**

Extract from *Book 1*

Soil conservation simply means use of our valuable soils... We should always keep a good vegetation cover over our soils. This means that trees and grass should not be cut or removed unnecessarily ( p. 57).

Extract from *Book 2*

The ability of plants to grow again and the constant presence of animal, water and sunlight illustrate resources are renewable. Although these resources are renewable, they should not be over used so that they are always available and once used should be replaced (p. 126).

Extract from *Book 3*

To preserve the structure and fertility of the soil, more farmers must be encouraged use manure and compost... These practices are called **organic farming** (emphasis in the original). (p.59)

The textbooks do not explicitly cover the concept of sustainable development. As is the case with the geography curriculum document analysed in Chapter 8 (see Section 8.2.4.1), none of the three textbooks mentions the concept of sustainable development, despite the availability of related content. This is surprising, given that at the time when the textbooks were written, sustainable development was a key concern in Lesotho, as indicated in national policy documents such as the *Lesotho Environment Policy 1997*, the *Vision 2020* and *Poverty Reduction Strategy 2003* (see Section 2.3.2). LEESP also featured sustainable development as its overarching concept. Why was such a dominant concept not included in the textbooks as part of the geography discourse? The reason for this could be that historically, sustainable development in the Lesotho school curriculum has been regarded as a specialised knowledge area within development studies (a school subject in the secondary curriculum). If this was the reasoning of the textbooks' authors, it would seem that their view of geography reflects what Bernstein (2000) calls a *collected curriculum* characterised by strong subject boundaries. The lack of emphasis on sustainable development could threaten the position of geography in the school curriculum when

it is seen in the context of the national education and development pronouncements like those stated in *Vision 2020*.

Content analysis of the textbooks' statements carrying ethical values reveals that the protection of nature is encouraged but only in an instrumental sense, with the environment only being valued to the extent that it satisfies human needs (Hattingh 2005; Tracana et al., 2008). The following statement illustrates this observation:

We have seen that one of the problems of tourism is the destruction of the environment. This means it is necessary to **protect the environment** for future use so that it remains a source of beauty and appreciation. (Book 2, p.103)

An instrumental attribution of value to the environment is also evident in Chapter 2 of Book 3, where the environmental dimension of river landforms comes in only when the landforms have an economic value. In text of about three-quarters of a page, the authors of this book outline the economic uses of river landforms, but without showing how the landforms are important for other species. While the emphasis on the economic benefits of river landforms may be interesting to learners, it does not provide them with a holistic understanding of nature. Landforms resulting from the work of rivers create habitats for flora and fauna. This might be useful ecological knowledge if geography learners are to appreciate the importance of conserving river ecosystems.

Similar findings are reported by other studies conducted in other national contexts. For instance, Ross (2007, p.668) notes from analysis of geography assessment materials in Scotland that the environment was "often presented as having a monetary value in relation to agricultural production or tourism, and the income derived from these". Similarly, Tracana et al. (2008), in their textbook research analysing the progression of the topic "Pollution" in Portuguese primary and secondary schools, observe that the earth is seen as a resource for humans, rather than as a resource to be shared with other living beings.

### 9.6.3 Social values

It is recognized that “environment” as a concept is a social or cultural construct (Lee & Williams, 2006). Geography textbooks with an emphasis on the environment should make social values explicit to enhance learners’ understanding of environmental issues. All three textbooks, through their content and methodological approaches, create learning contexts for the development of social values relating to cooperation in dealing with environmental issues. As indicated in Section 9.4.2, all three books use learning experiences that encourage learners to work collaboratively in learning *about*, *in* and *for* the environment. While some of the activities may not be described in terms of cooperative learning, they nevertheless create an opportunity for learners to interact among themselves and with the community. And as they interact, the learners are likely to develop tolerance and a better understanding of conflicting interests in making environmental decisions. For example, in Book 1, activity 5 (c) requires learners to work in groups and discuss ways which soil erosion can be prevented:

Identify an area in your school where there is soil erosion. What has it been caused by? What can be done to prevent further erosion? Present your ideas to the rest of the class and then carry them out. (p. 57)

Depending on the individual teacher’s ability to recognise both the explicit and implicit meanings of this activity, the task can take the form of cooperative fieldwork encouraging the development of values relating to social responsibility for the environment.

Values relating to respect for one’s own culture are also covered, to some extent, in the textbooks. When dealing with solutions to the problems caused by the Lesotho Highlands Water Project, Book 2 emphasises that while it is important to establish botanical gardens as a strategy for nature conservation, traditional healers should be given access to these gardens. In a similar manner, Book 1 deals with natural vegetation in Chapter 6 and stresses the importance of using the Sesotho names of plants indigenous to Lesotho. The author also draws learners’ attention to those plants that were and still are used as food and for medicinal purposes.

#### 9.6.4 Political values

Although environmental issues in Lesotho are not necessarily rooted in the changing political landscape on a national level, as is the case in countries such as South Africa (van Harmelen, 1999; Irwin & Lotz-Sisitka, 2005), promoting political values relating to the environment among learners is just as important as elsewhere. Table 9.3 shows that the textbooks cover political values pertaining to democracy, citizenship and environmental advocacy. In many chapters there are community-based activities, particularly in Book 1, which creates learning contexts for the development of such values. The following extracts are typical examples of such activities:

#### Box 9.15: Political values relating to EE

In your groups, discuss what issues need to be addressed in order to make your community aware of the importance of clean water.  
Make posters that can be put in your community...(Book 1, p.57).

Discuss the litter problem in class. Try to find out how other countries deal with the problem of litter in settlements, and make suggestions of what could be done in your village/town to prevent littering (Book 3, p.91).

These activities do not only promote environmental awareness among community members, they also help learners to reflect on the values that shape their environmental action. In this way the activities have the potential to promote citizenship values, as envisaged by LEESP. As I have shown in Chapter 6 (see Section 6.6.2), LEESP endeavoured to achieve democratic citizenship values among school leavers (LEESP, 2004), consistent with a transformative education *for* the environment (Fein, 1993).

#### 9.7 Assessment

Although there are many formative assessment activities, with the exception of Book 1 the textbooks emphasise summative assessment. In Book 2, at the end of each chapter there is a summary of the main points followed by a revision exercise consisting of a long list of questions. While this approach may be useful in helping learners synthesise information and concepts, emphasis on summative assessment may “exert influence that is not educational” (Lambert, 2002, p.123) by encouraging

the memorisation of content for examinations, instead of promoting learning. In these revision exercises, with a few exceptions the questions require recall of factual information previously presented. This is especially evident in Chapters 2, 3 and 4, which deal with physical geography. The following exercise extracted from chapter 2 serves to illustrate the point:

**Box 9.16: An assessment task**

Revision exercise

1. List the characteristics of:
  - a. a shield volcano
  - b. a composite volcano
2. With the help of a diagram, describe the differences between:
  - a. sills and dykes
  - b. batholiths and laccoliths
  - c. simple folds and complex folds
  - d. reverse (thrust) faults and transcurrent (tear) faults
3. Describe the effects of earthquakes.
4. Volcanism boosts the economy of countries. Debate this point of view. (Book 2 p.25)

While the last two questions may seem to be encouraging environmental learning, they are limited in terms of their conceptual demands. They require learners to remember factual information on earthquakes presented in the text and repeated in the summary section, rather than demonstrate high order skills relating to action competence. It should be noted that environmental education, as conceptualised in Lesotho under LEESP, calls for comprehensive assessment covering all four levels of knowledge namely, data knowledge, explanation knowledge, judgement knowledge and action knowledge, with emphasis on the last two levels of knowledge (see Section 6.8).

The analysis also reveals that Book 2 and Book 3 provide limited opportunities for the assessment of environmental education-related values and attitudes. Where the assessment is explicit on values, as shown in Section 9.6.3, priority is given to the anthropocentric values of the dominant social paradigm. A lack of emphasis on the assessment of values in these textbooks could be interpreted as reflecting the authors' interest in summative evaluation, which focuses mainly on the cognitive aspects of learning as opposed to affective learning.

Book 1 is the exception. Although there are no explicit guidelines on the assessment of values and attitudes, many activities in this textbook open up opportunities for the assessment of the ethical and aesthetic aspects of environmental learning. For example, in activity 5 on page 57, task (b) asks learners to make a poster for school Soil Erosion Day through a collaborative effort (see as quoted in Section 9.5.1). Through this activity teachers can assess the development of the values that shape their environmental actions, as expressed in the posters. Other activities in Book 1 involve field observation, group discussion and debate, all of which can be used to assess learners' ability to demonstrate important values such as caring, democracy and empathy.

## **9.8 Conclusion**

As summarised in Table 9.5 at the end of this chapter, the textbooks vary in their strengths and weaknesses. Despite this variation, like the geography curriculum document analysed in Chapter 8, they provide opportunities for integration of environmental education into geography. The content analysis of the three textbook series indicates that the textbooks have a good coverage of environmental concepts and issues, ranging from the local to the global. In each of the three textbooks there are only a few chapters that do not deal with environmental issues in an explicit manner. This is to be expected, given the fact that school geography is concerned with the study of the environment and of the interrelationship between humans and the physical environment.

The analysis also reveals that with the exception of one book (Book 3), the textbooks promote a learner-centred pedagogy through activities ranging from individual work to group tasks, both in and outside the classroom. Most of the learner-centred activities create a context for the development and application of problem-solving skills associated with the notion of action competence, which underpins the intended environmental education practice in Lesotho.

However, the textbooks, except for one (Book 2), work deductively, presenting textual information delineated according to pre-specified objectives. This deductive approach is also evident in the manner in which key concepts are presented in the two

textbooks. All three books reflect an objective view of knowledge, in terms of which key concepts are defined in detail, leaving little opportunity to explore alternative meanings.

The methodological approaches used in the textbooks also open up opportunities for the development of positive environmental values, including the ethical and aesthetic perspectives encouraged in the *Reference Note*. However, it is evident from the analyses that the environment is presented as having a resource value rather than an intrinsic value in its own right. Moreover, the analysis shows that while there are opportunities for observation of the natural environment, the textbooks generally create few opportunities for hands-on activity in the environment. This can easily compromise the achievement of the goals of the critical pedagogy of education *for* the environment. Finally, the analysis shows that assessment is mainly summative with limited opportunities for the assessment of values and skills associated with action competences. This form of evaluation, as I have suggested, has the potential to encourage rote learning rather than environmental learning.

In spite of the limitations inherent in the textbooks, they nevertheless represent a change in Lesotho junior secondary geography in terms of content and pedagogy. As I pointed out in Chapter 3 (see Section 3.6), there has previously been little emphasis on local context in the teaching of geography in Lesotho, and classroom teaching has, as in other subjects, been characterised by teacher-centred methods. The textbooks generally emphasise the Lesotho context and try to strike a balance between teacher-centred and learner-centred methods. It would be interesting to find out whether geography teachers, especially those who received LEESP training, take advantage of these new textbooks and emphasise the environmental dimension of geography using learner-centred methods. In the next chapter, I present analysis of the interview data on how geography teachers interpreted environmental education in relation to the teaching of geography, with a particular focus on the LEESP curriculum intentions.

**Table 9.5: Summary of the strengths and weaknesses of the textbooks**

Focus of analysis		Book1	Book2	Book3
EE-related content	Environmental issues/concepts	- Covered in 6/11 chapters	-covered in 7/13 chapters	-Covered in 5/9 chapters
	View of environment	-adopts a fragmented view of environment with emphasis on biophysical dimension	Fragmented view emphasising issues relating to human geography	-Fragmented view with a focus on human aspects of geography -Follows a traditional approach of environmental determinism
Theory of instruction	General approach	- Generally deductive	-Somewhat inductive with each chapter beginning by exploring learners' prior knowledge	-Generally deductive -Mainly didactic
	Learners' activities	-Uses variety of activities -There are opportunities for outdoor learning -Creates contexts for community involvement -Little hands-on activities	-Uses variety of activities with some promoting action competence - offers opportunities for outdoor learning -Little hands-on activities -there are community-based activities	Non-interactive
	Visual representation of environmental issues	-Uses diagrams, pictures and photographs -No activities designed to help learners interpret illustrated information	-There is limited visual representation	-There is very limited visual representation of environmental issues
Skills	Problem-solving	X	X	X
	Observation	NIL	X	X
	Creative and critical thinking	X	NIL	X
	Enquiry learning	X	X	X
Values and attitudes	Aesthetic values	X	NIL	NIL
	Ethical values	X	X	X
	Social values	X	X	NIL
	Political values	X	NIL	X
Assessment		There are opportunities for assessment of values and attitudes	Mainly summative with limited opportunities for assessment of values	Mainly summative with limited opportunities for assessment of values

## CHAPTER 10

### GEOGRAPHY TEACHERS' INTERPRETATION OF ENVIRONMENTAL EDUCATION CURRICULUM INTENTIONS

#### 10.1 Introduction

The perennial problem of disjuncture between the intended and the implemented or attained curriculum, and its impact on curriculum change, are widely acknowledged in the literature (Cuban, 1992; Prawat, 1992 Taylor et al., 2003; Cotton, 2006; Rogan, 2007; Blignaut, 2008). To the extent that I was interested in the teachers' sense-making of LEESP environmental education ideas, my research focused on the slippage between the intended and the implemented curriculum, rather than on assessment and learning *per se*. In the previous two chapters (chapters 8 and 9), I considered the congruence between environmental education as conceptualised in LEESP, and school geography as represented in the geography curriculum document and textbooks respectively. In these analyses I showed that the curriculum materials (curriculum document and textbooks) provide opportunities for geography teachers to make sense of and implement environmental education. In this chapter, I provide an analysis of how geography teachers are actually interpreting and making sense of environmental education. The analysis is based on interviews with eleven geography teachers who participated in this study. I examine possible changes in school geography, to the extent that these may be reflected in teachers' views of knowledge and pedagogy.

Following Spillane et al. (2002, p.388), I suggest that teachers' sense-making and enactment of new curriculum policy are situated in the interaction among their "cognitive structures", the context within which they operate, and curriculum policy intentions. Thus the purpose of this chapter is threefold: First, to understand and interpret how geography teachers perceived and understood environmental education curriculum reforms in relation to geography. Secondly, to explore how geography teachers' beliefs/views about teaching and learning compare with the environmental education pedagogy envisaged in LEESP. Thirdly, to explore contextual and structural factors that might be enabling or constraining the implementation of environmental education as perceived by the teachers themselves.

## 10.2. Teachers' profile

According to the cognitive framework proposed by Spillane et al. (2002), teachers' ability to interpret a new curriculum policy depends on, among other things, their prior knowledge and experience (see Section 4.12.1). Hence in this section, I present data on the teachers in order to make inferences about their ability to interpret and translate environmental education, as conceptualised in LEESP, into their classroom practice. These profiles are shown in Table 10.1.

**Table 10.1: Teachers' profile**

Teacher	Gender	School	Qualification	Teaching experience	Participation in LEESP workshops
Teacher A	Male	Menkhoaneng High school	B.A.ED	8 years	10 workshops
Teacher B	Female	Menkhoaneng High school	B.ED	5 years	10 workshops
Teacher C	Female	Menkhoaneng High school	B.ED	10 years	10 workshops
Teacher D	Female	Mohokare High school	B.Sc	5 years	2 dissemination workshops
Teacher E	Female	Mohokare High School	B.ED	15 years	Attended 2 dissemination workshop
Teacher F	Male	Qiloane Secondary School	B.Sc.ED	6 years	2 workshops
Teacher G	Male	Lepoqo High School	B.ED + MDS	13 years	10 workshops
Teacher H	Female	Lepoqo High School	B.ED	10 years	None
Teacher I	Female	Lepoqo High School	B.ED	5 years	None
Teacher J	Male	Letlama High School	B.A. + M.A. (Geography)	8 years	None
Teacher K	Female	Letlama High School	B.A.	7 years	None

The biographic details shown in Table 10.1 were obtained from a total of eleven teachers teaching geography in the research schools. As the table shows, seven of these teachers received training in environmental education, through their participation in at least two LEESP workshops. The other four teachers did not receive any LEESP training. As mentioned in Chapter 5 (see Section 5.5.2), I interviewed all eleven teachers to enable comparison between the espoused theory of the teachers who were exposed to some training in environmental education, and that of those who did not participate in the environmental education dissemination workshops. While I was interested in comparing teachers' views, the teachers who did

not participate in LEESP workshops were asked slightly different questions, especially with regard to the theory of environmental education. Nonetheless, their perception of environmental education in relation to geography will help to enable an understanding of any possible change in the model schools following the LEESP intervention.

As shown earlier in Table 10.1, out of the eleven teachers, three are not qualified teachers with training in education, even though geography is one of the subjects they studied at university level. The table further illustrates that the teaching experience of the teachers ranges from five to fifteen years of geography teaching. All eleven teachers said that they chose to study geography as one of their teaching subjects at university level because they had passed the geography COSC examination. The data presented in Table 10.1 is useful in terms of providing information on biographical factors that might be enabling or constraining the implementation of environmental education in the model schools. Given their qualifications and experience, I would expect the teachers to have both sound conceptual geography knowledge and procedural knowledge enabling them to interpret and implement the curriculum intentions of environmental education. The literature acknowledges that disciplinary knowledge and teaching experience are among the factors that influence the quality of classroom teaching and the implementation of curriculum innovations (Spillane et al., 2002).

### **10.3. The status of environmental education in the research schools**

In order to determine the status of environmental education in the research schools, I interviewed the teachers to elicit information pertaining to environmental activities going on at their schools, and how learners participated in these activities. Analysis of the interview data from the teachers at the model school and two other schools where dissemination of environmental education was carried out reveals that there are indeed some environmental activities going on in the schools and the communities surrounding them. The teachers at the model school described the existence of environmental education by pointing to the clean surroundings of the school, with its well-managed grass and pavements, and a rockery. In accounting for the neat school

grounds, a geography teacher at this school, who was also head of the department into which geography falls and a member of the school's EE committee, said:

*It has always been the policy of the school to keep the surroundings clean. After LEESP, we made a lot of improvements on our surroundings. (Teacher A)*

These well-managed school surroundings were maintained by regular student activities, which included picking up litter, cutting the grass and watering the flowers. He said the school has an environmental policy that was developed during the LEESP intervention. This policy emphasises the need to promote positive attitudes towards a healthy environment, but without clear guidelines on how this will be achieved at the micro-level of classroom teaching (see Appendix D). He further said that, guided by this policy, an environmental education committee of teachers develops an activity plan, allocating cleaning areas to different classes. According to him this plan is flexible to accommodate learners' suggestions, if any.

The teacher also reported that the functions of the environmental education committee include preparing a budget to be presented to the school administration for the allocation of funds towards the cost of maintaining the school's surroundings. He said such funds are used to purchase or replace tools, and for buying flowers for planting. Another teacher said that the clean and well-managed surroundings at this model school generate some income for the school, as members of the community use them for special occasions such as weddings.

The teachers at this school said that the school sometimes undertakes cleaning campaigns in town, which is just about a kilometre away, as a strategy to raise the level of environmental awareness among the general public. This could provide an opportunity for learners to link what they learn in school with real life in their communities.

The clean surroundings in the model school were reported by a teacher of a neighbouring school as having inspired them in their uptake of environmental education. In describing her first impression about environmental education as disseminated by the model school, the teacher said:

*I was impressed by the clean and beautiful surroundings of ... [mentioning the name of the model school], and thought that if we can join, our school's surroundings will be like that. (Teacher D)*

She added that the model school was not like that before the LEESP intervention, and attributed these changes to what she believed was a high level of environmental awareness among the students of that school. Similar sentiments were voiced by another teacher at the same school, who also said that after interacting with the teachers of the model school during the dissemination workshops she became aware of the need to have a well-managed school environment:

*I was very happy, my colleagues [from the model school] made me aware that I have got to do something about the environment, students should be aware of the environment. (Teacher E)*

Following these dissemination workshops, the teachers said that they established a school lawn and planted flowers in the school grounds.

In another school where environmental education dissemination was conducted by a different model school, the only geography teacher at that school mentioned a tree planting project carried out in the school under the banner of the district Geography Teachers' Association, as a sign of the existence of environmental education in that school.

Although some teachers at the model school attributed the attractive surroundings at this school to behavioural change among the learners, there was little evidence of environmental activities promoting action competence. For example, when responding to a question on whether learners would undertake the activities voluntarily as a learning opportunity, a teacher at the model school said:

*They [learners] only volunteer when they know that other schools will be visiting our school. That's when we will see them taking the initiative to clean up the surroundings and putting up notices for keeping the school's surroundings clean. (Teacher A)*

This response seems to indicate that there was little volunteerism among the learners when it came to participating in environmental activities at this school. In some cases learners are given environmental activities as a form of punishment for coming late to school. During my visits to this model school, just before I started my classroom observations one morning, I saw a group of learners who had come late to school

picking up litter. Explaining this, a geography teacher whom I was going to observe said that they sometimes used this form of punishment as an alternative to corporal punishment, in order to show students that there is a need to contribute something to the community to atone for their wrongdoing.

It was also not clear from the interviews how these activities provide material to geography teachers in their teaching of the subject. Only one teacher said that he refers to the rocks used for decoration in the school's lawn when teaching about types of rocks. There was no mention of promotion of values, such as appreciation of the beauty of the environment and nature conservation as expressed in LEESP policy texts. This may suggest that the geography teachers never reflected critically on why students are engaged in these environmental management activities.

#### **10.4 Integration of environmental education into geography**

As the literature review in Chapter 3 demonstrated (see Section 3.7.1), and as the analyses of the geography curriculum document and textbooks provided in chapters 8 and 9 show, there is a strong environmental dimension in the content of geography. This dimension was acknowledged by the geography teachers whom I interviewed for this study. The data reported in this section is presented under the following themes: geography topics where environmental education is integrated, the value of environmental education in geography and teachers' application of LEESP's concepts in geography teaching.

##### **10.4.1 Geography topics where environmental education is integrated**

All three teachers at the model school, as well as the teachers at the other schools where the dissemination of environmental education occurred, claimed that they integrate environmental education into their teaching of geography. Examples ranged from physical geography (weathering, soil erosion, vegetation, landforms, volcanic eruptions) to human/economic geography (farming systems, tourism, industry, water and energy resources). Soil erosion and vegetation were mentioned by all the teachers as topics in relation to which they emphasise an understanding of environmental

issues. This might suggest that generally the teachers perceive environmental education in terms of natural resources conservation.

Interviews with the teachers at the other schools (control case schools), show that they were at least aware of an environmental component within geography, with some claiming that they emphasise it in their teaching of the subject. One teacher defined geography as a subject concerned with the study of natural features and human influences on the changing character of the physical landscape. He added that geography is about environment, and claimed that he emphasised the environmental dimension in his teaching. Like the teachers at the model school, he gave a list of topics such as geology and geomorphology where he emphasised an understanding of environmental issues, and went on as follows:

*When I teach tectonic movements, I show them how these movements happen and explain their causes and their results such as earthquakes, volcanoes, and draw their attention to recent examples of earthquakes. I make them aware that such things happen. (Teacher J)*

Another teacher from a different school also said that geography has a strong environmental component, and defined the subject as:

*A subject concerned with the physical world, and the interaction between human beings and the physical world, in different ways such as economic interaction, environmental interaction etc. (Teacher H)*

He added that one of its aims is to promote environmental awareness among learners. This teacher, however, confessed that he was not sure whether he was emphasising an environmental aspect of geography in his teaching.

#### **10.4.2 The value of integrating environmental education into geography**

When asked whether environmental education adds value to geography, the teachers' responses were generally affirmative. For example, a model school teacher said:

*Yes, EE adds value to the subject. It makes the subject more practical and real. For example, when teaching soil erosion, EE helps us to show learners that geography is practical and real. (Teacher B)*

This teacher indicated that while she was already aware of the close link between geography and environmental education, her understanding of the nature of geography increased following the LEESP intervention: *“~~There is~~ no geography without environment. However, environmental aspect was clearer to me after LEESP”*.

Another model school teacher suggested a possible change in learners’ perceptions of geography, now seeing it as a practical subject situated within their own experience. She said: *“Yes [EE] does.... My students now see geography as something living and practical”* (Teacher C).

Some of the views expressed suggest that environmental education introduced methodological innovations to the teaching of geography. For example, two teachers described the contribution of environmental education to geography as follows:

*Most of the environmentally related topics are within the experiences of the learners, those things that they can see. When teaching topics such as pollution, I give them opportunity to tell what is happening and give solutions.* (Teacher A)

*It does. It does a lot in the sense that it encourages learners to embark on action which we normally don't pay attention to most of the time. So I think if it could be integrated, learners can apply knowledge.* (Teacher G)

The teachers’ views presented in this section may be seen as highlighting a perception of an increase in epistemological awareness of the nature of geography following the LEESP intervention. As illustrated by the response of Teacher B, LEESP sensitised her to the nature of school geography as a subject having a strong environmental dimension. Pedagogical changes are also implied in the response from Teacher A, above. However, in all cases there was no clear description of characteristics shared between geography and environmental education. This might suggest that although the teachers are aware of an environmental dimension to geography, their understanding of environmental education is still not clear. Perhaps this could be a result of deficiencies in the dissemination workshops which, as reported in section 7.7.1, were somewhat rushed in order to cover a dense programme. Carl (2002)

identifies effective dissemination as one of the conditions for successful implementation of intended curriculum change.

### **10.4.3 Application of the LEESP key concepts**

In an attempt to arrive at a fuller understanding of how teachers at the model school were implementing LEESP ideas, I asked them questions on their application of two key concepts introduced by the project, namely *action competency* and *conflicting interests*. None of the teachers could explain what they understood by action competence, let alone tell how this concept informed their work as geography teachers<sup>5</sup>. However, one teacher indicated that he thinks he is making an effort to promote an understanding of conflicting interests in teaching human geography topics such as settlements.

The fact that the teachers generally could not explain how they applied action competence corroborates an observation I made in a workshop organised by the Development and Partnership in Higher Education (DEIPHE) project, for former environmental education coordinators of the LEESP model schools. Most of the workshop's participants had difficulty in describing teaching/learning scenarios in which they attempted to promote action competence. This may suggest that the concept of action competence was not well understood even by the teachers who were expected to play a leading role in disseminating environmental education to other schools. It could also suggest that the teachers never bothered to use the concept, probably because they found it incompatible with their knowledge structures and specific school contexts (Spillane et al., 2002). In view of this finding, the extent to which the LEESP's philosophy of action competence has influenced classroom practice in the model schools is questionable. Walker (1997) argues that implementing socially critical environmental education underpinned by action competence is too demanding for many teachers.

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<sup>5</sup> I note however that the teachers could have been using action competence without being aware of and being able to define it.

## 10.5 Teachers' views on teaching and learning

It is acknowledged in the literature that curriculum change depends on teachers' views on teaching and learning. For example, Prawat (1992) argues that while teachers are on the one hand viewed as important change agents in curriculum reform, they are on the other hand seen as ~~major~~ major obstacles to change because of their adherence to outmoded forms of instruction that emphasise factual and procedural knowledge at the expense of deeper levels of understanding" (p.354). In this section, I present data on teachers' views concerning good teaching, the role of the teacher and the role of the learner in pedagogic interaction. I prefer to use the word views to refer to epistemological beliefs about teaching and learning. This was the key word used during my interviews with the teachers, instead of epistemological beliefs.

### 10.5.1 Teachers' views on good teaching

Analysis of the interview data shows that teachers' views about pedagogy generally support the learner-centred approach. The following are examples of how they described good teaching:

*Good teaching, according to me, is one that involves children, where as teacher I would give instruction and guiding them, where my role would be to facilitate... Actually, in geography, for students to understand there is need for them to be fully involved and participate. If they have to touch some materials they should be given opportunity to use concrete materials and construct materials. (Teacher A)*

*I think there should be a two-way communication. There should be a teacher talking and the learners as well... [So] when I introduce a new topic I first ask probing questions to find out whether the students know something about what I am going to teach. (Teacher B)*

Although these views may be seen as supporting a learner-centred pedagogy, they are leaning more towards the practical knowledge paradigm and less towards the critical paradigm supporting the notion of emancipation envisaged in the LEESP programme. While the above responses may reflect a perception of playing a facilitatory role, there is no clear indication of espousing teaching strategies that encourage learners' voluntary participation, which is a typical feature of a critical paradigm. Even though the word *participation* is mentioned by Teacher A, learners are expected to participate

in compliance with the teacher's instruction. Moreover, in the case of Teacher B, while her description of good teaching as "two-way communication" indicates an intention to encourage dialogue, it becomes evident in her elaboration that learners' involvement is construed in terms of responding to the teacher's questions.

A different view, reflecting the speaker's interest in transformative learning, was unexpectedly expressed by a teacher with no background in pedagogy (see Table 10.1). This teacher described good teaching as follows:

*Good teaching is characterised by a situation when students can draw their own conclusions at the end [of the lesson], not that they should be told to plant trees here because there is soil erosion. (Teacher D)*

Does this view, coming from a teacher without a formal background in the science of teaching and learning, illustrate a response learned from experience, or from interaction with teachers from the LEESP model school?

When asked whether their views about good teaching were the result of their involvement in LEESP dissemination workshops, two teachers at the model school indicated that they had held similar views before the LEESP intervention. The following extract is a response given by a teacher who was also a member of the school organising committee for LEESP activities:

*No, I have always been having this view. EE[LEESP] only strengthened my thinking about teaching. (Teacher A.)*

Another teacher said that she was not sure of the extent to which her teaching had been influenced by the LEESP environmental education dissemination workshops, but claimed that she was integrating environmental education into geography.

The responses given by these two teachers at the model school may suggest that their views about teaching and learning could be the product of their initial teacher education and their long teaching experience, as shown in Table 10.1. While teachers' prior knowledge is useful in implementing a new curriculum policy, their claim that they had the same ideas about teaching prior to the LEESP intervention may be interpreted as reflecting the natural tendency to view new curriculum ideas as minor variations of what is already known and practised (Spillane et al., 2002; Blignaut,

2008). In Chapter 11, I will establish whether the teachers' personal theories about teaching converge with what they do in practice.

### 10.5.2 The role of the teacher

Generally, the teachers – including those who did not receive training in environmental education – described their role as that of a facilitator, with most of them using the word “facilitate” in their description. This was the standard response from teachers with a professional teaching certificate. When asked what she actually meant by assuming a facilitatory role, a teacher from a control case school said:

*My role is to facilitate teaching. That's my role. I facilitate in the sense that I don't always give learners information. I am expecting them also... you know ... to contribute, say what they know or even work together to find information. For instance, when building a concept of soil, I will not give learners a definition. I am expecting them to tell me what they know. Then thereafter we can consolidate that information to come up with a common definition. In that way I am facilitating not spoon-feeding. (Teacher G)*

This extract, consonant with commonly expressed views about good teaching (see Section 10.5.1) can be described as a practical view of teaching and learning because of the teacher's interest in encouraging learners to contribute and find information. A different view, supporting a technical knowledge interest, was expressed by another teacher from the model school: “*there is a good teaching if students can remember what they have been taught*” (Teacher C). I noted a similar technical view, though reflecting some aspects of a practical knowledge interest, from a control case school teacher:

*My role is.... I teach by **telling** them. After **telling** them, I encourage them to go and observe on their own what I **told** them. I expect them to observe geographical features [referring to river landforms] on their way home.... (Teacher J)*

### 10.5.3 The role of the learner

It was evident from the interviews that most teachers are in favour of the active involvement of learners. They mentioned learners participating in class discussions, finding information on their own, and solving environmental problems, which could be associated with enquiry learning. When elaborating on how they implemented

learner-centred methods in their teaching, they generally said that they used group discussions, outdoor learning activities and other inquiry-oriented methods such as finding information from the internet. In supporting the use of learner-centred methods a model school teacher stressed the following point:

*In actual fact, in geography for students to do well they should participate, manipulate things..... It's [geography] all about environment, we are not teaching abstract things, although there are certain topics which are abstract.*  
(Teacher A)

This extract reveals the teacher's epistemological belief about school geography, which appears to be shaping his pedagogical practice.

Interestingly, none of the teachers described the role of the learners in terms of an emancipatory knowledge interest, in terms of which learners would be encouraged to embark on action to resolve environmental problems or to sensitise other people to environmental issues. As shown in Chapter 9, the textbooks used in these schools feature some activities that create learning contexts for learner empowerment. I would have expected that teachers who participated in the LEESP workshops would have noticed the opportunities offered by the textbooks, and indeed by the syllabus as a whole, and espoused teaching approaches consistent with emancipatory knowledge interests.

### **10.6 Teachers' reflective practice**

In an attempt to understand how geography teachers in the model school were making sense of the pedagogic ideals of LEESP, I asked them to identify aspects of their teaching that they liked and disliked, and where they would want to make improvements. I asked a similar question, but without a focus on LEESP, in the other schools. For all the teachers, including the three from the model school, this proved to be the most challenging question. I had to employ probing techniques to elicit information. One model school teacher, after probing, still struggled to reflect on his practice: "*Mmm.... Well what I like is seeing my students getting higher symbols in geography*" (Teacher A).

I tried to get him to refocus his response by asking him to describe experiences of teaching that he had enjoyed. Even before I could finish probing he said:

*Oh... Okay, I like teaching map reading because it involves practical activities which do not require me to work hard in preparing and looking for what I set as activities, [in map reading] the activities are already there. (Ibid.)*

Even this response (an expression of personal preference evincing distaste for hard work) does not really answer the question. This teacher did not give any response to the question about what he did not like.

Another teacher from the model school responded as follows:

*I like my approaches to the students concerning the topic. For example, when I introduce a new topic I first ask probing questions to find out whether the students know something about what I am going to teach. (Teacher B)*

The teacher's interest in asking probing questions when introducing a lesson may suggest that she espouses a learner-centred kind of teaching that takes account of learners' prior knowledge. This resonates with the LEESP's conception of learner-centred pedagogy. However, this teacher was also not able to identify any aspects of teaching she did not like, nor any areas where she would want to make improvements.

The third teacher was more elaborate in her reflection, even though her response came only after probing:

*[with laughter]... I think... I am not sure if I would be responding to your question. When I am teaching I have noticed that students are able to participate, answer and ask questions. I become happy when I see that behaviour, and know that they have understood. But if when you teach and give instructions, you find that they are just watching you and surprised, you try other strategies they don't talk. Then you know that you have not achieved what you wanted to do. I don't know if I have answered your question. ... You know... what I don't like is writing notes, but I find myself **forced** to give them notes, especially at Form C level. (Teacher C)*

Unlike the other two teachers who could not describe aspects of their own teaching they did not like, this teacher seemed to be aware of a tension between her espoused theory of teaching and examination requirements. It should be noted that the Form C class level is the 3<sup>rd</sup> year level of junior secondary education, after which learners write an external examination. Being forced to give notes at this class level may reflect the teacher's sense of obligation to prepare learners for examinations, thus illustrating the power of external examinations to dictate classroom practice.

Another teacher from a different school which did not participate in LEESP workshops expressed similar sentiments about giving notes: “*What I don’t like, and no longer do is giving [learners] notes....*” (Teacher J).

Explaining why he no longer provided notes, he said that the learners used to get high scores in the final examination. But compiling the notes used to take up a lot of his time, while the students took no responsibility to read on their own. This apparently reflects the teacher’s interest in inquiry-based teaching, as opposed to didactic methods, and is out of line with the aspirations of most teachers, as reported in the literature. For example, Yeung (2002, p.251) notes that:

For many teachers, the need to achieve good passing rates and hence status in the staff room [and among parents] means that they could only teach didactically in accordance with the needs of the examination.

The response of teacher A, quoted earlier in this section, seems to confirm that most teachers would like to see their students doing well in the final examination. Teacher J’s assertion that he had abandoned the practice of giving notes (which had proved to be effective in terms of his students passing the exam) and adopted an untested alternative approach seems questionable. It could be that the teacher wanted to tell me what he thought I would like to hear, as a university lecturer with a strong investment in constructivist approaches.

It is clear from the data reported in this section that the teachers had difficulty in identifying aspects of their teaching they liked most or disliked, which suggests that they may never have critically reflected on their own teaching practice. This casts a shadow on the prospects for realising transformational visions of environmental education, underpinned by critical pedagogy, at the level of classroom practice.

### **10.7 Contextual factors constraining implementation of environmental education**

Following Cornbleth (1990), I acknowledge that curriculum as a contextualised social process exists within practice and is shaped by contextual factors operating from within and beyond the school and classrooms. As such, teachers interpret and implement a new curriculum policy within the specific contexts of a school

organisational structure, school environment and history (Spillane et al., 2002). In order to understand the context in which geography teachers are attempting to implement environmental education within the geography curriculum, I explored relevant contextual factors. Analysis of the interviews reveals that while the teachers recognised the opportunities offered by certain aspects of their school contexts, such as the rich physical environment for the direct observation of environmental concepts and issues, and facilities such as the internet, they identified more constraining than enabling factors. The teachers mentioned the following as major constraining factors: the pressure to cover the examination syllabus, learner factors, the absence of a general understanding of and commitment to environmental education, and an unsupportive school administration.

### **10.7.1 Time pressure to cover the syllabus**

Analysis of the interview data shows that the pressure to cover what some teachers described as a highly overloaded syllabus imposed a serious constraint on their efforts to try out the learner-centred teaching methods recommended by LEESP. In expressing her frustration regarding learner-centred methods, a teacher at the model school said:

*...you know in geography the syllabus is too broad so we have to hurry through it rather than teaching. Learner-centred methods require a lot of time.*  
(Teacher C)

In describing her first impressions of implementing environmental education in geography, a teacher at another school was also concerned with time pressure to cover the syllabus:

*I felt there would be more demands... especially when I had to finish the syllabus... If on the one hand, I have to take learners out for environmental activities, and I have to finish the syllabus, on the other hand. Taking them out of the classroom, would be more time-consuming than when I confine my teaching to the classroom. That would change my ways of teaching. (my own translation, Teacher D)*

There is thus a clear tension between the requirements of learner-centred pedagogy and the need to cover the examination syllabus within a specified period. The only way to resolve it appeared to be compromise: the teacher said she thought it would be

best to try out what could work out for her, but otherwise continue with her usual teaching approaches. She added:

*I felt I could still be flexible and make my own decisions [on how to implement environmental education ideas] (ibid.).*

This perspective, while implying some resistance to change, also suggests that the teacher regards herself as a curriculum recontextualiser capable of making autonomous decisions based on specific contexts.

While the teaching approaches introduced by LEESP were seen by many teachers as being problematic given the examinable syllabus requirements, another teacher saw them as having a potential to resolve the tension between application of learner-centred methods and need to cover the syllabus:

*I liked teaching approaches introduced [by LEESP] during the workshops. Like I said, the approaches were learner-centred. What happens is that every year when Form C students are to write final examination we complain that we have not finished the syllabus. So there was this approach which was... very... which incorporates many subjects. It was like story telling approach, which would be applied in different subjects covering certain parts, focusing on syllabus requirements for different subjects. That helped us to work together and help each other. (Teacher A)*

The story line approach that this teacher referred to, as used during the LEESP workshops, took a form of an integrated approach in which geography topics could even be taught in other related subjects. The teacher continued:

*It [story telling approach] was useful to me because previously [prior to LEESP intervention] I used to work only with agriculture and science teachers, knowing that there is more geography related content from science and agriculture. (ibid.)*

It is clear from this response that the teacher had not previously seen any relevance in other subjects, with the exceptions of agriculture and science. Since the LEESP intervention, however, he claims to have collaborated with a number of teachers of other subjects. When teaching *trade and industry*, for instance, he consults with the business education teacher; or when teaching *lumbering*, with basic handcrafts teachers and home economics teachers. This consultation with other subject teachers may reflect a new understanding of geography as a subject that can benefit from a broader cross-curricular approach. It also reflects the value of collaborative work within a wider ‘community of practice’ (Lave & Wenger, 1991) in dealing with the

problem of what the teacher describes as an overloaded syllabus. Such collaborative work can create an enabling social context in which teachers support one another in their sense-making and enactment of the new curriculum ideas, introduced via environmental education. McLaughlin (1998) reports research findings that indicate the value of teachers' learning communities in helping them to develop new knowledge and understanding of their classroom practice.

In explaining the implications of applying the "story-line" approach, introduced by LEESP, the teacher expressed the view that the approach could not easily be implemented in his school because it was difficult for teachers to plan together across the school's subjects. He said he preferred to consult with other teachers, rather than collaborate, in order to be aware of what the learners had learnt in other relevant subjects. He saw this as helping him to identify geography topics where he could just revise with the learners in order to save time for other more demanding topics. Thus consultation was helping him to cope with the pressure of time to finish the syllabus. He expressed reservations about relying entirely on teachers of other subjects, because he did not believe that they could emphasise a geography perspective in the way he would want them to. This feeling reflects an interest in retaining geography disciplinary boundaries by emphasising specialised knowledge and appropriate subject matter to meet public examination standards. Thus, although the teacher said he liked the story line approach which could enable a thematic approach, his view of geography was ultimately at odds with LEESP's idea of an integrated approach.

### **10.7.2 Learners' factors**

Referring to the work of Doyle, Cotton (2006, p. 78) points out that "pupils responses to the teachers' strategies...may constrain teachers' ability to make radical changes". In the case of this study, factors pertaining to learners, such as difficulty with the use of the English language, which is the medium of instruction in secondary schools in Lesotho (see Chapter 2), and cognitive learning problems, were reported to inhibit the effective use of learner-centred methods identifiable with the constructivist approach espoused by LEESP. In responding to the question on the challenges faced, a teacher

at the model school said: *“Students have a problem of expression. So in grouping them I mix them so that they can benefit from the discussions”* (Teacher C).

This reflects an assumption that learners learn best in heterogeneous groups, which have the potential to promote cooperative learning. Another teacher from a different school said that her students enjoyed listening rather than thinking. She therefore tries to involve learners in interesting activities, and referred to an E-box game (a game used by LEESP as a strategy to encourage an awareness of environmental issues) introduced to her by the model school during dissemination workshops. But even with activities of this sort, language problems are such that some students prefer to keep quiet. Another teacher said that in responding to the problem of difficulties encountered with the use of English, she sometimes reduces the lesson to an informal discussion by allowing learners to code-switch from English to Sesotho.

Similarly, a teacher from a school that did not participate in LEESP’s workshops, also reported facing learner-related challenges with the use of learner-centred methods. He expressed a concern that some learners are reluctant to engage in discussion, probably because of shyness. He further said that he employs counselling techniques in responding to the problems of learners who won’t join in:

*Some learners are left out. There are also those learners who can’t talk. You end up getting confused as a teacher, asking yourself a question: what is the problem about this student? I have to be very careful lest I frustrate the learner. Sometimes I talk to the student outside the classroom trying to find whether he/she minds to talk in class. If she or she does not have a problem talking in class, then I take it from there.* (Teacher H)

The assertion that *“there are some learners who can’t talk”* in the extract above resonates with a response given by another teacher, who said that some students are shy to talk while others enjoy listening rather than thinking. This problem was recurrent in the responses. Why are some students reluctant to talk in class? Why do they prefer listening? This could be due to the cultural background of young learners in Lesotho. As is the case in many other African countries, child-rearing practices encourage children to be passive, especially in their interaction with adults (Tabulawa, 1997). Thus the need to encourage learners to engage in conversation with teachers seems to be in conflict with the local culture.

The tendency of learners to enjoy listening to the teacher, rather than engaging in discussion, could also be explained in terms of the traditional function of schools in Lesotho, which was to mould children according to norms and values for the purposes of cultural reproduction (see Section 2.4.1). It could also be that many children come to school with an expectation of its being a place where they are going to learn new knowledge from the teacher, rather than finding themselves at the centre of instruction. Reflecting on the social context of curriculum change in Botswana, Tabulawa (1997) argues that the authoritarian Tswana culture, reinforced by authoritarian colonial education, is orientated against progressive new ideas of learner-centred pedagogy. He also reports research findings suggesting that learners generally come to school with utilitarian expectations of education. They see their primary task as receiving teachers' knowledge" (ibid., p. 200). In this regard, following Cornbleth (1990), I note that changing the curriculum requires changing the broader context within which education is provided.

### **10.7.3 Lack of common understanding and commitment among implementing agents**

A model school teacher, who was a member of the school's environmental education committee, expressed the view that when environmental education was first introduced in his school, there was a lack of understanding of its role and a lack of commitment to its implementation among some teachers and the school administration. He described this as one of the frustrations he experienced in his initial sense-making of environmental education:

*There was that frustration because when we work as teachers with different perceptions of how the subject should be taught. There is a problem because we have to plan together. We have to discuss how we are going to teach a certain topic. But if we don't have a common understanding of EE it was difficult to plan together. ... There was a problem of understanding what this EE really was, and I would not say we were all agreeing that we were going to implement it. What was happening is that we have not been fully committed to buying in. The administration was pulling in another direction. It was after some time that we realized that this thing [EE] was important. So we as teachers did not buy into it at the same time...yes... it was an individual thing. That was frustrating to me. (Teacher A)*

The initial lack of commitment on the part of the school administration at this school was also reported by a geography subject specialist at the National Curriculum Development Centre (NCDC), who participated in LEESP activities as a member of the Task Team which ran capacity-building workshops in the model schools.

The teacher also identified a lack of cooperation and commitment among teachers as an impediment to the use of fieldwork in geography:

*Another challenge is when you have to conduct field trips. You will find that teachers of other subjects don't cooperate. Some would complain that "oh you are going to take our time..."! (ibid.).*

Although it may be problematic to make claims on the basis of data from one respondent, the response of this teacher nevertheless illustrates the point that the sense-making of new curriculum ideas depends on the commitment and collaboration among the implementing agents as an important aspect of the social context (Spillane et al., 2002). Some teachers, as reported in this interview extract, were not prepared to bargain for the time to create space for field trips.

#### **10.7.4 Administrative constraints**

Lack of support for field trips from administrative structures within and beyond schools was identified as a barrier to the effective implementation of environmental education. In one school, a teacher expressed his frustration as follows: *"We also have a problem with Ministry of Education"* (Teacher A). He added that a district education officer emphasised in one meeting with the teachers in the district that teaching mean, *"teacher-chalk-child in class teaching"*. According to the teacher, through this statement the education officer was clearly discouraging them from using fieldwork. This reflects a feeling of powerlessness on the part of the teacher with regard to implementing teaching strategies encouraged by LEESP.

At another school near to the model school, the two teachers I interviewed felt that the school administration was not supportive enough of their efforts to implement environmental education. Comparing the status of environmental education in her

school with that of the model school, one of these teachers said that they had not made much progress because of apparent resistance on the part of the administration, which manifests itself in reluctance to fund their environmental projects. She cited an instance where they had to abandon their school environmental management project because there were no funds forthcoming.

## **10.8 Conclusion**

The purpose of this chapter was to investigate the geography teachers' interpretation of environmental education curriculum policy in relation to the teaching of school geography. The data illustrates that majority of the teachers who participated in this study are qualified geography teachers with a reasonably long teaching experience. Their qualifications and experience could put them, especially those at the model school, in a better position to implement EE within geography. It has also emerged that the geography teachers, including those who did not attend the LEESP's workshops, generally recognised and understood environmental education as an integral part of school geography, with the potential to enhance the quality of the subject. The data further shows that all the six teachers at the model school and neighbouring schools claimed that they were integrating environmental education into geography teaching, with some explaining that their epistemological awareness of geography increased after the LEESP's intervention.

Although these teachers reported that they were implementing environmental education, their description of its existence in their schools reflects a narrow understanding of environmental education as environmental management. They mentioned clean surroundings, planting grass, flowers and picking up litter as indicators of environmental education activities. They reported little evidence of the existence of environmental education in the formal curriculum or classroom practice.

With respect to pedagogy, there was not much difference between the responses of the teachers who received LEESP's training and those who did not. Analysis of the teachers' views of teaching and learning suggests that they generally support a learner-centred pedagogy, viewing their role as facilitators. They claimed that they used learner-centred methods such as group activities, encouraging learners to find

information for themselves, thereby claiming that they were knowledge facilitators rather than knowledge transmitters. However, their views of learner-centred pedagogy were generally situated in the practical paradigm, with little evidence of support for emancipatory knowledge interests or pursuit of the vision of action competence.

This chapter has also presented data on contextual factors that the teachers perceive to be enabling or constraining their implementation of environmental education. While some teachers saw opportunities offered by their specific school contexts, they also reported a number of inhibiting factors operating from within and without the classrooms and schools. Some of the factors reported include learner-related problems, such as difficulty with the use of English and shyness, which constrain the implementation of learner-centred methods underpinned by action competence. Undue external control on the education system exercised through public examinations was also reported as exerting pressure on many teachers. Other factors impeding the implementation of environmental education reported by some teachers include a lack of supportive structures, both within the school and within the ministry of education.

In view of the findings reported in this chapter, it would seem that the process of curriculum sense-making is mediated through teachers' constructs (their knowledge structures and beliefs), contexts and policy signals (Spillane et al., 2002). How these play out at the level of classroom practice is explored in the next chapter, to help develop a deeper understanding of curriculum reform.

## **CHAPTER 11**

### **ENACTMENT OF ENVIRONMENTAL EDUCATION IN GEOGRAPHY CLASSROOMS**

#### **11.1 Introduction**

In Chapter 10, I reported data on the views of geography teachers regarding their interpretation of environmental education curriculum innovations in relation to school geography. The chapter explored their understanding of environmental education as conceptualised in LEESP, their views about teaching and learning, as well as contextual factors affecting their implementation of environmental education. Whether or not their espoused theories about teaching and learning with respect to geography and environmental education converge with their classroom practice is an interesting question to explore. In this chapter, I analyse classroom observational data with the aim of understanding what geography content is taught in the research schools and how the subject is taught. My interest lies also in understanding how geography teachers may be responding to the implementation problems posed by the contextual/structural factors described in Chapter 10 (see Section 10.7).

Given that curriculum enactment is a complex process (Spillane et al., 2002), I do not adopt the technical view that teachers are mere implementers of new curriculum plans. I recognise that they are curriculum decision-makers (or recontextualisers), capable of appropriating and applying new ideas to their specific contexts. This is particularly relevant to my study, as the intention was not to make quantitative judgements about the achievement of LEESP. Instead, I sought to understand the processes of curriculum sense-making and enactment as influenced by the realities and complexities of schools and classrooms in Lesotho. I first provide contextual profiles of the five schools where I conducted classroom observations. This is followed by an analysis of knowledge integration in the geography lessons, where I explore the relations between environmental education and geography, and relations between geography and other subjects in the school curriculum, as well as with the everyday knowledge of the learners. Finally, I consider the structure of pedagogy in the thirty-seven (37) lessons that I observed for the purpose of this research.

## 11.2 Contextual profile of the research schools

In order better to understand how teachers are enacting environmental education principles in their daily classroom practice, I present data on school contexts highlighting possible favourable and constraining factors. Table 11.1 presents demographic information about the research schools. As mentioned in Chapter 5 (see Section 5.4), I use pseudonyms to conceal the identity of the schools.

**Table 11.1: Demographic information about the schools**

Name of the school	Total number of geography teachers	Total enrolment (estimates)	Type by area
Menkhoaneng High School	4	1000	Urban
Mohokare High School	3	600	Urban
Qiloane Secondary School	1	200	Rural
Lepoqo High School	5	1000	Urban
Letlama High School	2	550	Rural

### 11.2.1 Menkhoaneng High school

This is one of the Lesotho Evangelical Church's biggest high schools in the country. It is about 150 kilometres from the city of Maseru where I reside. It is located in a small town of Botha-Bothe, which has an Indian community engaged in retail businesses. As such, there are some Indian learners in this school, but they speak Sesotho fluently because they and their parents are generally born in Lesotho. It is a combined school, with three class levels (Forms A, B, and C) at junior secondary level, and two other senior class levels (Forms D and E). Menkhoaneng High School is one of the best performing schools in Lesotho in both Junior Certificate and \_O Level examinations. This may place it in a position to compete for primary school leavers with other schools from all over the country.

It offers boarding facilities for both boys and girls. The learners come from local feeder schools and schools from other districts, with many of them having a rural background. According to the information I got from the principal, most students at the school come from poor families, with some paying fees out of government social grants. As is the case in all the schools I visited for this research, book provision for

all learners, at junior secondary level, has been made possible through the government Textbook Book Rental Scheme. While this scheme may have made the work of teachers less challenging, a geography teacher in this school complained about students not having an atlas, as it is not covered under the provisions of the scheme. This crucial absence could impair the quality of teaching and learning in geography as a subject concerned with the spatial distribution of phenomena, including environmental issues (see Section 3.7.1).

At the time of my visits to this school there were four geography teachers, but I worked with only three of them because the fourth was a newly recruited graduate from the university, who had not participated in LEESP workshops. The average workload for the teachers was 28 lessons per week, accumulated from geography and other teaching subjects. As is the case with most schools in Lesotho, the teachers teach different class levels and also share streams for the same class level, which creates opportunities for collaborative work. The fact that two different teachers may teach geography in different streams at the same class level enabled me to observe different teachers teaching the same topic.

As noted in Chapter 2 (see Section 2.6.1.2), consistent with curriculum policy in Lesotho (Ministry of Education, 1982), geography is allocated five lessons per week at each junior secondary class level, which may have a bearing on the application of learner-centred methods and outdoor learning. Each lesson, as in other schools, is 40 minutes in duration. However, the school time-table makes provision for double lessons lasting for 80 minutes. I observed a number of such lessons.

The school has enough classroom facilities and a science laboratory used almost exclusively by science teachers. It does not have a special room for teaching geography, and as such the subject is taught in a conventional classroom where the seating arrangement reflects the traditional culture of classrooms in Lesotho. Learners are seated in rows facing the teacher's desk (see Figure 11.1).



**Figure 11.1: Classroom seating arrangement**

The class size ranges from 47 to 55 learners per stream. All classrooms are electrified and have a chalkboard in front of the class. In some classrooms there are storage facilities such as filing cabinets, where teachers can keep their teaching materials. The school does not have internet connectivity, thus denying learners an important means of access to current information about environmental issues.

The school is surrounded by a village with both rural and urban characteristics, and some shacks on the western side near the town. These surroundings provide opportunities for teaching and learning about environmental issues within the immediate neighbourhood of the school.

### **11.2.2 Mohokare High School**

This is also an urban school found in the immediate neighbourhood of Menkhoaneng High School. The Anglican Church of Lesotho is its sole proprietor. As shown in Table 11.1, the school has a fairly large student population, most of whom come from local feeder schools. In my discussion with the school principal it transpired that the learners enrolling in this school have not necessarily performed well in the Primary School Leaving Examinations (PSLE), as the school does not have strict selection criteria. He also informed me that most students are from a poor family background, with many learners being orphans and supported by government social grants. He

explained that the situation is exacerbated by HIV/AIDS and the retrenchment of Basotho men from the South African mines which, as noted Chapter 2, are generally seen as key development challenges in Lesotho. The poverty of the learners was reported by the school principal as causing delays in the payments of fee. He added that this was the case even for those whose fees are paid from government grants. This naturally has an effect on the school's ability to provide resources to support the implementation of environmental education. The two teachers at this school reported in an interview that their efforts to implement environmental education were frustrated by this lack of financial resources, and blamed the school administration for this (see Section 10.7.4).

Unlike Menkhoaneng High School, this school has an internet facility. At the time of my research in this school there were 18 computers with internet connectivity. These computers were acquired through an information and communication technology (ICT) school network in Lesotho. Other relevant facilities include a science laboratory, which was for use by science teachers exclusively.

Behind the classroom blocks there is a forest with big exotic trees. This was used mainly as a source of firewood for cooking in the school kitchen. The forest could also provide opportunities for outdoor learning for geography topics. Like Menkhoaneng High School, this school is just about a kilometre away from a busy part of the town where there are environmental issues such as littering and noise pollution (loud music) from the taxi rank and the shops.

### **11.2.3 Qiloane Secondary School**

As shown in Table 11.1, this is a very small rural school in terms of student population. It is also a church school owned by the Lesotho Evangelical Church. It is located in the Beria District near another school which was a LEESP model school (but not offering geography at junior secondary level). The school is surrounded by green vegetation, consisting of exotic trees near the school buildings, and grass and indigenous shrub covering a mountain about 2 kilometres away (see Figure 11.2).



**Figure 11.2: The physical environment around Qiloane Secondary School**

This rich physical environment offers opportunities for the direct observation of vegetation in the neighbourhood of the school. Perhaps it is also useful to mention that the school is not far away from *Thaba-Bosiu*, which is an important historical site in Lesotho. This historical site could be used for field studies intended to promote values such cultural heritage.

#### **11.2.4 Lepoqo High School**

This school did not participate in LEESP activities as a model school. Nonetheless, as indicated in Chapter 5 (see Section 5.4), I chose to do classroom observations at this school in order to understand how geography teaching in the model school and two other schools compares with what is happening in other schools that did not receive LEESP training.

This is a government-owned school, located in the densely-populated city of Maseru where there are numerous environmental issues affecting the economic and social life of people. The school is fully funded from the government budget under the Ministry of Education and Training (MOET). While this could be seen as an advantage in terms of acquiring teaching resources and funding environmental education activities, the principal expressed frustration over the tardy release of funds by the government. Nevertheless, the school has adequate facilities which include the internet, though the connection rate is low. The internet facility is shared between senior students

registered for ICT, and other students who would only use it as a learning support facility.

As can be seen from Table 11.1, this is also a big school in terms of student enrolment. Like Menkhoaneng High School, it provides boarding facilities for both boys and girls, who come from different parts of the country. Although the majority of learners at this school come from poor family backgrounds, a significant number of them are from middle-class families, particularly those of government officials and bureaucrats. This puts the school in a better position to deal with challenges such as the language difficulties, reported by teachers at other schools as an impediment to the effective use of learner-centred methods (see Section 10.7.2). It is one of the best performing schools in public examinations. Because of this, and given that the fees are extremely low, the demand for admission is very high. This puts the school in a position to select the cream of the applicants from primary schools. In my discussion with the school principal, he said in 2009 only there were over 1000 applicants with first class passes, of which many were ranked as top 10 students according to the PSLE examination standards. The excellent performance record of this school could create pressure among teachers to teach for examinations, as opposed to teaching for learning.

At this school, geography was taught by five teachers, of whom three were able to create time for me to do the research. The other two teachers were busy with their external classes as my visits coincided with the time when examinations were approaching (October, 2009).

#### **11.2.5 Letlama High School**

This is a typical rural school without electricity. There is generator used for essential services such as a photocopying machine. The school is located on the outskirts of Roma, about 15 kilometres from the National University of Lesotho, where I work. I chose this school because of its proximity. The school has large grounds, used mainly for agricultural practical projects. This provides opportunities for collaboration between geography and agriculture teachers when the former are teaching topics

relating to farming. The school is surrounded by hills with a variety of indigenous vegetation and rocks, which could be used for direct observation in teaching environmental concepts and issues in geography.

There are three geography teachers at this school, of whom two agreed to participate in this study. The school is a church school governed through a bureaucratic structure of the Lesotho Evangelical Church. As a church school, Christian religious values are emphasised through a prayer service conducted every morning before classes start. On a visit to this school, I observed a prayer service led by a parish authority. This service lasted for about 30 minutes, and as a result classes started slightly late.

Students enrolling at this school are mainly from the local area, with a rural background. At the time of my research there was no feeding programme at this school. Learners who lived nearby could therefore go home for lunch. This was reported by the principal as disrupting afternoon lessons, as learners are often late, with some not coming back at all.

Having described the specific contexts of the research schools, I now present data generated through lesson observations. As indicated in section 11.1, I analyse these data according to two broad themes, namely knowledge integration in geography lessons and framing of pedagogy.

### **11.3 Knowledge integration in geography lessons**

As indicated in Chapter 5 (Section 5.6.3), I used Bernstein's (1996) concept of classification to analyse the content of the lessons in terms of knowledge integration. A brief description of the coding system will nevertheless be useful at this point. In terms of the principle of classification, *strong classification* (C+) means there are no explicit relations between geography and environmental education, and *weak classification* (C-) denotes the presence of relations between the two, made possible by weak or permeable geography disciplinary boundaries. C++ and C-- then indicate *very strong classification* (very low level of integration) and *very weak classification* (very high level of integration) respectively. For this analysis I used the analytical tool shown in Appendix E to highlight relations between environmental education and

school geography, interdisciplinary relations and relations between geography content and everyday knowledge (inter-discursive relations). Table 11.2 presents an analysis of the lessons in terms of these theoretical categories of classification.

**Table 11.2: Knowledge integration in geography lessons**

Teacher and lessons observed		Analytical categories and coding		
		EE integration	Interdisciplinary Relations	Inter-discursive relations
<b>Category A: Model school</b>				
Teacher A	Lesson 1 : <i>problems of soil erosion</i>	C- -	C+	C+
	Lesson 2: <i>Vegetation</i>	C- -	C-	C-
	Lesson 3: <i>Water/Hydrological cycle</i>	C- -	C--	C++
	Lesson 4: <i>uses of water and pollution</i>	C--	C++	C--
Teacher B	Lesson 1: <i>processes of physical weathering</i>	C+	C++	C+
	Lesson 2: <i>problems of tourism</i>	C-	C+	C-
	Lesson 3: <i>problems of soil erosion</i>	C- -	C+	C++
	Lesson 4: <i>Types of vegetation</i>	C- -	C-	C--
	Lesson 5: <i>weathering</i>	Data inadeq.	Notes giving	Notes giving <sup>6</sup>
Teacher C	Lesson 1: <i>River landforms</i>	C-	C+	C-
	Lesson 2: <i>River drainage patterns</i>	C+	C++	C++
	Lesson 3: <i>Lesotho Highlands Water Project</i>	C+	C++	C++
<b>Category B: Neighbouring schools</b>				
Teacher D	Lesson 1: <i>Crop farming</i>	C-	C-	C-
	Lesson 2 : <i>Growing of maize</i>	C-	C+	C--
	Lesson 3: <i>Vegetable Farming</i>	C- -	C+	C- -
	Lesson 4: <i>Problems facing urban settlements</i>	C--	C+	C+
Teacher E	Lesson 1 : <i>Wind erosion</i>	C-	C++	C+
	Lesson 2 : <i>Methods of Farming</i>	C-	C+	C- -
	Lesson 3 : <i>Commercial farming</i>	C+	C+	C+
	Lesson 4 : <i>Tectonic movements</i>	C+	C++	C++
	Lesson 5 : <i>Land features resulting folding</i>	C++	C-	C++
Teacher F	Lesson 1 : <i>Soils</i>	C+	C++	C+
	Lesson 2 : <i>Water resources</i>	C- -	C+	C+
	Lesson 3 : <i>Vegetation</i>	C--	C+	C- -
	Lesson 4 : <i>Uses of vegetation</i>	C- -	C-	C-
	Lesson 5 : <i>Factors influencing air temperature</i>	C+	C- -	C++
<b>Category C: Control case schools</b>				
*Teacher G	Lesson 1: <i>Properties of soil</i>	C-	C+	C++
	Lesson 2: <i>Soil erosion and soil conservation</i>	C--	C+	C+
Teacher H	Lesson 1: <i>Causes of soil erosion</i>	C--	C-	C-
	Lesson 2 : <i>Soil conservation methods</i>	C- -	C+	C+
	Lesson 3: <i>Crop farming and animal farming</i>	C-	C-	C-
Teacher I	Lesson 1 : <i>Crop farming</i>	C-	C+	C-
	Lesson 2 : <i>Soil erosion</i>	C--	C+	C+
Teacher J	Lesson 1 : <i>Structure of the earth</i>	C-	C++	C-
	Lesson 2 : <i>Weathering</i>	C+	C++	C++
Teacher K	Lesson 1 : <i>Overpopulation</i>	C- -	C+	C-
	Lesson 2 : <i>Solutions to the problems of overpopulation</i>	C-	C+	C-

Total number of lessons observed and analysed: 37. NB: similar topics were taught by different teachers in different classes

<sup>6</sup> There were no interactions as the teacher spent the whole lesson giving notes. Following Hoadley (2007) this lesson can be coded F0 as there were not sufficient data. However, the fact that the teacher spent so much time giving didactic notes reflects a technical view of knowledge.

### 11.3.1 Knowledge relations between geography and environmental education

The data presented in Table 11.2 show that there is generally a high level of integration of environmental education content into the geography lessons at the five schools where I conducted classroom observation. The lessons taught by Teacher A, in particular, show a very weak classification (C--), suggesting that the teacher probably recognised and realised the opportunities offered by the geography content to integrate environmental education. The following is a detailed record of one of his lessons.

#### Lesson record 1: Teacher G

Class : FormA  
 Class Size : 56  
 Duration : 80 minutes  
 Topic : Problems of soil erosion  
 Date : 29/04/08

Time	Teacher's activities	Learner's activities
08:20	The lesson started promptly at 8.20. The learners asked questions to recap on the previous lesson on types of erosion	Most learners had textbooks and notebooks in front of them
08:23	After the recap, the teacher stated the topic and wrote on the chalkboard. He asked a question, "Are you happy that there is soil erosion"? He asked a further question "Why"? He continued the question and answer session building a lesson summarise on the responses, and explaining problems of soil erosion. In his explanation, he highlighted problems like siltation of dams.	The class responded in a chorus "No" Learner: It causes dongas
08:31	The teacher summarised the main points discussed so far and asked learners to copy notes as he wrote on the board referring to his notebook, which was placed on the his desk in front of the class. In the process of notes writing, he explained the key points. The lesson summary covered problems such as desertification, formation of dongas, low yields, land and water pollution and siltation of dams. In the process of notes writing, the teacher would pause and elaborated on each problem. As he paused to elaborate, learners still busy copying notes and not listening.	
08:40	The teacher instructed learners to work in groups and suggest solutions to the problems of soil erosion discussed. He organised the group activity such that each group represented a village council. He gave each group a piece of paper written name of a village they belong. As part of the instructions, he asked learners to imagine themselves working as village councillors confronted with problems of soil erosion. He also instructed them to write down their possible solutions.	Learners formed groups as instructed, and discussed possible solution.
08:50	He gave them 5 minutes to do the task. He circulated between the groups to supervise their work.	
08:52	On realising that other groups had not finished, the teacher allowed some more minutes. He said, "hope you have now finished". He then asked the first group to present	Some group indicated that they were ready to present their work. Other groups were still discussing.
09: 13	During presentations, the teacher probed the presenters for clarification. As learners had difficulties with some concepts e.g. monoculture, the teacher referred them to Agricultural teachers for definitions. He emphasised that they should write down those concepts so that they don't forget to ask agriculture teachers.	A group representative moved to the front and read their solutions from a note book. The group representatives presented until all the groups presented their work. The learner paid attention and stood up to give a response.
19:16	After all the groups had presented, the teacher initiated another question and answer session based on the methods used to control soil erosion. "How do we build silt traps"? In his explanation, the teacher drew a sketch diagram on the chalkboard to illustrate the effectiveness of vegetation cover in controlling soil erosion on steep slopes.	Learner responding: By planting trees.
09:22	He gave another set of notes drawing on group presentations.	

	<p>The teacher paused the process of notes writing and elaborated on methods of controlling soil erosion.</p> <p>On realising that one learner was not paying attention, he asked her a question, –Do you still remember agents of soil erosion”?</p> <p>The teacher concluded the lesson by asking questions: e.g. What solution can you give to the problem of land and water pollution?</p> <p>The teacher elaborated on the response</p> <p>The bell rang. No summary was provided.</p>	
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As can be seen from the record, the topic itself is about an environmental issue. The teacher appropriately emphasised problems caused by soil erosion, such as the siltation of dams, the formation of dongas and declining yields. These problems reflect the impact of soil erosion on both biophysical and economic dimensions of the environment. He also taught conservation methods that could be used to control soil erosion. The teaching of soil conservation methods lays a foundation for development of action competence supporting education *for* the environment.

The analysis in Table 11.2 also shows that classification between geography and environmental education tends to be very weak (indicating a very a high level of environmental education integration) in the lessons that related to soil erosion and water conservation. This reflects a traditional focus of school geography on soil and water resources management, which was also evident in the analysis of the Lesotho geography curriculum materials analysed in chapters 8 and 9 respectively.

Comparing the lessons taught in the model school and control case schools on the concept of soil erosion, there is not much observable difference. Lessons 3 and 4 taught by teacher B at the model school show the same classification value (C--) as lessons 1 and 2 taught by teacher H who did not receive LEESP training on environmental education (see Table 11.2). This may be an indication that the content of geography in the model school is not necessarily directly linked to the LEESP intervention in this school.

But the analysis also shows that there are certain content areas where geography retains its strong disciplinary boundaries. As shown in Table 11.2, this is particularly the case with topics such as river drainage patterns and the Lesotho Highlands Water Project (LHWP), as taught by teacher C of the model school, and tectonic movements and their resulting landforms as taught by teacher E at a neighbouring school. The strong classification for lesson 2 dealing with the LHWP, taught by teacher C, would

not be expected given that the project had and still has environmental, socio-cultural and economic impacts in Lesotho. There was a need to emphasise these aspects, or at least to bring them to the attention of the learners, in order demonstrate the integrated nature of school geography. The lesson, which took 40 minutes, simply focused on the location of important dams constructed under the project. The learners spent the whole period referring to atlases (which were shared among them) to locate the dams, and drawing maps. While these are important geography skills (locating places and drawing maps), background information on why it is important to learn about the dams constructed under this project would have been useful in terms of making the topic more contextually relevant. The approach used in this lesson reflects the sequence of topics in the syllabus for the Form B class level, where environmental impacts of the LHWP are taught after factual information on the location of important dams. When asked why this lesson was taught at Form C level, the teacher said that she does not follow the spiral approach used in the geography curriculum document.

### **11.3.2 Interdisciplinary relations**

LEESP envisaged an integrated curriculum in which links between subjects within the school curriculum could be made explicit. However, the data presented in Table 11.2 shows that the geography lessons generally reflect an emphasis on geography specialised disciplinary knowledge, as illustrated by the fact that 26 out of 37 lessons (70%) displayed a strong classification (C+ and C++). The classification is very strong (C++) in the case of lessons dealing with traditional physical geography topics such as river drainage patterns, weathering, and tectonic movements (see Table 11.2). Teacher B at the model school, in teaching lesson 1, was keen to emphasise geography disciplinary knowledge by promoting an understanding of the processes of physical weathering such as exfoliation and frost action. Here there was an opportunity to relate this knowledge to some basic scientific principles such as expansion and contraction, and how the volume of liquids is affected by freezing. Unfortunately, this relevant knowledge from natural science was not used to enhance the lesson. This denied the learners the opportunity to learn by transferring knowledge acquired in science to geography, and vice versa. The teacher was also keen to emphasise specialised geography skills:

*You know in geography, you should be able to draw what you have learnt [as she moved around checking learners' diagrams]... I am going to give marks for drawing good diagrams. (Extract from Teacher B: Lesson 1).*

Similarly, Teacher A, when teaching lesson 4 (uses of water), had a tendency to retain geography specialised geography knowledge even where there were opportunities for drawing on other subjects. When teaching this lesson, which took about 80 minutes, the teacher classified the common uses of water into industrial and domestic uses. He then moved on to cover some content on water pollution, referring to the effects of chemicals on water. The teacher made no explicit reference to relevant knowledge that learners may have acquired in agriculture, science or domestic science. This observation does not confirm the teacher's claim that he consults with other subject teachers in order to identify aspects of the content in these other subjects that he can use to enhance geography lessons (see Section 10.7.1).

Table 11.2 also shows that there were instances of weak classification with respect to interdisciplinary relations. The table shows that there are variations between teachers and among schools. In the model school, Teacher A seems to do better than Teachers B and C, with the latter having no lesson coded C- with respect to interdisciplinary relations. This could suggest that implementing an integrated approach in geography at this school, as recommended in the LEESP programme, is left up to the individual teacher. It could also mean that recruiting knowledge from other subjects in teaching geography depends upon the individual teacher's perception of the subject. Thus in the case of Teacher C, the strong classification of her lessons may be indicative of the view that geography is a distinct discipline having no explicit relations with other subjects offered at the school.

There are fewer instances of a weak classification (C-) at schools that did not participate in LEESP training workshops. I observed only two instances at Lepoqo High School, where Teacher H attempted to use learners' prior knowledge from agriculture lessons in primary school. On introducing the lesson on crop farming and animal farming (Lesson 3) the teacher asked:

*What comes to mind when you see the word agriculture? Mention types of agriculture that you know from the primary school's agriculture?*

Teacher G at the same school demonstrated a different view of geography in the presentation of her lessons. I observed her two lessons on soil properties and soil conservation, respectively, in which she made no reference to any other subject. Given that this teacher had received LEESP training at her former school, it was to be expected that she would be better able to recognise the opportunities offered by such a topic to promote an integrated approach to geography teaching and learning. This may be explained in different ways. First, it could mean that the teacher has not internalised the LEESP idea of integrated teaching to the extent that it has shaped her daily classroom teaching practice. Secondly, it could be that she abandoned the idea upon joining a school with a different teaching culture. I pointed out in the contextual profile (see Section 11.2) of the schools that the school where the teacher is now teaching is nationally rated as one of the top performing schools in public examinations, which may have had an influence on her teaching methods.

### **11.3.3. Relations between geography and everyday knowledge**

The LEESP environmental education programme, as is the case with other programmes elsewhere, adopts an integrated view of the curriculum, encouraging teachers to relate subject knowledge to the everyday knowledge of the learners (see Chapter 6). The data presented in Table 11.2 shows that 17 out of a total 37 lessons (46%), taught by different teachers including those who did not receive LEESP training, are weakly classified with respect to inter-discursive relations. This low number of weakly classified lessons may suggest that the teachers generally do not take advantage of the opportunity created by geography content to integrate the everyday knowledge of the learners. Surprisingly, there are fewer weakly classified lessons (C- and C--) at the model school, despite commonalities among the topics taught. Only 4 out of 11 lessons observed at this school reflect a weak classification (C-), of which two are very weakly classified (C--). This number is small when compared to 4 lessons coded C-- and 2 coded C- at a neighbouring school, where environmental education was disseminated by the very same model school. The lessons at the model school also show a low representation of inter-discursivity when compared to 6 weakly classified lessons from the control case schools.

The analysis also shows that the high level of integration of everyday knowledge, as illustrated by a very weak classification code (C--), is evident in lessons dealing with water management, vegetation and farming. This may suggest that these topics are some of the geography content areas where teachers find it easier to recruit learners' everyday knowledge, probably because most of them are familiar with the uses of water, causes of water pollution, local names of plants, and common problems facing farmers. When teaching a lesson on "maize growing" (lesson 2), Teacher D asked learners to work in groups to discuss problems plaguing crop farming in Lesotho and possible solutions. As they talked, she encouraged them to reflect on what they knew from their villages. I made a similar observation with Teacher B when she was teaching lesson 2 on types of vegetation. The teacher encouraged learners to use the local names of indigenous plants as they were making an inventory of plants found in the school grounds.

While there is thus some evidence of the use of learners' everyday knowledge, there were also many instances in which the teaching of geography topics was decontextualised from local environmental issues. An example of such a decontextualised teaching approach can be seen in the following record of lesson 3 (problems of soil erosion) taught by Teacher B:

### Lesson Record 2: Teacher B

Class : Form A1  
 Class size : 51  
 Date : 22/04/2008

Time	Teacher's activities	Learner's activities
09:10	<p>The lesson started after the class had greeted us. The teacher holding a chalk reminded learners that they learned about soil erosion and stated the topic as it appears in the syllabus, "Let's talk about the problems of soil erosion before we go to soil conservation methods."</p> <p>She wrote the topic on the board and initiated question and answer session on problems of soil erosion.</p> <p>As the learners gave their answers, the teachers reformulated them and wrote correct responses on the chalkboard.</p> <p>The teacher embraced the response with a high impression "It destroys the beauty of the landscape". She explained how soil erosion affects the appearance of the landscape causing land degradation.</p> <p>She then proceeded with question and answer session. She asked the learners to explain how soil erosion causes siltation of dams.</p> <p>She reacted, "Oho, she talks about water".</p> <p>The teacher accepted the answer and paged through the textbook looking for a written explanation. Even before finding the relevant text, she referred the learners to page 50 of their textbook. On realising that there was no relevant text on page 50, she gave up and said, "... but I know it is there in your books". She explained how soil erosion causes siltation of dams referring to the local dams that have.</p> <p>The teacher moved on and added information poor environmental management causes soil erosion and summarised other causes of soil erosion previously discussed.</p>	<p>Most learners had textbooks in front of them as the lesson started.</p> <p>Learners responded to the questions individually e.g.</p> <p>Learner 1: Soil erosion can cause dongas to be formed.</p> <p>Learner 2 : soil erosion causes the land to be bare.</p> <p>Learner 3 : It causes loss of land beauty</p> <p>Some learners laughed at the learner undermining the response.</p> <p>Learner: It causes water in the dams to flood.</p> <p>Another learner responded, "It causes dams to have mud or sand".</p>

09:28	She moved on to discuss soil conservation methods and wrote the sub-topic on the chalkboard.	
	After introducing this section of the lesson, the teacher asked learners to describe methods of soil conservation, and wrote responses on the board as they came up.	Learners responded mostly reading from their textbooks. E.g. a learner responded: “planting trees”
	During the question and answer session, the teacher noticed a learner who was copying notes. She reprimanded her and reminded the class about the class rules concerning writing and talking.	Another learner : “We should practice rotational grassing”.
09:33	When learners had stated nine methods of soil conservation, the teacher suggested that they were enough and they should move on and consider classifying the methods into preventive and curative methods.	As the teacher suggested progress, two students had their hands up wanting add to the list of methods of soil conservation.
	The teacher moved on to classify the conservation methods. She initiated another question and answer session and asked learners to state the difference between preventive and curative methods of soil conservation. On realising that some students were not really participating, she encouraged everybody to try for a better understanding.	
09:43	She then moved on and guided learners classification of conservation methods listed on the board (see photograph X showing chalkboard summary). As they were classifying, the teacher asked learners to justify their classification.	Learners explained the difference between preventive and curative methods.
	Through that question and answer session she negotiated the classification with the learners.	Through guided questions, the learners classified the methods.
10:03	The asked learners to tell what they understood by crop rotation and explain how it controls soil erosion. She explained other key concepts such inter-cropping	
	She then summarised the methods of controlling soil erosion and told learners that most methods listed were preventive methods of controlling soil erosion	
10:11	After the summary, she instructed learners to take out their notebooks and copy the notes from the chalkboard (see the summary in photograph )	
	The teacher and I left the class 8 minutes before the bell rang, while the learners continued to copy the notes.	

In this lesson, although there was locally relevant content on the effects of soil erosion and soil conservation methods, the teacher made no attempt to relate this content to what learners knew from their daily experience or to engage them in critical discussion on the appropriateness of certain methods of soil conservation in their local areas. Instead the teacher relied heavily on the textbook and emphasised the meaning of terms and classification of the methods in her question and answer session. On several occasions the teacher referred to the textbook for explanation of terms. In one instance she paged through the textbook to look for an explanation of siltation, which had been raised by a student as one of the problems of soil erosion. As can be seen from the record of her lesson, on realising that there was no explanation on the page she had referred to she gave up and said: —. *I know it is there in your books*”. This does not only reflect a lack of clear conceptual knowledge of the subject, it also reflects a decontextualised approach, in which a textbook dictates the content of the lesson, rather than serving as a teaching resource.

This compares with lesson 2, on methods of soil conservation, taught by Teacher H who did not receive LEESP training in environmental education. The teacher had asked learners to work in groups and discuss methods that could be used to control soil erosion, and then to share their findings with the rest of the class. As learners

were presenting in their groups, I got the impression that most of the information came from the textbooks rather than from their experience of what was happening in their local areas. Some learners were even holding their textbooks, paging through them. During the presentations, the teacher did not attempt to show the connection between what is taught in geography and real life. For example, one group made a presentation in which they identified the contour method of ploughing and the terracing of slopes as methods of controlling soil erosion, but without giving examples from their local areas. At the time of this research there were land reclamation activities in progress in the neighbourhood of the school. While these activities provided an opportunity for a contextualised approach to geography teaching, the teacher did not lead the discussion beyond the textbook and the classroom to find out whether students were aware that soil conservation measures were being taken in the neighbourhood. He did not create a context for critical discussion of the effectiveness of these initiatives, nor did he explore learners' understanding of the conflicting interests, the politics and the sustainability pertaining to such land reclamation activities.

During my post-observation discussion with this teacher, he said he did not think that the learners were aware of the local soil conservation initiatives because they do not watch the relevant programmes on the Lesotho Television channel. He said that he ought to take the students on a guided tour to see what was going on the outskirts of the city, but he did not have the time due to what he described as a "highly content-loaded syllabus". He suggested that such practical activities could be covered in other, related, subjects such as agriculture, which unfortunately was not offered in this school.

The problem of decontextualisation has previously been identified as a potential impediment to the integration of environmental education into geography teaching in Lesotho. In her study, conducted in some other rural schools prior to the LEESP intervention, Mphale (2001) reports that geography teachers did not see the connection between geography and local environmental issues within the everyday life experience of the learners. In the light of this previous research, it could be argued that the instances of decontextualisation in my research schools, including the model school which received LEESP training, suggest that the project has had a little

impact on the content of geography at classroom level. Though my sample did not cover the same teachers that Mphale (2001) worked with, it does not seem that there has been much change in the way in which geography teachers perceive and understand the subject. This could interfere with their ability to enact learner-centred pedagogy in pursuit of the vision of action competence. In the next section, I analyse the structure of pedagogy in order further to examine the interface between the LEESP pedagogic innovations and the pedagogy of school geography in the research schools.

#### **11.4 Analysis of the structure of pedagogy**

To analyse the structure of pedagogy at the classroom level, I developed an analytical instrument drawing on the work of other Bernsteinean scholars, in particular Hoadley (2007) and Bertram (2008). The instrument is shown in Appendix F. This analysis was intended to compare teachers' espoused theories about teaching and learning, as presented in Chapter 10 (see Section 10.5), with what they actually did in their day-to-day classroom practice. I concentrated on selection of content, sequence of the lesson content/activities, pacing of the lesson, social interaction, and framing of the physical space. Table 11.3 presents data on these instructional rules according to the framing scale.

**Table 11.3: Analysis of pedagogy according to framing scales**

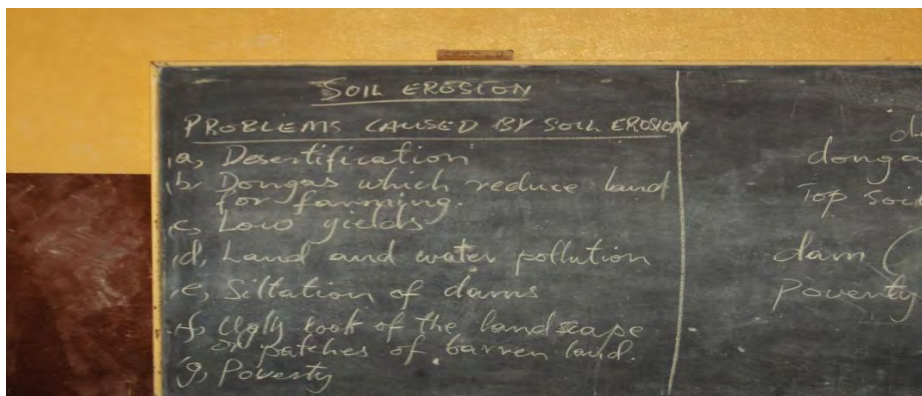
Teacher and lessons observed		Analytical categories and coding according to framing scale				
		Selection of content	Sequence	Pacing	Social interactions	Utilisation of space
<b>Category A : Model school</b>						
<b>Teacher A</b>	Lesson 1: <i>Problems of soil erosion</i>	F++	F++	F+	F-	F++
	Lesson 2 : <i>vegetation</i>	F+	F++	F+	F+	F- -
	Lesson 3 : <i>Water/Hydrological cycle</i>	F++	F+	F-	F+	F+
	Lesson 4 : <i>uses of water and water pollution</i>	F++	F++	F+	F+	F+
<b>Teacher B</b>	Lesson 1: <i>processes of physical weathering</i>	F+	F-	F++	F+	F+
	Lesson 2: <i>problems of tourism</i>	F+	F+	F-	F+	F+
	Lesson 3: <i>problems of soil erosion</i>	F+	F+	F-	F+	F++
	Lesson 4: <i>Types of vegetation</i>	F+	F+	F+	F-	F- -
	Lesson 5: <i>weathering</i>	<b>No data</b>	-	-	-	-
<b>Teacher C</b>	Lesson 1: <i>River landforms</i>	F++	F+	F+	F++	F+
	Lesson 2: <i>River drainage patterns</i>	F+	F+	F-	F+	F+
	Lesson 3: <i>Lesotho Highlands Water Project</i>	F+	F++	F+	F++	F+
<b>Category B : Neighbouring schools</b>						
<b>Teacher D</b>	Lesson 1: <i>Crop farming</i>	F+	F++	F+	F+	F+
	Lesson 2 : <i>Growing of maize</i>	F+	F+	F-	F+	F+
	Lesson 3: <i>Vegetable Farming</i>	F+	F+	F+	F+	F-
	Lesson 4: <i>Problems facing urban settlements</i>	F+	F+	F+	F-	F--
<b>Teacher E</b>	Lesson 1 : <i>Wind erosion</i>	F+	F+	F++	F+	F- -
	Lesson 2 : <i>Methods of Farming</i>	F++	F++	F++	F++	F+
	Lesson 3 : <i>Commercial farming</i>	F++	F++	F+	F++	F+
	Lesson 4 : <i>Tectonic movements</i>	F+	F++	F+	F+	F-
	Lesson 5 : <i>Land features resulting folding</i>	F++	F++	F+	F+	F+
<b>Teacher F</b>	Lesson 1: <i>Soils</i>	F+	F+	F-	F-	F+
	Lesson 2: <i>Water resources</i>	F+	F+	F+	F-	F+
	Lesson 3 : <i>Vegetation</i>	F+	F++	F+	F+	F- -
	Lesson 4 : <i>Uses of vegetation</i>	F+	F+	F+	F+	F+
	Lesson 5 : <i>Factors influencing air temperature</i>	F+	F++	F-	F+	F+
<b>Category C : Control case school</b>						
<b>Teacher G</b>	Lesson 1: <i>Properties of soil</i>	F++	F++	F+	F+	F-
	Lesson 2: <i>Soil erosion and conservation</i>	F+	F+	F-	F-	F- -
<b>Teacher H</b>	Lesson 1: <i>Causes of soil erosion</i>	F+	F+	F-	F+	F-
	Lesson 2: <i>Soil conservation methods</i>	F+	F+	F-	F-	F-
	Lesson 3: <i>Crop farming and animal farming</i>	F+	F+	F+	F+	F+
<b>Teacher I</b>	Lesson 1 : <i>Crop farming</i>	F+	F+	F+	F++	F++
	Lesson 2 : <i>Soil erosion</i>	F+	F++	F+	F+	F++
<b>Teacher J</b>	Lesson 1 : <i>Structure of the earth</i>	F+	F++	F+	F++	F++
	Lesson 2: <i>Weathering</i>	F++	F++	F+	F++	F++
<b>Teacher K</b>	Lesson 1: <i>Overpopulation</i>	F+	F-	F-	F+	F+
	Lesson 2: <i>Solutions to overpop. problems</i>	F+	F+	F+	F+	F+

### 11.4.1 Selection and sequence

Table 11.3 shows that, with teachers across the board, both the selection of content and the sequence of lesson activities are generally strongly framed. While this might suggest that the teacher exercised explicit control, a close look at the lesson processes reveals that the syllabus and textbooks also exercised a great deal of control. In most cases the teachers stated the topic as listed in the syllabus, with some specifying the objectives. These objectives determined the sequence, with little or no variation caused by the learners. Strong framing was further manifested in an emphasis on key terms and concepts which were often defined and summarised. Teacher J went to the extreme of stressing that the learners should memorise the content: “I told you that you should know these processes [processes of physical weathering] by heart”.

Some teachers also chanted and asked learners to repeat after them as a way of emphasising the key points. “We said hydrological cycle is...” (Teacher A, Lesson 3); “Each sample has its own...”, “We have said that humus is...” (Teacher G, Lesson 1). This chanting is characteristic of the didactic method that has for a long time characterised geography teaching in Lesotho (see Chapter 3).

In many cases strong framing of the selection of content was illustrated by the frequency of giving notes to the learners, which is another typical feature of didactic teaching (Yeung, 2002). Some teachers developed a lesson summary on the chalkboard, with minor input from the learners, and then instructed learners to copy down this summary as part of their notes. Figure 11.3 shows one such chalkboard summary developed by Teacher A of the model school.



**Figure 11.3: Chalkboard summary**

Looking closely at this outline, it would seem that the approach used by the teacher supports education about the environment. This form of environmental education, though giving learners environmental knowledge, does not do much to promote critical action for the environment (Jensen, 2000). It is situated in the technical paradigm, which assumes that the way to respond to these problems is via direct technical intervention, without looking at the root causes of the problem and challenging the status quo (Lee and Williams, 2001). This was evident when the teacher moved on to discuss solutions to the problems. He focused attention primarily on textbook information and considered mentioned activities such as planting trees, ploughing across the slope and building silt traps, but without engaging learners in the debate on the possible influence of other structural factors embedded in society and beyond, that need to be addressed. This didactic approach is typical of many lessons I observed in the research schools.

In the same school, Teacher B dedicated her 40-minute lesson to giving notes based on textbook information, even though almost all the learners had the textbook. In another school the learners attempted to alter the sequence of the lesson by suggesting that notes be given during the next lesson because there was not enough time left (there was about 10 minutes left before the end of the lesson). The teacher (Teacher I) however, insisted that they should write notes, even though she later changed her mind. After writing the main heading on the board, instead of continuing to write notes for the learners, she summarised the lesson and evaluated it. While her change of mind may suggest that the teacher allowed the learners to exert some control over the structure of the lesson, the learners' concern about the time left may simply have been a reflection of how tired they were of copying down notes.

The strong framing of selection of content and sequence evident in this analysis may be explained in two ways. First, it could be a reflection of the teachers' preference for didactic methods of teaching, in terms of which the acquisition of content overrides the process of learning. It could also be a reflection of the need to prepare learners for public examinations, which currently emphasise knowledge rather than skills (Nketekete & Motebang, 2008). While this approach may be appropriate as a response to the pressure of time to cover the syllabus, centring content on the teacher or the textbook may run the risk of promoting a one-sided perspective on environmental

issues. Some critics of dominant approaches to teaching environmental education argue that the role of education should be to promote independent thought rather than certain values (Jickling, 1992; Stevenson, 2007).

### 11.4.2 Pacing

It is clear from Table 11.3 that the pacing of the lessons was generally strongly framed, with only eleven out of thirty-seven (i.e. 30%) coded F-. There were instances where teachers seemed to be too impatient to allow learners time to articulate their answers. This is evident in the lesson extract below:

#### Lesson extract 3: Teacher E

14:07	<p>After greeting the class, the teacher asked one learner to clean up the board. She quietly wrote the date and name of the subject on the board.</p> <p>She then asked learners a few questions about the processes of weathering which had been taught previously. –What are the effects of weathering, i.e. what you can see after weathering has occurred?”</p> <p>Learner 1 : –climate”</p> <p>Teacher asked the class, –Is it correct?” There was no response from the class. She said –Not quite” and pointed to another learner who had raised his hand.</p> <p>Learner mentioned two landforms resulting from chemical weathering. The teacher said –correct” and turned to the board to write the topic of the lesson –wind erosion”</p> <p>She then asked learners to define soil erosion and mention the agents of erosion.</p> <p>She told the class that wind is one of the agents of soil erosion and explained that wind erosion is common in desert areas. She asked learners to explain why.</p> <p>Learner : –There is lack of rainfall so soil...”</p>
14:12	<p>The teacher intervened and added –so the soil is easily carried away when it is dry”</p> <p>She mentioned processes of wind erosion asked learners to explain each process, –What is abrasion?”</p> <p>Learner: –wearing away of ...”</p> <p>The answer was not satisfactory. No other learner volunteered to try. After a few seconds, the teacher defined abrasion.</p>
14:20	<p>After one student had mentioned the processes, she asked the learners to describe features that are produced by wind erosion.</p> <p>Since the time was already up, as learners were struggling with the description of the features the teacher said, –think about them and do it as a homework”.</p>

As can be seen from the lesson extract, the teacher used a question and answer method, but was concerned about finishing the lesson within the stipulated time. In line 6, instead of waiting for the learner to clarify the answer, she moved on to ask another learner, whom she probably thought would give a quick answer to the question. She also asked a question, –What is abrasion?” Here again, instead of allowing the learners to think about the question, or prodding them, she was quick to answer her own question. This may suggest that the teacher does not have sound pedagogic knowledge (Shulman, 1987), despite her professional teaching qualification (B.ED) and 15 years’ teaching experience (see Chapter 10, Table 10.1).

As indicated above, there were some instances of weak framing. In most cases this occurred when the pace of the lesson was weakened through question and answer sessions and allowing learners to work in groups, even though such group activities were still timed.

### **11.4.3 Social interaction**

The LEESP environmental education programme espoused a learner-centred pedagogy, which is liberal and democratic (see Section 6.7). The principles of such pedagogy include open control relations, with dialogue between the teacher and the learners and amongst the learners themselves, for the development of action competences (see Section 3.2.4). Learners should also be free to challenge the teacher on aspects of content. However, the analysis of the lesson observational data reveals a hierarchic relationship between the teacher and the learners. Some teachers were keen to assert their authority by reprimanding and punishing learners for unruly behaviour. Teacher B, for example, frowned at the students when they were not answering her question, and asked: “Were you listening?” Another teacher severely reprimanded a student who had arrived late for the lesson: “Where are you from? Never be late again!” (Teacher F).

Some teachers also exercised control by giving orders and clear instructions to emphasise evaluation rules and determine all lesson activities. For example, in one lesson a teacher said: “You should first list the problems and then solutions” (Teacher D, Lesson 1). Another teacher instructed learners as follows: “Fake out your notebooks and write examples of plants [in each category]” (Teacher A, Lesson 2). In many cases learners were not free to make interjections. They talked only when answering a question asked by the teacher. Centring the explanation of key concepts on the teacher in some lessons, as reported in Section 11.4.1, could also be a sign that learners are being marginalised in knowledge production.

While it was evident that many teachers were keen to retain their authority in various ways, there were some instances of weak framing of social interaction. These included jokes passed by teachers, questions encouraging open discussion, as well as the many group discussions that I observed.

The following are typical examples of the questions asked during lessons:

*Where does the soil eroded by water end?*

*What is the effect of that in dams?*

*How are farmers affected by soil erosion?* (Teacher A, Lesson 1).

*Why is soil erosion a problem?* (Teacher B, Lesson 3).

With some teachers, the questions moved beyond the simple description of environmental issues and problems to encourage learners to think about solutions to the problems. For example, Teacher A at the model school, after some discussion on the problems of tourism, asked learners to suggest ways in which they could avoid polluting the environment when they take school trips.

However, across all the lessons the questions asked seemed to have been intended to lead the discussion in a certain direction rather than exploring different viewpoints regarding environmental issues. This was particularly evident in Lesson 1 taught by Teacher C. This teacher asked learners to list the uses of rivers, but without exploring conflicting interests associated with the human uses of rivers. Learners would have benefited more from this lesson if the teacher had also considered the environmental problems resulting from the use of rivers by humans.

Even in those instances where group discussions were organised, there was no critical engagement among the learners themselves, with some learners not contributing at all to the discussion. In most cases learners would either discuss in Sesotho or simply list points to talk about in their presentations. This could be evidence of the sort of learner-related challenges reported by many teachers in the interviews (see Section 10.7.2). The lack of critical engagement in such group discussions, however, could also be attributed to the topics being discussed. I had a feeling that in some lessons the use of group discussion was not appropriate. For example, Teacher K, in lesson 2, asked the learners to work in groups to discuss solutions to the problems of overpopulation. However, the activity was not focused on specific contexts, and thus tended to focus on the factual information provided in the textbook. This may reflect the teacher's limited understanding of constructivist teaching approaches, which could

in turn have something to do with her lack of a teaching qualification (see Table 10.1). The value of such group activities in promoting cooperative learning is questionable. It is certainly not the sort of collaborative learning advocated by LEESP.

However, there was one instance I observed at the model school, which can be described in terms of cooperative learning leading to the promotion of action competence. Teacher A instructed learners to work in groups and suggest solutions to the problems of soil erosion. He organised the group activity such that each group represented a village council. He gave each group a piece of paper bearing the name of a village they belonged to. As part of the instructions, he asked learners to imagine working as village councillors confronted with problems of soil erosion, and to suggest possible solutions accordingly.

Although this activity had the potential to encourage critical discussion, that was not evident in what ensued. In a group that was near my seat, at the back of the class, some learners were silent throughout the activity. I also observed that there were no debates leading to consensus, as would be expected in the processes of decision making and problem solving. This could be an indication that the learners are not used to working in groups. In another school, Teacher D had organised group presentations on the problems of urban settlements. The presenters simply read what they had copied from the internet without their own interjections, and there were no critical questions from the rest of the class. In yet another school I observed learners struggling with their presentations in front of the class. I asked a learner who was seated next to me how often they worked in groups. He said it was the first time that they had had group presentations in geography lessons.

There was also an instance where a teacher at the model school attempted to encourage community-based action for the environment. This teacher (Teacher A) encouraged learners to sensitise their parents and other members of their communities about water pollution. A learner reacted to this, saying that their grandparents would not listen to them since they were children. This may be interpreted as reflecting a clash between the LEESP vision of action competence and the local culture. The

learner's remark rehearses the traditional learning orientation that children cannot be sources of knowledge.

#### **11.4.4 Utilisation of physical space**

Although the use of space is conventionally analysed as a classification category (see for example Naidoo & Harley, 2004; Bertram, 2008), I used it in this study as a framing dimension to analyse the structure of pedagogy in terms of how the geography teachers organised and utilised the physical space both inside and outside the conventional classroom, for the purposes of promoting enquiry learning and direct observation in the field. As shown in Table 11.3, out of the 37 lessons I observed and analysed, only 10 lessons were weakly framed in terms of the utilisation of physical space. Six of these lessons had a very weak framing (F--) as they were conducted outside the four walls of the conventional classroom. This number could be regarded as fairly high, given the organisational structures of schools, which include external examinations, an unsupportive school time-table and an administration that appears to discourage the effective use of fieldwork/outdoor teaching/learning methods (see sections 10.7.1, 10.7.3 and 10.7.4). Teachers A and B at the model school took the opportunity of using the school grounds to promote outdoor learning about vegetation. Figure 11.4 shows Teacher B conducting an outdoor lesson on vegetation in the school grounds at the model school.



**Figure 11.4: An outdoor lesson in the school grounds**

As Figure 11.4 shows, the teacher assembled the class in an open area in the school grounds, with learners holding their notebooks and textbooks. She explained different types of plants and their distribution in Lesotho. She then asked them to look around

and name examples of indigenous plants and their uses. The lesson continued with the teacher's exposition alternating with probing questions for about 70 minutes (this was a double lesson).

Teacher F at another school taught the same topic outdoors. Like teacher B, he asked learners to mention types of plants they saw around them and on a mountain, which was close to the school (see Figure 11.2). While these activities might be useful in that they provide learners with an opportunity for direct observation of the environment, they are limited in terms of promoting action-oriented learning as envisaged in LEESP. In both cases the activities could be described as field teaching, which characterised traditional geographical fieldwork, in which observation alone was at the heart of the activity and the teacher's exposition was dominant (Lai, 2006). This traditional approach to fieldwork is evident in Figure 11.4 above, where learners are listening to the teacher who is busy explaining rather than engaging them in enquiry learning and encouraging them critically to discuss their observations.

In another school, Teacher G employed a different approach to field-based learning. She gave learners the task of studying the problem of soil erosion within the school grounds. She had prepared the following guidelines for the activity, which took approximately 30 minutes of an 80-minute lesson:

*[Identify] a place in where soil erosion has occurred*  
*State the form of soil erosion*  
*State the agents*  
*What are the causes of soil erosion?*  
*What do you think should be done to prevent that? And who do think should do it? (Teacher G, Lesson 2)*

Although the activity does not involve (hands-on) physical action by the learners, it supports the vision of action competence by going beyond mere observation to the point where learners are suggesting ways of controlling soil erosion in a specific area. Moreover, through this activity, the teacher contextualised the problem of soil erosion and encouraged the learners to understand their role in resolving environmental issues. This was evident during the report-back session, when the teacher asked a presenter: "Why do you say only senior students should take responsibility to plant trees?" In this way the teacher takes the lesson beyond the description of environmental issues to the promotion of environmental awareness, a level at which

learners can develop critical thinking and problem-solving skills. This sort of lesson was rare in the research schools. The ability of the teacher to organise such an environmental audit could be linked to her training in environmental education (see Table 10.1).

There were also some occasions when teachers referred to field trips they had taken with the learners, or encouraged learners to make field observations on their own. I coded such lessons F- to reflect weakening of the boundaries between the classroom learning space and the field. For example, Teacher D organised her lesson 3 on vegetable farming around field study that had taken place the previous day. The teacher dedicated the first 30 minutes of a 40-minute lesson to reporting back by the learners.

Other instances of weak framing regarding the teaching and learning space occurred when lessons were conducted in the computer room using the internet. This was particularly the case with teachers D, E, G and H, who taught at least one of the lessons that I observed using the internet. In all cases when the internet was used, learners showed a lot of interest, to the extent that they did not want to leave the room when the lesson period had elapsed. In one lesson learners were fascinated to see coloured pictures showing land features produced by wind erosion. The use of the internet appears to be an appropriate strategy to represent the reality of distant environments and promote inquiry learning in geography.

## **11.5 Conclusion**

The purpose of this chapter was to investigate how geography teachers were implementing environmental education at the level of classroom practice. The data generated through lesson observations seemed to resonate with teachers' perceptions that geography has a strong environmental dimension. The analysis of classroom observational data reveals a high level of integration of environmental education into many geography lessons taught both by teachers who received training and those who did not. This was particularly evident in the case of topics relating to environmental management (soil, water, vegetation conservation). However, in contrast to the integrated approach espoused by LEESP, the analysis illustrates that generally there

was also a strong classification between geography and other subjects in the school curriculum. There were also many cases of decontextualisation where teachers made a little attempt to make a connection between the geography content and local environmental issues within the daily life experiences of the learners. This indicates that, in the research schools, geography still retains its disciplinary boundaries.

With respect to pedagogy, the chapter illustrates that there is a tension between teachers' espoused theories, as reported in Chapter 10, and their actual pedagogic practices. In contrast to the teachers' claims that they use learner-centred methods, the analysis of classroom observational data reveals that, generally, the teaching of geography was centred on the teacher and textbooks. The coding system developed from the theoretical concept of framing (Bernstein, 1996, 2000) characterised the classroom teaching as strongly framed with respect to the selection of content and the sequence of activities. What was taught in most lessons was determined by the teacher and reinforced through didactic notes, which in many cases were no different from the information in the textbooks. This reflects a technical view of knowledge, as opposed to the practical and emancipatory views which characterise learner-centred methods. This tension between teachers' espoused theories and their actual practice illustrates the complexity of translating a new curriculum policy into classroom practice. This raises the question of why there should be this tension at the interface between environmental education policy intentions and the actual teaching of geography in the context of Lesotho. In the next chapter I provide a synthesis of the study and attempt to answer this question.

## **CHAPTER 12 CONCLUSION**

### **12.1 Introduction**

The goal of this study was to explore the interface between environmental education, as conceptualised in LEESP, and secondary school geography, with a view to understanding curriculum reform and change in Lesotho. Operating within an interpretive qualitative research paradigm, I sought to understand how the introduction of environmental education into the formal education system of Lesotho has shaped school geography in one former LEESP model school and two other schools where environmental education was disseminated. In this final chapter, I reflect on the research methodology and theories that I used to organise this study and engage with the research questions. I also synthesise the key findings of the study in relation to the research questions listed in Chapter 1, and the national context of Lesotho as described in Chapter 2. I make some tentative recommendations in support of curriculum reforms, outline the limitations of the study, propose areas for further research, and conclude the chapter.

### **12.2 Reflections on methodology and theory**

An interpretive qualitative research approach helped me to describe, analyse and interpret a complex and dynamic social process of conceptualising and implementing environmental education in junior secondary school geography in Lesotho. I used documentary evidence, interviews and classroom observations to respond to the key research questions of the study. The use of these multiple methods of data generation helped me to develop a thorough understanding of curriculum reform in the national context of Lesotho. In particular, interviews with the stakeholders who were involved in the development and dissemination of the environmental education curriculum guidelines clarified my conception of curriculum development and implementation as social and political processes (Cornbleth, 1990; Bowe et al., 1992; Apple, 2004; McLaren, 2007). Furthermore, combining interviews with classroom observations to explore how geography teachers made sense of and implemented environmental education was a useful triangulation strategy to identify and understand the

discrepancy between teachers' personal theories about teaching and learning, and what they actually did in practice.

Through critical reflection at different stages of the research process, I was able to work with different theoretical perspectives and tools (for example, Habermas, 1972; Bowe et al., 1992; Bernstein, 1990, 1996, 2000; Jensen, 2000, and Spillane et al., 2002). Working with these different theoretical perspectives and concepts helped me understand the multiple influences on curriculum reform, from the macro-level of curriculum policy development to the micro-level of classroom implementation. It also proved to be useful in terms of increasing the trustworthiness of the results. For example, it emerged during the process of data analysis that Bernstein's concept of *classification*, albeit a useful analytical tool for knowledge integration at the levels of curriculum documents and instructional classroom practice, was inadequate for analysing the geography content in terms of quality and the goals of environmental education. This limitation informed my decision to draw on more discipline-specific theories, namely McKeown's (2006) model of environmental education and Jensen's (2000) model of action competence, to develop supplementary tools to analyse knowledge integration at the level of curriculum policy documents (see chapters 6 and 8).

Furthermore, the reflexive approach to data analysis enhanced my understanding of the role of theory in research. I have come to realise that theory should not be accorded an authority and power that it does not in fact have; it should rather be used as a thinking tool to make researchers more mindful of the implications of particular occurrences in the research process (Smyth, 2004). Instead of following the theory uncritically, I have seen value in allowing it to enter into dialogue with the data, the context and my own personal subjectivity (Alvesson & Skoldberg, 2000). This relational analysis enabled me to develop a new perspective on the data and to notice unexpected forms that it has taken (Emirbayer, 1997; Miles & Huberman, cited in Smyth, 2004). For instance, by reflecting on the national context of Lesotho (as outlined in Chapter 2), I became more aware of the tacit historical and cultural factors in Lesotho that might influence curriculum policy development and teachers' pedagogic practices. Awareness and understanding of the possible role of such factors informed a further review of literature at a later stage of my research journey.

### **12.3 The key findings**

As described in Chapter 4, this study covered three phases of the curriculum policy development process, namely curriculum design, dissemination and implementation. Through an exploration of what happened in these phases of curriculum development the study has established that, in spite of the capacity building workshops conducted at the model schools, and some congruence between environmental education and the intended geography curriculum (see chapters 8 and 9), there is a disjuncture between environmental education curriculum intentions and geography classroom practice at the research schools, particularly with respect to pedagogy. In this section, I summarise the key findings under the following headings, which are linked to the four research questions of this study (see Section 1.5):

- The LEESP curriculum policy intentions
- Curriculum policy development and dissemination
- The intended geography curriculum in relation to environmental education
- Geography teachers' interpretation and enactment of environmental education

#### **12.3.1 The curriculum policy intentions**

Chapter 6 of this dissertation analysed the content of LEESP policy documents with a view to understanding curriculum policy intentions that emerged from the process of developing an environmental education policy (curriculum design phase). The chapter examined the view of knowledge (curriculum) and pedagogy informing environmental education, in response to research question 1 (see Section 1.5). In my view, this question has been adequately addressed. The analysis showed that LEESP envisaged an integrated curriculum which was to be achieved through a learner-centred pedagogy underpinned by action competence. The overarching goal of the change process was to transform society towards sustainable development. It has also become clear that environmental education innovations in Lesotho have both local and international roots, as illustrated by some areas of synergy between LEESP's curriculum intentions (which are also influenced by international perspectives on EE) and educational aspirations in Lesotho, as expressed in official documents. However, I have argued that LEESP's policy guidelines legitimate certain forms of knowledge

that powerful groups (international bodies) consider appropriate for inclusion in the school curriculum (Bowe et al., 1992; Apple, 2004; McLaren, 2007). For example, the global discourses of sustainable development (as conventionally defined) and learner-centred pedagogy occupy a central position in environmental education reforms, despite the controversies and contestations around them (see sections 3.2.2 and 4.10).

While these concepts may be seen as necessary innovations for achieving development goals in Lesotho, they need to be carefully appropriated within and adapted to the local context, as they are not value neutral. For instance, as noted in Chapter 3 (see Section 3.2.2), the imposition of sustainable development values by international organisations runs the risk of seeming like indoctrination (Jickling 1998; Jickling & Wals, 2008) – especially in the context of Lesotho, a developing country still exploring alternative routes to development. Similarly, the promotion of learner-centred pedagogy, particularly by international donor agencies, is seen by some as having an agenda to incorporate aid-receiving countries into the world market economy serving the technical interests of the capitalist state (Tabulawa, 2003; Chilsholm & Leyendecker, 2008). I have argued, in chapter 6, that the democratic principles underlying this form of pedagogy are likely to conflict with the socio-cultural context in Lesotho. How this played out at school implementation level is summarised in Section 12.3.4.

### **12.3.2 Curriculum policy development and dissemination**

The study analysed the social processes through which environmental education was disseminated and conceptualised, both at the macro-level of curriculum development and micro-level of school implementation. The analysis of the interview data from curriculum developers and official curriculum decision-makers in Lesotho brought to the surface certain issues associated with the policy tension between LEESP's intentions and the actual implementation. The top-down approach used by the project staff appears to have compromised LEESP's stated goal of emancipation. As reported in Chapter 7, some respondents felt that the dissemination workshop activities were rushed so as to complete a dense programme within the pre-determined time-frame. This has probably denied local implementing agents the opportunity to reflect

critically on the implications of implementing LEESP's curriculum ideas in their specific contexts. I have also argued that the manner in which action research, as a strategy to encourage reflective teaching, was introduced to the teachers was epistemologically and methodologically flawed (see Section 7.7.3).

It emerged that LEESP was implemented in an educational environment where there were no clear and comprehensive policy guidelines on the roles of curriculum stakeholder institutions (see Section 7.3.3), which was reported to have constrained harmonisation of the activities of the different departments within the MOET. The situation was exacerbated by the poor coordination of donor-funded curriculum reform projects in Lesotho (Monaheng, 2007). This problem manifested itself during the second phase of EE dissemination to other schools, when another externally funded curriculum project was introduced. As reported in Chapter 7, the model schools did not get enough support from NCDC at this critical stage of dissemination, despite their willingness to go ahead with it (Jobo, Mokuku, & Nketekete, 2005). It was reported that the NCDC, which was supposed to support the model schools in their dissemination, did not have enough funds to do the task. While the NCDC could probably have managed with the meagre resources available, as the interview data illustrates (see Section 7.6.3), they were instructed by the authorities in the MOET to focus on preparation for the introduction of the new project on life skills education, which was perceived to have incorporated environmental education. This raises the basic question of whether the Lesotho government was genuinely interested in introducing environmental education.

As noted in Chapter 2 (see Section 2.6), the poor coordination of curriculum reform processes has a long history in Lesotho (Raselimo, 1996; Nketekete, 2001), with the result that most curriculum reforms receive piecemeal implementation (Kingdom of Lesotho, 1978; Ansell, 2002; Muzvidziwa & Seotsanyane, 2002). It could be argued that this reflects not only a lack of national policy capacity to manage innovations, but also a syndrome of dependency on donor funding for the implementation of curriculum reforms. Nearly fifteen years ago, Niewenhuis (1996) predicted as follows:

Lesotho is, and for the foreseeable future will remain, dependent on donor aid and assistance for development and implementation of its education system. This implies that its education development programmes must be developed in collaboration with donor aid countries and agencies. (p.112)

While receiving donor aid in terms of both financial and technical assistance could be seen as an opportunity for the co-construction of innovation in the local context, as local practitioners work with external consultants, in this instance this appears not to have happened. Some respondents complained about not having been involved in the development of key texts such as the *Reference Note* and syllabus attachments (see sections 7.4 and 7.5). The study has also revealed that Lesotho education practitioners were somewhat dominated by the Danish consultants regarding issues such as the appropriate model of curriculum dissemination, and the conceptualisation of the project's ideas of action competence and whole school development (see sections 7.6.3 and 7.6.4). The analysis helped me to understand curriculum development and change as a social process characterised by issues of participation and contestation. Thus the analysis has enabled me to respond to the second research question of this study (see Section 1.5).

### **12.3.3 The intended geography curriculum in relation to EE**

In responding to the third research question of this study, as set out in Chapter 1, I analysed the geography curriculum document and its supporting textbooks, to obtain a better understanding of the curriculum policy context for geography teaching in relation to environmental education. The findings indicate that, generally speaking, the materials are congruent with environmental education curriculum intentions in terms of content. For example, through the lens of Bernstein's concept of classification, I established that there is a high level of integration of environmental education-related content in the geography curriculum document, even though the focus is skewed towards the biophysical environment. The integration is very strong in the case of topics relating to natural resources management, echoing a finding reported by Mphale (2001). Not surprisingly, the textbooks also reflect a high level of inclusion of environmental education. The analysis revealed, however, that the concept of sustainable development is not given explicit emphasis in the curriculum materials as envisaged in the LEESP policy guidelines, and by the International

Geographical Union (IGU, 2007). Furthermore, contrary to developments in school geography in some other countries, where there has been a shift towards an eco-centric view of the environment (see Section 3.7.2), the curriculum materials, though not explicitly, promote anthropocentric values and attitudes, emphasising knowledge *about* the environment rather than action *for* the environment (see chapters 8 and 9).

With respect to pedagogy, the study has established that, contrary to the learner-centred pedagogy espoused by LEESP, and despite its own claim to be using a learner-centred approach, the curriculum document is generally centred on the teacher. The textbooks, on the other hand, do suggest activities that create opportunities for learner-centred pedagogy. All in all, it could be argued that the geography curriculum materials offer opportunities for the implementation of environmental education in geography classrooms. The LEESP syllabus attachments provide further opportunities for change by introducing a shift towards action competence (see Section 8.4.2). Just how decisive a shift will depend, however, on the mediation of teachers.

#### **12.3.4 Geography teachers' interpretation and enactment of EE**

This study also analysed how geography teachers interpreted and enacted environmental education, as conceptualised in LEESP, in their classroom practice (see chapters 10 and 11). The analysis addressed the last research question of this study: *What is the nature of the interface between environmental education, as conceptualised in Lesotho, and school geography at the level of classroom practice?* Despite some compatibility between environmental education and geography curriculum texts, as summarised in Section 12.3.3, the findings of this study suggest that in essence there is a gap between LEESP intentions and the implemented geography curriculum at the research schools. In this section, I highlight this tension by summarising the key findings that emerged from an exploration of the implementation of environmental education.

#### **12.3.4.1 Equating EE to environmental management**

Consistent with other recent research findings reported in the similar national context of Botswana (Ketlhoilwe, 2007), the results of this inquiry show that geography teachers in the research schools understood environmental education in terms of environmental management. As reported in Section 10.3, they mentioned keeping the grounds neat and undertaking environmental management activities such as planting flowers, grass and trees, as indicators of the existence of environmental education in their schools. There was no clear evidence on how these activities informed the formal curriculum in the classrooms. In contrast, LEESP aimed to achieve fundamental changes, including change in the operational structures of schools that would influence activities within the formal curriculum. The narrow interpretation of environmental education militates against the holistic teaching of geography as an interdisciplinary subject drawing content from both natural and human sciences (Tilbury, 1997; Huckle, 2002).

#### **12.3.4.2 Seeing EE as valuable to geography**

Given the long-standing human-environment tradition of geography, I had made an assumption, in this study, that the introduction of environmental education in the formal school system would enhance the quality of geography in terms of making it more contextually relevant and interesting. All eleven geography teachers I interviewed shared the view that environmental education could enhance geography, with some suggesting that it made the subject practical and real (see Chapter 10). The teachers who participated in LEESP's workshops claimed that they were integrating environmental education in geography topics such as soil erosion, vegetation, industry and energy with the first two ranking high on the list. Some felt that their awareness of the importance of environmental education to school geography increased after their participation in LEESP's workshops. A model school teacher said that when teaching common environmental issues, he made use of the learners' experience, as was suggested in LEESP, thus reflecting a shift towards a learner-centred pedagogy. Another teacher also claimed that her awareness of the central role of field work in geography had increased. How these assertions converged with practice is part of the discussion in the next two sections.

#### **12.3.4.3 Knowledge integration in geography lessons**

Consistent with the findings of the analysis of geography curriculum materials (see Section 12.3.3), there was a high level of integration of environmental concepts and issues in geography lessons in the research schools. This was especially the case where topics relating to environmental management were dealt with. This finding resonates with the teachers' responses on environmental activities going on in their schools (see Section 12.3.4.1). The focus on environmental management activities could be explained in two ways: Geography has a long-standing tradition of natural resources management, which is still emphasised in geography courses at the university level in Lesotho. This could also be a reflection of the influence of nature conservation movements in the region of southern Africa and in Lesotho (see Chapter 3, sections 3.5 and 3.6.1).

As is the case with the geography curriculum materials, there was a low level of integration of environmental issues in geography topics relating to geomorphology. This could suggest that the geography teachers did not operate beyond the syllabus and textbook content to cover other relevant information relating to global environmental issues. It could also be an indication that the teachers found such topics too abstract, having little contribution to make to an understanding of local environmental issues in Lesotho. This is probably due to the fact that, in Lesotho, environmental disasters resulting from geomorphologic processes, such as earthquakes, volcanic eruptions and floods, are not common. Emphasising environmental learning with regard to such topics would therefore require explicit curriculum guidelines.

A strong classification (absence of relations) was also noted between geography and other subjects, as well as between geography and the everyday knowledge of the learners, with the lessons observed at the model school showing a very strong classification (C++). Such a strong classification could be seen as a reflection of the residual disciplinary power of geography, undermining the integrated approach recommended by LEESP for the practice of environmental education. Furthermore, the lack of explicit relations between geography and learners' everyday knowledge

has the potential to marginalise learners of low ability, whose learning is generally context-dependent (Bernstein, 2000).

#### **12.3.4.4 Teachers' pedagogic practices**

The findings of this study indicate that there is a discrepancy between learner-centred pedagogy as conceived in LEESP, and the actual teaching of geography in the research schools. While the interview data indicates that teachers espoused learner-centred methods, the analysis of the lesson observation data revealed a predominance of teacher-centred and book-driven methods, characterised by a very strong framing (F++) with respect to the selection of content and the sequence of activities (see Section 11.4.1). The teachers generally positioned themselves as knowledge transmitters rather than knowledge facilitators. Their support for a transmissive way of teaching was also evident in the tendency of some teachers to dictate notes. In the few instances where teachers attempted to use interactive learner-centred methods such as group discussions and presentations, it appeared that the learners were either not used to the approach or uncomfortable with it. There was no evidence of general participation on the part of the learners, and or of critical engagement among them and with the teacher. In a recent study on the teaching of business education in Lesotho, Nketekete and Motebang (2008) also report the continuing predominance of teacher-centred methods.

The classroom observation data indicates that the social relations between the teacher and the learners were hierarchical, with teachers consistently retaining their authority. This finding contradicts the democratic vision of action competence as conceptualised in Chapter 3 and LEESP (see Chapter 6). Hierarchical power relations might have been reinforced by the conventional classroom seating arrangement, where the teacher's desk was in front of the learners who sat in almost permanent rows, as shown in Chapter 11 (see Figure 11.1). This classroom seating arrangement constitutes part of the hidden curriculum that might well have influenced teachers' and learners' perceptions of their roles in classroom interaction.

The results of this study also suggest that there is a heavy reliance on textbooks, which generally determined what the teachers taught, and in many cases, how they taught their lessons. This reflects a technical view of the curriculum, in terms of

which textbooks are seen as authoritative sources of information (see Section 4.4.1). Jitendra et al. (2001) warn that heavy reliance on textbooks, which emphasise factual information, is problematic in the sense that learners may not be able to handle complex information and understand issues as they exist in real world contexts. Thus, although the textbooks provide opportunities for the integration of environmental education into geography (see Section 12.3.3), giving them the power to dictate classroom practice probably constrained the teachers' creativity in applying innovative ideas from LEESP. Perhaps the over-reliance on ready-made textbook information in the research schools could explain the dominance of a descriptive approach, wherein the content was often decontextualised from the learners' real life experiences and presented as an objective entity supporting the *status quo*. This could endanger the position of geography in the school curriculum, especially when it is offered as an optional subject competing for curriculum space with other subjects (see Chapter 2).

In general this study illustrates that the LEESP intervention in the model school has had a little influence on geography classroom practice. The findings also suggest that the teaching of geography is lagging behind international trends and developments in the subject. In view of these findings, I ask the following questions, which may be interesting to geography teachers and educators in Lesotho: If geography is taught in this fashion, how will it contribute to the achievement of the Lesotho education ideals of sustainable development, as stated in the national policy documents? How can this modest change or non-change in secondary school geography be explained?

## **12.4 Explaining non-change and change in school geography**

I suggest that the teachers' emphasis on geography's disciplinary knowledge, and the dominance of teacher-centred methods in geography teaching in Lesotho could be explained in terms of the following aspects of the national context in Lesotho:

### **12.4.1 The influence of initial teacher education**

The compartmentalisation of geography content into components of physical and human geography evident in the research schools could be seen as a reflection of

belief in disciplinary knowledge, which may have been shaped by the knowledge of geography that the teachers acquired as school learners and during initial teacher education.<sup>7</sup> As stated in Chapter 2 (see Section 2.4.2), the geography education programme at the National University of Lesotho, where the teachers who participated in this research obtained their teaching qualifications, emphasises disciplinary knowledge and encourages a split between human geography and physical geography.

#### **12.4.2 The influence of public examinations**

Time pressure to cover examination syllabuses emerged as a challenge for most teachers in their attempts to use learner-centred methods in pursuit of the vision of action competence (see Section 10.7.1). This probably illustrates the complexity of introducing Western democratic teaching styles in a centralised education system where control and compliance is exercised through examinations (see Chapter 2). Such external control, though useful in maintaining national standards, could be seen as disempowering teachers, denying them the right to make autonomous curriculum decisions (Marsh & Willis, 2007). The problem of over-emphasis on public examinations has generally been seen as a cause of the continuity (rather than change) that has characterised many attempts at educational reform in Lesotho since independence in 1966 (see Chapter 2). It has also been identified as a possible constraint on the implementation of environmental education at the classroom level (LEESP, 2000; Mokuku et al., 2005). However, despite the obvious constraint of examinations to curriculum transformation in Lesotho, and as a recent study reported by Nketekete and Motebang (2008) and the findings of this research suggest (see for example Section 10.7.1), classroom teaching in Lesotho is still dominated by examinations. This could point to a policy tension between pursuing the democratic visions of the action competence philosophy underpinning environmental education, and the need to increase learners' achievements in public examinations (see also Section 7.6.5).

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<sup>7</sup> I note, however, that the way the teachers teach geography could also be influenced by the curriculum materials which also deal with the geography content in a fragmented way.

### **12.4.3 Socialisation of teachers**

As critical curriculum theorists and scholars argue, curriculum change should be seen as a social process situated within the history and culture of society (see for example Cornbleth, 1990; McLaren 2007). Following this argument, the lack of pedagogical change in the geography classroom needs to be explained within the broader socio-cultural, economic and historical contexts of Lesotho, as discussed in Chapter 2. The study provides evidence of a mismatch between LEESP's learner-centred pedagogical innovations and teachers' practices. As the literature reviewed in Chapter 4 suggests, teachers learn more about teaching from their experiences as students in the classrooms, and tend to emulate the teaching styles of former teachers and university lecturers that they considered outstanding (Lortie, 1998). In this study, as mentioned in Section 12.3.4.4, while some teachers in theory espoused learner-centred pedagogy and understood their role as that of facilitators, in practice they taught in a generally didactic manner, reflecting the technical view that content and learners are fixed entities and non-interactive (Prawat, 1992). These teachers are products of an education system that emphasises didactic teaching approaches (see Section 2.4.2), which are reinforced by examining practices in Lesotho. Their socialisation within this education system could have possibly influenced their own teaching habits. Drawing on my personal experience (but cf. Lortie, 1998), I note that learners in Lesotho generally admire teachers who use teacher-dominated methods and provide them with ready-made information. A similar experience is shared by Tabulawa (2004) within the context of Botswana. Such a situation conduces to the institutionalisation of teacher-centred methods in education systems. And "once pedagogical practices have been institutionalised they become resilient to major curriculum reforms" (King, as cited in Tabulawa, 1997, p.194), thus suggesting that those introducing curriculum reforms need to engage seriously with teachers' existing beliefs about teaching and learning as their point of departure.

### **12.4.4 Socialisation and family background of learners**

The dominance of teacher-centred methods in geography at the research schools can also be explained in terms of the culture and traditions of the Basotho people. As noted in Chapter 2 (see Section 2.4.1), according to traditional education patterns in

Lesotho, knowledge flow is hierarchical (from the elder to the younger) rather than horizontal. This, in interaction with the technicist aspects of the formal education system in Lesotho (see Section 2.4.2), may well influence learners' perceptions of their role vis-à-vis that of the teacher. It has emerged from the findings reported in chapters 10 and 11 that teachers' attempts to employ emancipatory learner-centred approaches are constrained not only by their beliefs, but also by student issues, such as their taciturnity, their difficulty with expressing themselves in English, and possibly their perception of role of the teacher. The literature suggests that learners come to school with an expectation of acquiring knowledge from their teachers, rather becoming centres of knowledge (Tabulawa, 1997).

Furthermore, although I did not explore the influence of family background on learners' responses to teaching strategies, it could be inferred that the LEESP pedagogic innovations conflict with the ways in which most Basotho children, particularly those from a poor rural background, have been socialised in their families and communities. Bernstein (2000) suggests that children from working class families often fail to make a clear distinction between family context and school/classroom context, implying that they are likely to be marginalised by formal school education. The same could be said for the majority of Basotho children. In the context of this study, it became apparent that the majority of learners could not engage in critical discussion as required by democratic learner-centred pedagogy, even when teachers tried to create opportunities for them to do so, through group discussions and presentations (see Chapter 11, section 11.4.3). They also did not have a 'critical voice' (Freire, 1972; Giroux, 1992; McLaren, 2007) to challenge knowledge as presented by the teacher and textbooks, and influence lesson activities in terms of the selection of content and the pace of the lessons (see Chapter 11, sections 11.4.1, 11.4.2 and 11.4.3). While this could be linked to difficulties with the use of English, it could also be a reflection of contradiction between family and school contexts. It would therefore seem that learners with high ability and English language proficiency will be in a better position to do well when teachers use learner-centred methods supportive of the vision of action competence. As Bernstein (2000) suggests, it is likely that most of these learners will come from affluent middle-class urban families. As such, it would seem that the introduction of the LEESP progressive idea of learner-centred pedagogy underpinned by action competence has the potential to

perpetuate the reproduction of class difference, as opposed to transforming society. This is especially the case in Lesotho, where examinations serve the purpose of selecting learners for further education and highly sought-after formal employment. By raising this issue I am not suggesting that the LEESP pedagogic ideas have nothing to contribute to national development in Lesotho. Rather, I am proposing that there is a need to institute mechanisms for checks and balances to reduce the possible negative influence of such grand progressive philosophies as learner-centred education, in terms of marginalising certain sectors of society.

The findings discussed in this section suggest that implementation of the LEESP democratic learner-centred pedagogy in school geography is being constrained by, among other things, the socio-cultural context in Lesotho. A similar experience with the failure of learner-centred pedagogy is reported in Namibia, where research shows that the Danish ideology of liberated education was not compatible with local contexts (Geckler cited in Chilsholm & Leyendecker, 2008). It would be expected that the Danish consultants would use the Namibian experience they gained prior to LEESP (see also Section 6.3), to adjust their notions of learner-centred pedagogy to the Lesotho or African context. As noted in Chapter 4, this finding confirms the observation that externally funded curriculum development projects often have little impact on shaping classroom practice (Chilsholm & Leyendecker, 2008; Tabulawa 2009).

#### **12.4.5 Signs of change**

Notwithstanding the findings as summarised in the discussion above, this study reveals that there are some signs of the existence of environmental education-related pedagogy, especially in those lessons taught by the teachers who received LEESP training. For example, the use of simulation by Teacher A, to represent a real community life setting in resolving environmental issues, was remarkable when looked at against the teaching strategies recommended by LEESP (see Section 11.4.3). There were also outdoor learning activities that I observed in a number of lessons. While outdoor learning has always been a traditional method of study of school geography in Lesotho, some learning activities I observed in the research schools took a form of education *in* the environment and laid a foundation for

education *for* the environment. Moreover, the use of the internet, though largely influenced by the global diffusion of ICT into schools, provides some evidence for teachers' use of inquiry teaching and learning strategies.

## **12.5 Lessons learned**

Apart from supplementing previous research on the conceptualisation and implementation of environmental education in Lesotho (Mokuku et al., 2005; Ansell, 2006; Monaheng, 2007), this study provides new insights into the processes of curriculum reform and change. Lessons learned from the findings of this study can inform curriculum research and practice, the teaching of geography, and environmental education practice, in the context of Lesotho where there is paucity of research on the implications and consequences for schools of the government decision to introduce environmental education.

### **12.5.1 Curriculum change processes**

This study makes a contribution to an understanding of the complex nature of curriculum reform and change as a *contextualised social process* (Cornbleth, 1990), particularly in the context of African developing countries. The study has shed light on how the features of an education system and the local context can exercise *power and control* (Bernstein 2000) so as to undermine global curriculum discourses, especially those promoted by external donor agencies. It reveals how the democratic vision of a Danish concept of action competence was undermined by the socio-cultural and educational contexts in Lesotho. Whereas LEESP envisaged active and committed learner participation, the study revealed that most lesson activities were teacher-directed (see Section 12.3.4.4). The notion of dialogue underpinning action competence appears to have been constrained by structural and contextual factors influencing schools' operations. Because these factors are deeply rooted in the culture of society and history of formal education in Lesotho, externally influenced curriculum reform needs to be co-constructed over time between local educational practitioners and external consultants in order for the new ideas to take root. The study nevertheless illustrates that at the confluence of a new curriculum policy and

local contexts there is, after all, some change, that we should not lose sight of. Sustaining this change will require political will, commitment and the institutional capacity to create supportive structures.

### **12.5.2 The teaching of geography**

The goals of environmental education are hard to achieve in a subject which emphasises disciplinary knowledge taught in fragmented themes. In the case of this study, the power of geography disciplinary knowledge undermined an integrated approach (both within and across the curriculum), as espoused by LEESP. This is unexpected, given that school geography is generally seen as an integrated subject drawing knowledge from natural and human sciences. The compartmentalisation of geography content into the components of physical and human geography, evident particularly in the geography curriculum materials (see chapters 8 and 9), appears to have insulated the subject from the infiltration of sustainable development themes relating to the social and political dimensions of the environment, as envisaged by LEESP and the International Geographical Union (see IGU, 2007). The teachers generally interpreted EE in the narrow sense of environmental resources management, thus foregrounding the biophysical dimension of the environment to the neglect of the other dimensions. This was also evident in classroom teaching, where environmental concepts and issues were emphasised only in topics relating to physical geography, even though such issues also had political and social dimensions. This may be seen as reflecting not only a narrow understanding of environmental education, but also a lack of clear knowledge of the nature of school geography.

### **12.5.3 Teachers as change agents**

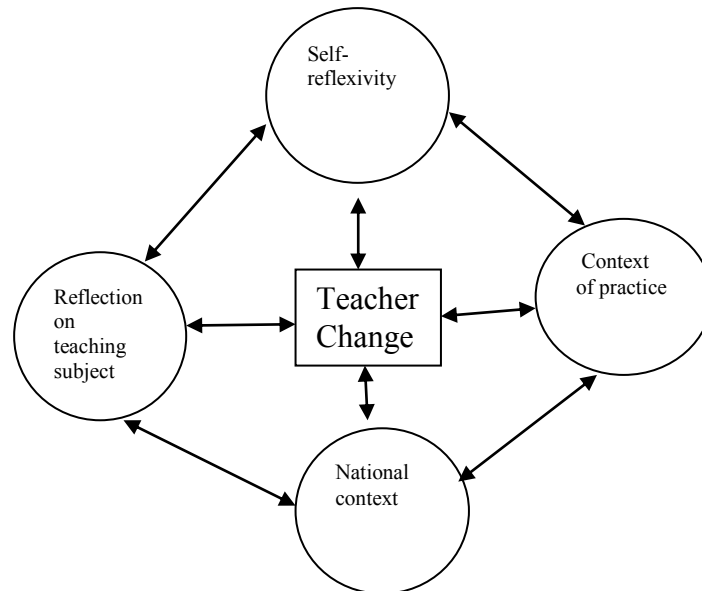
The results of this research resonate with the argument that teachers can be both change agents and obstacles to change (Prawat, 1992). The study illustrates that however enthusiastic implementing agents may be about proposed change, there is a tension between policy intents and implementation, given that curriculum change is mediated through teachers' constructs such as their prior knowledge, beliefs and experiences (Spillane et al., 2002). These constructs interfered with the geography teachers' understanding of environmental education in relation to geography. Moreover, following on previous research in other national contexts, the study has

confirmed that teachers have a tendency to associate new curriculum ideas with what they have been practising before (Spillane et al., 2002; Bilgnaught, 2008). Some teachers felt that LEESP only introduced minor variations to the ways in which they had already been applying learner-centred methods. This appears to have interfered with their interpretation and enactment of the democratic principles of learner-centred pedagogy.

The influence of teachers' epistemologies notwithstanding, the study revealed that contrary to the view that teachers are autonomous curriculum decision-makers (Marsh & Willis, 2007), they are to a great extent subject to the authority of textbooks and external examinations. This might have disempowered the teachers and stifled their creativity. Unless teachers regard themselves as active curriculum decision-makers in their own right and operate as change agents rather than as mere curriculum implementers, fundamental changes will be difficult to achieve at classroom level. It is acknowledged that curriculum change requires teachers to take risks and let go of their existing beliefs and established practices so as to be open to new possibilities (Prawat, 1992; Fullan, 1993; Wilmot, 2005).

## **12.6 Recommendations for supporting curriculum reforms**

The lessons learned from this study point to the need for teacher professional development programmes in Lesotho to deal with structural barriers such as teachers' epistemological beliefs. Drawing on the literature on teacher professional development (Shulman, 1987; Wilmot, 2009; Martin, 2008), as reviewed in Chapter 4, I propose a reflexive teacher professional development model, which can enable teachers critically to examine their prior educational experiences as school learners. After Wilmot (2005, 2009), I envisage a model which can empower teachers both epistemologically and politically, to the level where they can challenge the boundaries that insulate them from curriculum developers and textbook writers. Figure 12.1 is a diagrammatic representation of this model.



**Figure 12.1: A reflexive model for teacher professional development**

As shown in Figure 12.1, teacher change is at the centre of the reflexive process, suggesting that it is a product of the reciprocal interaction of the four areas of reflexivity. *Self-reflexivity* entails personal reflection similar to Pinar’s (2004) autobiographical method of curriculum change, where teachers can reflect on their cultural background and their schools days, especially how they experienced geography learning. This can help them to identify aspects of geography teaching they would want to change, rather than simply emulating their former teachers. *Reflection on the teaching subject* involves reflecting on the nature of geography, its role in national development, and the best ways of teaching it within the national and specific school and community contexts. It is to be hoped that this kind of reflection will empower teachers both epistemologically and politically, increasing their awareness of geography and enabling them effectively to use syllabus and textbooks as teaching and learning resources. Reflecting upon the *national context* could enhance teachers’ understanding of the role of geography in national development, and promote awareness of relevant curriculum issues. Lastly, in the *Context of practice* the focus is on opportunities and threats associated with specific school and classroom contexts.

Reflecting on these areas could improve teachers’ pedagogic content knowledge as conceptualised by Shulman (1987) and Martin (2008). At the initial teacher education level, this model could, as Corney (2000, p. 326) suggests, “provide student teachers with opportunities to become more aware of their pre-conceptions [and pre-misconceptions of geography] and their reasons for holding them”. Thus student

teachers can begin to think more critically about the nature of geography and the best ways of teaching it. A more elaborate illustration of this model is provided in Appendix G.

Other recommendations are as follows:

- The geography secondary school curriculum needs to be reviewed and organised in a more integrated manner, to incorporate issues of sustainability and the real life experience of the learners in all topics. This could increase geography teachers' epistemological awareness of the subject and its significant role in national development.
- Revision of the examination structure is also needed. Including a project component in the geography examination would enable assessment of action competence skills. Although some respondents at ECOL expressed concern about the high cost of including a project component in assessments, this would be an incentive for geography teachers to teach in a manner that would encourage the development of action competence skills.
- Finally, given that Lesotho does not seem to have the capacity to finance curriculum reforms (see Section 12.3.2), which renders the country dependent on donor funding, I reiterate Monaheng's (2007) recommendation that there is a need for a more effective policy environment in order to make the best use of donor-funded curriculum projects.

### **12.7 Limitations of the study**

The study did not benefit from research-based information on the geography teachers' personal theories about teaching and learning and classroom practices prior to the LEESP intervention in the model school. This information would have been useful in terms of understanding shifts in geography content and pedagogy. To minimise the potential impact of this limitation, I used two other schools that did not receive training in environmental education to establish a control case to better perceive whether there was any change in geography content and pedagogy at the model school following the LEESP intervention. The resonance of this study with the findings of a previous study conducted by Mphale (2001) prior to the LEESP

intervention in the model schools (see Section 11.3.3), also provides evidence for the claims made above about the current state of geography teaching in Lesotho.

The study did not canvass the views of learners on the content and pedagogy of geography. This would have been a useful triangulation strategy for validating the geography teachers' claims about the existence of environmental education in the formal curriculum of their schools and their pedagogic practice. However, as stated in Chapter 1 (see Section 1.4), exploring the curriculum as attained would have extended the research beyond what was possible with available resources and time. Lastly, I conducted the fieldwork part of this research in the model school four years after the end of the LEESP intervention. There may well therefore have been other subsequent developments that teachers were not fully aware of, but which had influenced their epistemological views about the subject and how it should be taught.

## **12.8 Possibilities for further research**

While there are many possibilities for further research, four aspects are of prime importance. First, the methods of this study can be extended to other model schools and subjects to develop a bigger picture of how curriculum innovations introduced via environmental education may be shaping school subjects in Lesotho.

Secondly, I established through interviews with teachers and classroom observations that learner participation in lesson activities was not as it ought to have been. But the study did not generate enough evidence to account for this in terms of broader socio-cultural and economic contexts. Nonetheless, I reached the tentative conclusion that implementing learner-centred pedagogy underpinned by action competence is likely to marginalise learners with a rural and poor family background, and thus perpetuate class division in Lesotho (see Section 12.4.4). Hence, further research to explore how learners from different family backgrounds respond to democratic learner-centred pedagogy could enhance an understanding of the implications of the LEESP curriculum reforms in the context of Lesotho.

Thirdly, evidence generated through interviews with teachers suggests that integrating EE into geography makes the subject interesting, real and practical. However, I did

not corroborate this claim with learners' views and analysis of their work, which would have probably generated insights into the possible impact of EE on geography learning. Research could be conducted to establish whether or not the LEESP learner-centred pedagogy grounded in a liberal democratic vision of action competence can indeed emancipate learners in terms of increasing their participation in community activities. It could also be interesting to explore whether or not such pedagogic practices can increase learners' achievement in public examinations.

Finally, in this study, working from the Lesotho context and teachers' biographic details (see Table 10.1), I have made inferences about why teachers taught the way they did, but without investigating the teachers' personal stories to get information on the sources of their professional knowledge. Further research in this area can lead to a deeper understanding of the problem of change in teachers' pedagogic practices.

## **12.9 Conclusion**

The chapter has reflected on the methodology and theories used in this study. It has illustrated the value of using multiple methods of data generation and supplementary theories in qualitative research. I have also summarised the key findings, providing answers to the four research questions listed in Chapter 1. The study shows that environmental curriculum reforms in Lesotho have been influenced by local concerns and global developments relating to sustainable development. Formal education is expected to act as a vehicle to transform society towards a western view of democracy and sustainable development. As a strategy to achieve this transformation, LEESP introduced fundamental curriculum reforms that espoused a learner-centred pedagogy grounded in the notion of action competence. This case study has explored how these reforms have shaped school geography in the model school in the wake of the LEESP intervention. The results reveal that generally there has been relatively a little change at the interface between environmental education and school geography, especially at the level of classroom practice. Classroom teaching is generally didactic, supporting the goals of the technical knowledge interest, rather than empowering learners as was envisaged in LEESP. This may suggest that the geography teachers did not manage to conceptualise environmental education in their specific contexts, probably due to the top-down approach used in the LEESP dissemination workshops.

More importantly, a critical analysis, drawing on both the empirical evidence and national context, suggests that environmental education as conceived in LEESP is an embodiment of curriculum policy intentions that are incompatible with multiple contextual realities in Lesotho. As such, the envisaged curriculum change would require changing the existing structures, including teachers' endogenous beliefs, school organisational structures and examination systems. Despite an awareness of some of these potential constraining structural and contextual factors among the education bureaucrats in Lesotho (see sections 2.4.2, 12.4.2 and 12.4.3), it appears from the findings of this study that there has not been any policy initiative to create supportive structures beyond the LEESP's intervention (see Section 12.3.2) or to make changes to the examination system. Could this suggest that the Lesotho government's decision to adopt and implement environmental education (with its constructs of action competence and learner-centred pedagogy), as part of the global *Agenda 21*, was merely "political symbolism" (Jansen 1998, 2001) to gain international credibility for economic competitiveness? If this is the case, such an approach could make curriculum reform processes in Lesotho vulnerable to international manipulation and hegemony, rather than responsive to real national needs. I conclude with the following quotation, which speaks more directly to my findings in this study:

[...] efforts to integrate environmental education activities into schools, though noble and not insignificant, are dwarfed by the power [and control] of the dominant educational discourse [emphasising disciplinary knowledge and examination standards], which serves different, arguably anti-environmental, ends. (Gruenewald, 2004, p.74)

In this regard, the study provides new insights with the potential to inform an understanding of the complex process of curriculum reform in the specific national context of a developing country, where innovations are often externally driven.

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## APPENDICES

### Appendix A: List and profiles of research participants

Name	Profile
M. Nketekete (respondent 2)	Former subject specialist for Business Education at NCDC, now acting Director-NCDC
Matlejane (respondent 3)	Former Director of NCDC, now Inspector
T. Khalieli (respondent 4)	Former science subject specialist at NCDC, now a teacher at the private school
M. Sekokotoana	NCDC Subject specialist for English. Participated in LEESP as a member of LEESP task team
M. Khaketla	NCDC Maths subject specialist. Participated as a member of the task team
F. Majoro	Former NCDC geography subject specialist. Participated in LEESP as a member of the task team
M. Maketela	NCDC subject specialist for Home Economics. Participated as a member the task team
M.Matsau	Former NCDC subject specialist for Sesotho. Now Inspector at Central Inspectorate
K. Thamae (respondent 1)	Subject specialist – Development Studies at NCDC also LEESP project coordinator

#### Members of the LEESP monitoring and research team

M. Jobo 2	Lecturer at Lesotho College of Education
T. Mokuku 1	Senior lecturer at National University of Lesotho
T. Mathafeng 3	Evaluator at National Curriculum Development Centre

#### Staff at Examinations Council of Lesotho

Mrs. Ralise	Former Registrar and member of the National Curriculum Committee (NCC). Now retired
Mrs. L. Ntoi	Former science subject officer, now deputy registrar and acting registrar
Mrs. M. Ntlatlapa	Subject officer responsible for social science subjects including geography. Former geography subject specialist at NCDC

#### Members of the LEESP project steering committee (PSC)

Mr. P. Phamotse	Former Chief Inspector for primary education, Chief Education Officer (CEO) for primary education based at Central Education Inspectorate
Mrs. L. Maqalika-Lerotholi	Inspector responsible Geography at Central Inspectorate, Chief Inspector. Now country Director of IDM.
Mrs. Khoeli	Inspector for tertiary education, now Chief Education Officer (CEO) for tertiary education

N.B. others did not have full details. Hence we had informal discussions (e.g. Dr. Polaki for head of school of Eductaion- NUL, Mrs. M. Monaheng and officer in the Ministry of Planning.

## **Appendix B: Interview questions**

### **Interview guide for members of the LEESP Steering Committee**

1. How did you become a member of this committee?
2. When you were invited to serve in this committee, how did you feel?
3. What were the functions of this committee?
4. Were you provided with an opportunity to examine why EE was introduced in Lesotho?
5. How often were your meetings?
6. Who chaired your meetings?
7. Can you describe the process through which decisions were made?
8. What were the national priorities/needs/problems to be addressed by the EE programme?
9. Can you remember how these priorities/needs were identified/determined?
10. Would you say the composition to the steering committee was representative of all the stakeholders?
11. What challenges were faced during the project period?
12. Is there any other information that would want to share with me about LEESP/EE?

### **Interviews with NCDC Staff- LEESP Task Team**

Purpose: To understand the social interactions, in terms of power relations between LEESP Danish consultants and members of the NCDC professional staff, associated with conceptualisation and implementation of LEESP.

1. How did you become a member of the LEESP task team?
2. What was your role in LEESP activities?
3. Were you provided with the opportunity to examine why EE was introduced in Lesotho?
4. How were operating as the LEESP task team (meeting, consultations etc.)?
5. Can you describe the process through which decisions were made?
6. In your opinion would say all the stakeholders were involved in LEESP activities?
7. Did you participate in the development of the reference note?
8. What challenges were faced in the implementation of LEESP?
9. Is there any relevant additional information that you would want to share?

### **Interview guide for geography teachers**

#### **Biographic details**

1. What is your highest qualification certificate?
2. Have you done geography as one of your teaching subject?
3. For how many years have you been teaching?
4. For how many years have you been teaching geography?
5. What were your reasons for choosing geography as one of your teaching subjects?

#### **Dissemination of EE**

1. When did you first hear about EE?
2. Do you know why your school was chosen as a model school?
3. What were your first impressions about EE, as introduced by LEESP?
4. How many workshops did you attend?
5. What did you understand your role to be in these workshops?
6. In your opinion did you have an opportunity to make input/suggestions into the workshops activities?
7. How were the activities of the workshops determined?

8. What did you like most about these workshops?
9. What did you like the least?
10. Is there any other information about these workshops that you would want to tell me?

**Geography teachers' understanding of EE**

11. What is your understanding of EE?
12. When LEESP introduced EE in your school, what did you understand to be the main goals of EE?
13. What do you understand by the concept of action-competence to mean in geography teaching?

**How teachers integrate EE into geography**

14. Do you integrate EE into your geography teaching?
15. In which topics of geography do you integrate EE?
16. How do you integrate it?
17. Are there any environmental education activities going on in the school?
18. How do you apply the concept of action-competence in your teaching?
19. During the LEESP workshops, a notion of "conflicting interests" was one of the common terms used. How did you understand it?
20. How do you promote an understanding of conflicting interests?
21. In your opinion, does EE add something new to geography? In what ways?
22. Would you say your attendance of LEESP workshops has influenced your understanding the role of EE in geography? In what ways?

**Teachers' views of knowledge and teaching and learning**

23. What is your understanding of geography as a school subject?
24. What do you think is the purpose of teaching geography in Lesotho?
25. What values should be taught in geography?
26. Are you teaching the values you mentioned?
27. What skills should be taught?
28. Are you teaching these skills?
29. Do you enjoy teaching?
30. What is it that you like most about teaching geography?
31. What is it that you do not like about teaching it?
32. Do you think there are similarities between geography and EE?
33. Give examples of such similarities.
34. What do you consider to be the best ways of teaching?
35. What do you consider to be the best ways of learning geography?
36. What do you understand the role of a teacher to be in teaching and learning situation?
37. What is your view of the role of a learner in a teaching and learning situation?
38. How do you ensure that students are learning in your lessons?
39. Do you use learner-centred methods?
40. How do you use them?
41. Have you been using these methods before your involvement with LEESP?
42. Would you say your attendance of LEESP workshops has influenced your view of geography and the way in which you are currently teaching it?

**Factors facilitating and constraining LEESP intended changes**

43. What opportunities do your school and its surroundings offer for using teaching methods that promote environmental education?
44. Are there any other factors that facilitate integration of EE?

45. What challenges do you face in implementing EE in Geography?

46. How do you deal with these challenges?

### **Appendix C : Classroom observation schedule**

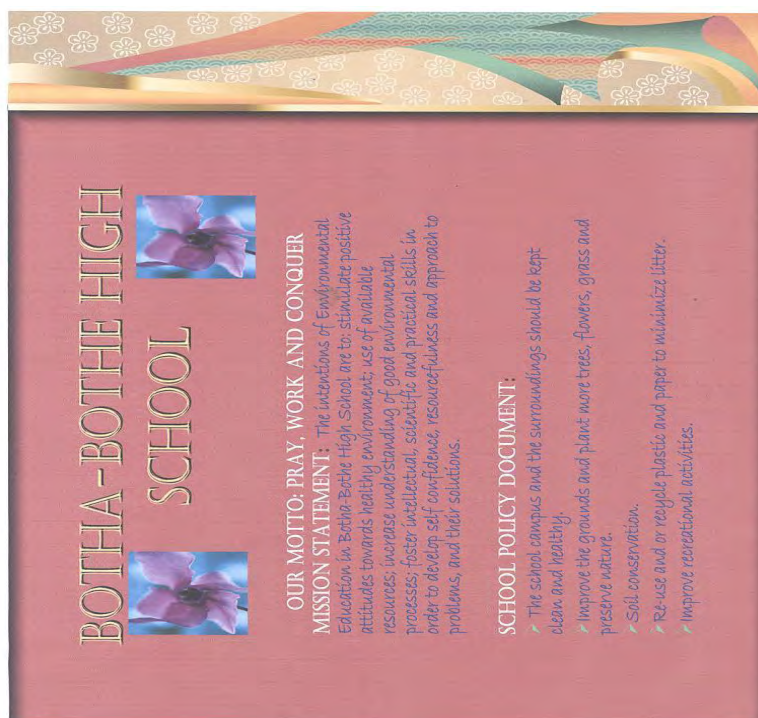
**Name of the teacher :** .....

**School and class level:** .....

**Date of Observation:** .....

<b>Time</b>	<b>Lesson Activities</b>	<b>Comments</b>

## Appendix D: School Environmental Policy



## Appendix E: A tool for analysing the degree knowledge integration

Analytical categories	Indicators	Coding
<b>Relations between geography content and environmental education</b>	The lesson generally has high integration of environmental concepts and the teacher emphasises these concepts appropriately The lesson has some content relating to environmental education	C- - C-
	The teacher does not make an explicit mention of environmental concepts even when there opportunities The lesson has no content relating environmental education	C+ C++
<b>Relations between geography content and the content of other subjects</b>	The teacher makes an explicit reference to and use of relevant content of other subjects as necessary The lesson has some content from other subjects	C- - C- C+
	The lesson does not make use of content from other subjects There is no mention of knowledge from other subjects despite the opportunities offered by the topic taught	C++
<b>Relations between geography content everyday knowledge</b>	The teacher explicitly makes use everyday knowledge of the learners There is some reference to learners everyday knowledge	C- - C-
	There is no explicit reference to learners everyday knowledge There is no reference to learners everyday knowledge even there are opportunities to do so	C+ C++

## Appendix F: A coding system for framing

Analytical categories	Coding	Indicators
Selection of content	F++ F+ F- F- -	<p>Teacher states the topic clearly and specifies the objectives. Teacher defines key concepts, gives detailed explanation and summarises the main points. There is no interjection by the learners. Knowledge is presented as a given, rather than challengeable. The teacher gives notes, without learners' input.</p> <p>The teacher draws attention of the learners to the main points, but also creates opportunity for learners to contribute and add something to the content. Pays some attention to interjection by the learners.</p> <p>Learners have some control on the selection of content. They are allowed to contribute content other than that pre-determined by the teacher</p> <p>Learners have a greater control in selecting content. The teacher always pays attention to learner's opinions.</p>
Sequence	F++ F+ F- F- -	<p>The teacher has a greater control on the sequence of parts content items and lesson activities without interjection by learners.</p> <p>The teacher has control but is flexible to change the sequence depending on learners needs.</p> <p>Learners have some control over sequence. The teacher sometimes varies the sequence depending on learners' interjection.</p> <p>Learners have a greater control over sequence. They are often given opportunity to vary the sequence.</p>
Pace	F++ F+ F- F--	<p>The teacher mostly times all lesson activities and does not allow learners to articulate ideas.</p> <p>The teacher determines the pace of the lesson, but also allows room for learners' interjection, and sometimes varies the pace accordingly.</p> <p>Learners have some control on the pace of lesson activities. They are sometimes allowed to determine the pace.</p> <p>Learners have an apparent control over lesson activities. When engaged in activities, they work at their own pace.</p>
Social interaction	F++ F+ F- F- -	<p>Teacher retains authority by giving direct orders. The teacher is keen to maintain order. Clear instructions are almost given by the teacher. Learners talk when responding to teacher's questions, and they rarely ask questions. Relations between the teacher and learners are hierarchical.</p> <p>Teacher maintains authority, but sometimes allows room for open relations and negotiations</p> <p>Relations between the teacher and learners and among the learners are open. Control of the teacher is implicit.</p> <p>Relations between the teacher and learners are informal. He/she makes jokes to release tension.</p> <p>Teacher creates contexts for dialogue and critical engagement.</p>
Utilization of physical space	F++ F+ F- F- -	<p>The teachers maintains a fixed position</p> <p>Teaching is confined to the classroom and learners are in their fixed positions</p> <p>The teacher maintains a designated position, but occasionally moves around to check learners work. The teacher refers to some examples outside the classroom for direct observation</p> <p>The teacher frequently changes position and allows learners to work in different corners of the classroom.</p> <p>Teaching occurs in another room other than the conventional classroom</p> <p>The largest part of the lesson time is spent outdoor for direct observation of geography concepts and environmental issues (outdoor learning).</p>

Adapted from Hoadley (2007) and Bertram (2008).

## Appendix G: An elaborated model of teacher professional development

Area for reflection	Reflexive questions
Self-reflexivity	<ul style="list-style-type: none"> <li>• What aspects of teaching that I experienced in my school days would I want to change?</li> <li>• Why did I go to school?</li> <li>• Why did I join the teaching profession?</li> <li>• Why did I choose to teach geography?</li> </ul>
Reflection upon the subject	<p><b>Epistemological empowerment</b></p> <ul style="list-style-type: none"> <li>• What is the nature of school geography?</li> <li>• What role should it play in national development?</li> <li>• What improvements are needed in the subject?</li> <li>• What are the best ways of teaching it in my context?</li> <li>• Can geography play any outstanding role in community?</li> </ul> <p><b>Political empowerment</b></p> <ul style="list-style-type: none"> <li>• What assumptions are underlying the decisions that curriculum developers and textbook writers made?</li> <li>• Do these assumptions hold in my context?</li> <li>• How best can I use these curriculum materials?</li> <li>• What are the forms of their hidden meaning?</li> </ul>
Reflection on broader national context	<ul style="list-style-type: none"> <li>• Why is geography part of the national curriculum?</li> <li>• What national problems/challenges can I address through geography given its nature and scope?</li> <li>• What changes are needed in geography?</li> </ul>
Context of practice	<ul style="list-style-type: none"> <li>• What opportunities are there within the school, classroom and neighbourhood for effective teaching of geography (with environmental dimension)</li> <li>• What are the possible constraints? And how can I optimally address them?</li> </ul>