



**Thesis by
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**DOCTOR OF PHILOSOPHY
of
Rhodes University**

**Networking: Enabling Professional
Development and Institutionalisation of
Environmental Education Courses in
Southern Africa**

April 2007



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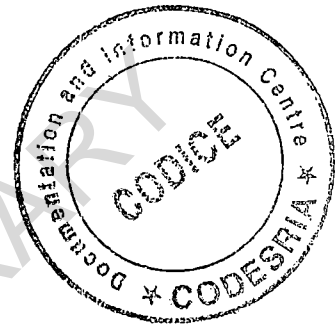
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**NETWORKING: ENABLING PROFESSIONAL DEVELOPMENT AND
INSTITUTIONALISATION OF ENVIRONMENTAL EDUCATION COURSES
IN SOUTHERN AFRICA**

THESIS



Submitted in fulfillment of the requirements for the
Degree of DOCTOR OF PHILOSOPHY of
Rhodes University

JUSTIN KALABA LUPELE

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ABSTRACT

This study was aimed at understanding how networking can enable or constrain professional development and institutionalisation of environmental education courses in southern Africa in the context of the Course Development Network (CDN), a project of the Southern Africa Development Community Regional Environmental Education Programme (SADC REEP). The study involved 12 institutions (each institution was represented in the CDN by a staff member) in eight SADC member states. It was contextualized through a review of social, political, environmental and educational developments in southern Africa, with specific reference to regionalization processes, as the SADC REEP is constituted under this post-colonial political framework.

Relational philosophy informed the research process and methodology. The philosophy underpinned three distinct, yet related theoretical perspectives namely: critical realism, which provided the ontological perspectives of the study; Actor Network Theory; and Community of Practice, which provided the epistemological perspectives.

Data was generated during a 33-month period in southern Africa and 12 months in the United Kingdom (and on a one week visit to Italy). During a 12 month Split Site Commonwealth Scholarship award, tenable at Manchester Metropolitan University in the United Kingdom, I studied the Environment and School Initiative (ENSI) and the Sustainability Education for European Primary Schools (SEEPS), to examine whether the same mechanisms that made them successful would apply to the CDN in the context of southern Africa. While these two case studies provided useful insight into the relationship between networking, professional development and institutionalization of environmental education programmes, they were not the main focus of the research.

Data analysis was mainly through inductive, abductive and retroductive modes of inference. Inductive data analysis was done by means of Nvivo – a computer software package used for qualitative data analysis. The software aided in revealing features and relationships in the data in more depth as it allowed flexibility in working with data. Abduction is the interpretation of a phenomenon by means of a conceptual framework. In

this study, I used Actor Network Theory (ANT) (Latour & Woolgar, 1979; Callon, 1986) and Community of Practice (COP) (Lave, 1988; Lave & Wenger, 1991; Fullan, 2003) as analytical conceptual frameworks to probe networking and professional development respectively. Data on institutionalisation of environmental education courses was analysed by means of retroductive mode of inference, which is a thought operation that enables the understanding of social reality beyond what is empirically observable or experienced.

This study reveals that there were a number of necessary (internal) and contingent (external) factors that enabled or constrained networking, professional development and institutionalisation of environmental education courses in the context of the CDN. The key factors included existing cultural capital, donor political economy, power relations, poverty related factors and social transformation trends. The study found that relational approaches and the use of three relational theoretical lenses provided a broader lens which enabled this study to identify different dynamics, greater ontological depth and understanding of the relational dynamics and relations at play in the CDN beyond the participants' experience and observable events. The study also contends that networking can provide a support structure for social transformation and change in environmental education.

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DEDICATION

This work is dedicated to my wife Edrivione and children Chisala,
Bwite and Lumbanya for their endurance and the missed love
during my long absence from home as
I pursued this study.

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LIST OF ACRONYMS

ACE	Advanced Certificate in Education
AGM	Annual General Meeting
AIDS	Acquired Immuno-Deficiency Syndrome
ANC	African National Congress
ANT	Actor Network Theory
BETD	Basic Education Teachers' Diploma
CBNRM	Community Based Natural Resource Management
CDC	Curriculum Development Centre
CDN	Course Development Network
CERI	Centre for Education Research and Innovation
CPD	Continuing Professional Development
DANCED	Danish Cooperation for Environment and Development
Danida	Ministry of Foreign Affairs
DRFN	Desert Research Foundation of Namibia
DSF	Data Source File
EE	Environmental Education
EEASA	Environmental Education Association of Southern African
EESU	Environmental Education and Sustainability Unit
ENSI	Environment and School Initiatives
ESD	Education for Sustainable Development
FGD	Focused Group Discussion
FN	Field Notes
GDP	Gross Domestic Product
GFEESC	Gold Fields Environmental Education Service Centre
HEI	Higher Education Institution
HIV	Human Immunodeficiency Virus
ICT	Information and Communication Technology
IMF	International Monetary Fund
INSET	In-Service Education and Training
ITE	Initial Teacher Education
IUCN	International Union for the Conservation of Nature
LEESP	Lesotho Environmental Education Support Project
Med	Master of Education
MESA	Mainstreaming Environment and Sustainability in African Universities
MMU	Manchester Metropolitan University
MOU	Memorandum of Understanding
NEEP	National Environmental Education Programme
NEEP-GET	National Environmental Education Programme-General Education and Training
NEPAD	New Partnerships in African Development
NGO	Non Governmental Organisation
NIED	National Institute of Educational Development
NUL	National University of Lesotho
OCED	Organisation for Economic Co-operation and Development
RDDA	Research Develop Disseminate and Adopt
REES	Regional Environmental Education Support Project
RU	Rhodes University
RUEESU	Rhodes University Environmental Education and Sustainability Unit
SACU	Southern African Customs Union

SADC	Southern African Development Community
ELMS	Environment and Land Management Sector
REBP	Regional Environmental Education Programme
SADCC	Southern African Development Coordinating Conference
SAIDE	Southern African Institute of Distance Education
SE	Sustainability Education
SEA	Swaziland Environmental Authority
SEED	School Development Through Environmental Education
SEEN	Support for Environmental Education in Namibia
SEEPS	Sustainability Education for European Primary Schools
SEJA	Swaziland Environmental Justice Agenda
Sida	Swedish International Development Agency
SNTC	Swaziland National Trust Commission
TED	Teacher Training Department
UNCED	United Nations Conference on Environment and Development
UNDESD	United Nations Decade for Education for Sustainable Development
UNECE	United Nations European Economic Commission
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNISA	University of South Africa
UNISWA	University of Swaziland
UNDP	United Nations Development Programme
USA	United States of Africa
WCED	World Commission on Environment and Development
WEEC	World Environmental Education Congress
WESSA	Wildlife and Environmental Society of South Africa
WSR	Workshop Report
WSSD	World Summit on Sustainable Development
WWF	World Wide Fund for Nature
ZEP	Zambia Education Programme

CHAPTER 1

INTRODUCTION TO THE STUDY

1.1 INTRODUCTION

This study is situated in southern Africa. The African sub-region is made up of 14 countries which form the Southern Africa Development Community (SADC). This is an intergovernmental organisation whose major objective is to achieve development and economic growth and regional integration (details of SADC's overall objectives are discussed in section 2.4.1). Figure 1.1 shows the 14 current member current member countries of SADC.

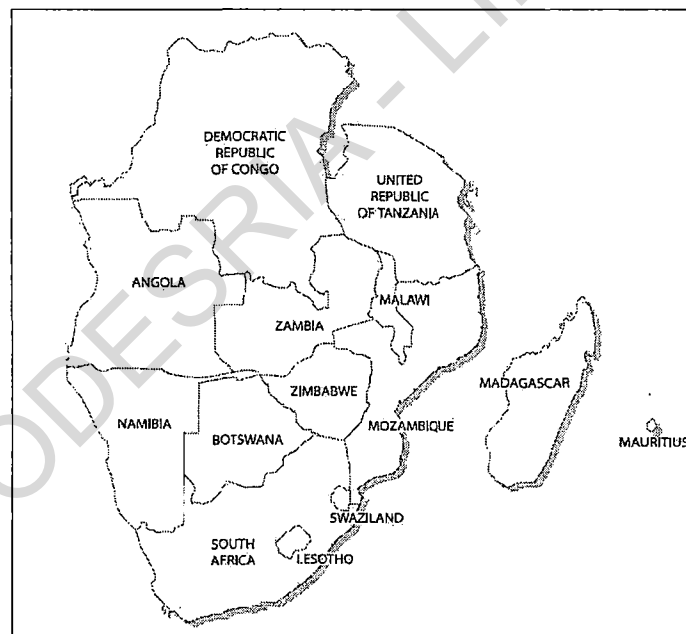


Figure 1.1 SADC member states

This study results from a desire among environmental educators in southern Africa to exchange information, share good practice and enable collaboration in course development processes. They have networked informally by sharing knowledge and

course materials which have been adapted from one context to the other since the early 1990s. The formal SADC Course Development Network was established by the SADC Regional Environmental Education Programme (SADC REEP) in 1999 and was funded by Sida¹(for details on SADC REEP see section 1.4).

The Course Development Network was strengthened with additional funding from Danida² between 2001 and 2004. This relatively formalised network called the Course Development Network (hereafter called the CDN) was part of the SADC Regional Environmental Education Support Project (SADC REES), a project under SADC REEP (see section 2.1). This study researches the CDN by investigating how professional development and institutionalisation of environmental education in 12 institutions in eight countries in southern African countries (Zambia, Botswana, Namibia, South Africa, Lesotho, Swaziland, Mauritius and Malawi) were enabled through networking. This chapter introduces the study by providing a brief background on the CDN, my personal biography and the SADC REEP which anchored the CDN. The chapter also provides the objectives and motivation for the study, research question/ purpose of the study, and an overview of the structure and content of the study.

1.2 BRIEF INTRODUCTION TO THE CDN

The Regional Environmental Education Support (REES) Project was a Danida project (the project was originally developed under DANCED) which was established with the aim of strengthening processes and capacity for education, training and promoting public awareness in relation to sustainable environmental management in SADC (Carl Bro, 2001). The project was designed to support, and was implemented under, the SADC REEP. It was conceptualised and implemented through four key sub-projects as listed below (Carl Bro, 2001:v):

¹ Swedish International Development Cooperation Agency.

² Danish Ministry of Foreign Affairs.

- Sub-project 1 – Course Development Network, which was aimed at strengthening environmental education course development in the region.
- Sub-project 2 - NGO Support, aimed to support capacity building in NGOs in the region;
- Sub-project 3 – Cooperation amongst Danida funded bilateral projects in Lesotho, Namibia and South Africa;
- Sub-project 4 – Regional policy support whose aim was to support environmental education policy development and implementation in the region (REES, 2002).

This study focuses on sub-project 1- the CDN. The aim of setting up the CDN was to broaden and strengthen environmental education capacity and professional development in the region (REES, 2002:6). The network was initially conceptualised to consist of nine members that included a consortium of three universities. However, due to demands and additional Sida seed funding through the SADC REEP funding framework, the number of members grew to thirteen, representing partner institutions in eight SADC member states³. Table 1.1 provides an overview of the final composition of the CDN.

Table 1.1 Composition of the CDN

Partner Institution	Country	Type
University of Botswana	Botswana	University
University of Malawi	Malawi	University
University of South Africa	South Africa	University
University of Swaziland	Swaziland	University
National University of Lesotho	Lesotho	University
Rhodes University	South Africa	University
Mufulira College of Education	Zambia	Teacher Training College
National Education Institute of Namibia	Namibia	Curriculum Institution
Polytechnic of Namibia	Namibia	Polytechnic
Swaziland National Trust Commission	Swaziland	Government agency
Mauritian Wildlife	Mauritius	Non Governmental

³ The 13th member withdrew early in the process due to other pressing job demands.

Conservation Clubs		Organisation
SEEN/DRFN ⁴	Namibia	Non Governmental Organisation

The course development process under the CDN involved networking institutions meeting at course development workshops twice a year over a period of thirty months (after the end of the first 33 months the project was extended for another 12 months, on a no cost basis). Through these regional workshops, network members shared skills, experiences and resources in order to enable the development of environmental education courses that were responsive to institutional diversity and national social and ecological diversity. At the end of the four years, the project developed a Course Developer's Toolkit (see Chapters 6 and 7). The toolkit consisted of a monograph of case studies in southern Africa and five source books (Chapter 7). The source books that were published at the start of the United Nations Decade on Education for Sustainable Development are envisaged to provide inspiration and support to the many course developers (in southern Africa and beyond) who are trying to mainstream environment and sustainability into universities and other life-long learning contexts.

The focus of the collaborative work has been on six generic issues associated with course development as identified by the CDN members at the network's inaugural meeting in July 2002, namely:

- curriculum deliberations;
- course materials development;
- course delivery strategies;
- assessment and accreditation of learning;
- monitoring and evaluation of courses; and
- electronic learning and web based course design (see chapter 7).

These generic issues are hereafter called the CDN Framework. The Framework formed the basis for networking and provided the structure for regional workshops. CDN members worked together to focus on one of each of these issues during regional workshops. They also worked in small groups around areas of interest. The interest

⁴ SEEN – Support for Environmental Education in Namibia.
DRFN – Desert Research Foundation of Namibia.

groups were formed around three major focal areas, according to the courses that were developed namely: environmental education for Industry, environmental education in formal educational institutions and environmental education for informal sector such as community based organisations and non governmental organisations (NGOs) (REES, 2002). Although the CDN initially worked with only five countries in southern Africa due to the Danida funding framework, the number of countries increased with additional support from Sida seed money within the SADC REEP funding framework. The study has a southern African scope and would be of interest to course developers in southern Africa who are working on developing environmental education courses.

1.3 PERSONAL BIOGRAPHICAL DATA

I was privileged to be appointed as the first coordinator of the CDN. As coordinator, I found it appropriate to undertake an academic exploration of the course development network. An early proposal to CDN members and the SADC REEP managers to research the network was well received. The background to this study will be incomplete without considering my biography and experience in environmental education as it influenced the study. Prior to undertaking this study, I spent over 15 years working in environmental education in both formal and informal settings in Zambia and Southern Africa. As a primary and later high school teacher in Zambia, I had been involved in the development of learning and teaching materials in the school context. My area of specialization at the time was curriculum development and text book writing, having been associated with the curriculum development centre in my early years of teaching. I was involved in the development of formal educational materials such as environmental science primary school textbooks, and curriculum development for agricultural science for high school syllabi. My involvement in educational materials development started with my work with the Curriculum Development Centre in 1989. I was fortunate to be one of the few teachers who started writing for commercial publishers when the publishing of education materials, which was a preserve of the government through Ministry of Education and publishing parastatal companies, was liberalized. Longman (the publishers I wrote for)

and other international publishers re-established themselves in Zambia, after years of absence.

My interest in materials development took a shift when I changed jobs from formal teaching in high school to support materials development in environmental education under the World Wide Fund for Nature - Zambia Education Programme (WWF ZEP) (formerly WWF Zambia Environmental Education Programme). WWF ZEP was an education project of the WWF Zambia office which provided capacity building training in environmental education for educators in the formal sector such as teachers, teacher trainers, curriculum developers and policy makers. The project's focus in environmental education for rural communities was shaped by the projects' theme; *Community empowerment through education for natural resource management and improved livelihood in Zambia*. As an education officer responsible for materials development in this project, I drew on my experience of materials development for schools to support materials development in the formal education sector and rural community. My work in participatory materials development in rural communities culminated in a Master of Education study through Rhodes University (Lupele, 2002b).

I subsequently became involved in course development after attending the Rhodes University/SADC International Certificate Course in Environmental Education in 2000. As my home assignment, I spear-headed the adaptation of the Rhodes/SADC Certificate Course in Environmental Education materials to the WWF Zambia Training of Trainers Certificate Course in Environmental Education. Over the years of collaboratively working with others in running training courses and developing learning support materials, and influenced by my position as coordinator of the Danida-funded CDN, I was motivated to gain more insights into the concept of networking and how this could contribute to the strengthening of capabilities of individuals in southern Africa as envisioned by the SADC Regional Environmental Education Programme.

In 2004, I was awarded a Commonwealth Split Site Scholarship tenable at Manchester Metropolitan University in the United Kingdom (UK). The scholarship enabled me to

conduct a year of this study in the UK. The UK programme was to assist me develop enhanced understanding of professional development and institutionalisation of courses in the context of the European Commission supported Sustainability Education in European Primary Schools (SEEPS) (see Appendix 1 for the scholarship proposal). While in the UK, I added (to the original research proposal) the study of Environment and School Initiative (ENSI), which is an international environmental education network with membership from Europe, Australia, United States of America (USA) and Canada. ENSI's record of success was appealing to the research questions of this study. It was my view that ENSI could provide more insights into networking, professional development and institutionalisation of environmental education courses. The study of SEEPS and ENSI provided depth and orientation to the analysis of data generated in the SADC CDN as presented in chapters 5 and 10.

1.4 THE SADC REGIONAL ENVIRONMENTAL EDUCATION PROGRAMME

In 1992, a treaty establishing the Southern African Development Community (SADC) was signed by Heads of States at a Government Summit that met in Windhoek (Namibia) (Pallotti, 2004). SADC has since developed into a regional organisation that has a Programme of Action covering several broad economic and social sectors: energy, tourism, environment and land management, water, mining and health. Each of these sectors was coordinated by a member state with some members coordinating more than one sector.

The transformation of SADCC to SADC led to the establishment of the SADC Regional Environmental Education Programme by the SADC Environment and Land Management Sector (SADC ELMS, 1996) in 1993⁵. The main aim of establishing the SADC REEP was to strengthen and support environmental education processes in the southern African region. SADC member states view environmental education as a major strategic activity

⁵ While the SADC REEP was initiated in 1993, it was not until 1997 that the SADC Regional Environmental Education Centre was opened at Umgeni Valley in KwaZulu - Natal in Howick, South Africa.

for the region's environment and sustainable development programme (SADC ELMS, 1996). The SADC report for the 1992 Earth Summit in Rio de Janeiro, for example, sets out goals and proposals for national and regional action which, among other things, expresses the need to expand environmental education and training programmes (SADC ELMS, 1996:21).

1.4.1 Overall objective of the SADC REEP

SADC REEP's overall objective is to enable environmental education practitioners in SADC member states to strengthen environmental education processes for equitable and sustainable environmental management choices (SADC REEP, 2002). It is envisioned that this will be achieved through enhanced and strengthened environmental education policy, networking, resource materials and training (SADC REEP, 2002; Lotz-Sisitka, 2002). In order to achieve this objective, a range of training opportunities have been developed at the SADC Regional Environmental Education Centre in Howick, South Africa and other environmental education centres in the region under the auspices of SADC REEP. These include various types of training courses such as attachment programmes, short courses and expert exchange programmes. The SADC Course Development Network constitutes one of the efforts to strengthen environmental education in southern Africa.

1.4.2 Specific objectives of the SADC REEP

The specific objectives of SADC REEP, as outlined in the programme document (SADC REEP, 2002:14) are:

1. To support a reflexive orientation that informs and guides the development and implementation of environmental education processes within the SADC region.
2. To create an enabling environment for regional and national environmental education policy and to support the development and implementation of local level environmental education policy within the SADC region.
3. To support environmental education processes through enabling decentralised networking of environmental education practitioners within the SADC region.
4. To support the development of capacity within the SADC region to access, use and develop appropriate environmental education resource materials.
5. To support the development of capacity within the SADC region to respond to environmental issues through improved environmental education processes and training activities.

In order to achieve the above objectives, the programme has been structured around four interlinked components i.e:

- component 1: support for policy processes;
- component 2: networking activities;
- component 3: resource materials; and
- component 4: training activities.

1.4.3 Guiding principles for the SADC REEP

Drawing on the learning and experience gained in the running of environmental education in the first phase of the programme (1997-2002), the SADC REEP in 2002 adopted a number of guiding principles that inform the programme's components and activities (SADC REEP, 2002:21-25). These are summarised as follows:

1.4.3.1 *Responsiveness*

Considering that environmental issues are complex, diverse and arise in a range of contexts (Lotz, 1999), the SADC REEP is conscious of regional needs and differences. It actively responds to changing context and needs. The issue of responsiveness is also apparent in any meaningful learning context where teaching is encouraged to take cognizance of 'prior knowledge' and the needs of the learner.

1.4.3.2 *Flexibility and Structure*

While structure provides a certain level of confidence (and control), the SADC REEP recognises that structure may be limiting to responding to the diverse, contested and emergent nature of environmental issues and environmental education processes within the region. The programme aims to balance structure and flexibility. By its nature, flexibility requires a high degree of trust among partners and a reduction in central control.

1.4.3.3 *Participation and partnerships*

Participation and partnerships are prerequisites for democratization, decentralization and regionalisation. Partnerships encourage collaborative approaches to addressing

environmental and educational issues. Participation and partnerships call for flexibility in programme planning and implementation, and adaptive management approaches with an ability to learn from experience.

1.4.3.4 Recognition of diverse contexts

As the SADC REEP functions in diverse contexts within the SADC region, it recognises that appropriate environmental education processes can only be identified within the contexts within which they will be implemented. The programme also believes no single approach to environmental education will be suitable for all SADC states. Because of the rich diversity (in terms of language, ecosystems, educational systems, environmental policies, systems of governance etc. of each country, environmental educators working within different SADC member states should feel free to develop, adapt and implement environmental education processes that take into account their contextual situations and needs. It is also essential to bear in mind the commonalities that unite the SADC member states.

1.4.3.5 Regionalisation

Besides supporting and strengthening the environmental education capacity of individual countries, SADC REEP believes regionalisation also entails increasing and strengthening regional interactions, links, partnerships and opportunities. The Regional Programme focus on regionalisation by supporting capacity development and encouraging environmental education processes within SADC states. At the same time it builds on existing structures to enhance sustainability, facilitate regional networking, and enhance co-operative and collaborative work at both regional and national levels.

1.4.3.6 Building on existing structures and research experience

The development of the SADC REEP was informed by considerable consultation and research since 1987. Hence, many features of the programme built on experience gained and developed at a regional level. Through the programme it has become apparent that building on initiatives that have a track-record or experience base provide productive

starting points for initiatives and enhance sustainability. This ensures sustainability rather than perpetuating the notion that once-off initiatives are desirable.

1.4.3.7 *Transparency and accountability*

The SADC REEP strives to be transparent by ensuring that all those who have legitimate interest can see how decisions are made and who makes them. It also needs to be accountable to ensure that actors and decision makers in the programme are procedurally and periodically answerable to those they work with, to those they represent and to those who provide funds for activities within the programme.

1.4.3.8 *Process and product*

The temptation to focus on tangible and easily measurable products needs to be balanced with the recognition that underlying processes are often more important. Thus, in the development of policy, resource materials, courses and research, the sharing and building of capacity and the building of meaningful sustained partnerships are often as important (or more important) than the actual contents of the project document, resource, course or research report. This is not to imply that process and product are mutually exclusive but rather to emphasise processes that enable the sharing and building of capacity among environmental education practitioners in the SADC region.

1.4.3.9 *Open-endedness*

Since capacity development is a long term process and educational processes cannot easily be process reduced, it is unrealistic to expect broad environmental education objectives to be achieved within short term, pre-specified periods of time. Because of this, it is important that the SADC REEP is seen and operates as an open-ended programme. This open-endedness helps to create space for responsiveness and flexibility. However, taking open-endedness as a guiding principle does not mean that all activities or projects that form part of the SADC REEP should be seen as open-ended processes. Instead they may have a starting and end point.

1.4.3.10 Monitoring, evaluation, research and reflexivity

Monitoring, evaluation and research have a range of purposes including control, understanding, critique and change. Within the SADC REEP there is recognition that all these are important. However, the programme has tried to move beyond a narrow orientation that sees events as facts that can be objectively known by external experts. Wherever possible a number of participants have been engaged in the monitoring, evaluation and research processes while at the same time creating opportunities for a wider engagement in the actions and decisions within the programme.

A reflexive approach helps to build in ways of continuously reviewing past actions and learning in order to enable the programme to 'do' better. Reflexivity is understood as a process of critical and contextual review and action through which participants in the programme and significant others work together to understand the programme.

1.5 MOTIVATION FOR THE STUDY

This study directly responds to SADC REEP specific objectives 1, 3, 4, and 5 and components 2, 3, and 4 and falls under REES sub-project 1 – CDN (section 1.2 and Chapter 6). Although the study is not necessarily aimed at researching the above objectives and components, the findings (chapters 5, 6, 7, 8 and 9) and recommendations set out in section 10.8 have a bearing on the overall aim of the SADC REEP in the light of the identified specific objectives and components as they relate to this study. In particular, the study investigates networking in the context of the CDN and how this can foster professional development and institutionalisation of environmental education in partner institutions with the aim of strengthening environmental education course development in the region.

In the history of the SADC REEP, strong professional relationships are said to have been enabled through the sharing of course materials, where SADC course developers have shared and adapted course materials from one context to another (SADC REEP, 2002). Apart from the studies on the Rhodes University/Gold Fields related environmental education courses (Janse van Rensburg & Le Roux, 1998; Heylings, 1999; Raven, 2005;

Motsa, 2004), I have (through literature search) not come across any study that has researched professional development and institutionalisation of environmental education through networking at the SADC REEP. The closest is Taylor (1997) who researched, among other questions, how networking can offer better support for emerging environmental education processes in the context of Share-Net (a low cost materials development initiative). Apart from gaining insights into networking for professional development and institutionalisation of environmental education in the region, I was motivated by an interest to contribute to the development of course development processes under SADC REEP. Against the regional notion that environmental education can play a strategic role to bring about sustainable development, and in the light of environmental issues and risks such as poverty affecting the livelihoods of the majority of people, I am hopeful that this study will strengthen environmental education research as a process of social transformation started by other researchers in the region (such as Janse van Rensburg, 1995; Lotz, 1996; Taylor, 1997). Though it was not the immediate intention of this study, I am hopeful that in the long term, the courses developed by the network members will contribute to poverty alleviation and building capacity to respond to environmental issues and risks in the individual countries.

1.6 OVERALL RESEARCH QUESTION

The overall research question of this study is as follows:

How can networking enable or constrain professional development and institutionalisation of environmental education courses in southern Africa in the context of the SADC REEP framework?

1.6.1 Specific research questions

The above broad research question (outline above) is broken into several questions as follows:

1. What contextual and historical factors affect networking in environmental education course development processes?
2. What role(s) does networking play in professional development?

3. How does the selection of actors in a network affect the effectiveness in realizing the set goals?
4. What structural and agential factors enable or constrain professional development in the light of the CDN?
5. What structural and agential factors enable or constrain institutionalisation of environmental education courses in southern Africa?

The above question will hopefully provide insights that will inform future environmental education course development networking processes that are enabling of professional development and institutionalisation of environmental education courses in institutions of learning under the SADC REEP sphere of influence and possibly more broadly.

1.7 THEORETICAL UNDERPINNINGS OF THE STUDY

The overarching philosophical orientation of this study is relational philosophy. The philosophy underpins three distinct, yet related theoretical perspectives that have informed the study. These are critical realism (which provides ontological perspectives of the study); Actor Network Theory (ANT) and Community of Practice (which provide epistemological perspectives). Both the ontological and epistemological aspects of this study are discussed in detail in chapters 3 and 4. In this section, I look at relational philosophy as it influenced the choice of the ontological and epistemological lenses used in this study.

Emirbayer (1997) explains that there are two ontological positions of the world. The first is that the world consists of substances (static elements) and the second is that the world is made of dynamic and unfolding relations. He calls these substantialist and relational (transactional) perspectives respectively. A relational perspective emphasises mutuality and reciprocity as the underlying principles of existence. This is a shift from a dominant rationality paradigm (which is inherent in the substantialist perspective), where dualism is an essential feature of the thought process. Substantialists view the world as a collection of objects to be analysed, compartmentalized, classified, and controlled (Kumar, 2004).

Kumar (2004:76) notes that the dualistic world-view gives the illusion that "... I exist independent of the Other. This attitude is founded on the belief that there is a substantial, separate, individual Self, which can act of its own accord, irrespective of the Other."

Not only does the relational philosophy appeal to the relational nature of networking processes but it seems to be congruent with African worldview⁶ as manifested in African philosophy and literature. Perhaps one of the classical examples from African literature can be drawn from Okri's (1991) post colonial novel - *The Famished Road*. Okri shares a vision of the world as one of infinite possibility woven in a string of relations. The novel's main character Azaro, the spirit-child, wanders in an idyllic world of his spirit friends and the world of the living. Azaro enables the reader to see the interconnectedness of life. The dead and the living, the humans and non-humans, all mingle together as exemplified in this quotation:

I stared hard at the crabs clawing the edges of flower-patterned basins. After a while they left me alone. That was the first time I realised it wasn't just humans who came to the market-places of the world. Spirits and other beings come there too. They buy and sell, browse and investigate. They wander amongst the fruits of the earth and sea ... (Okri, 1991:19).

McLuhan (1994) explains a number of relational perspectives from the African point of view by drawing on African philosophers and literature. These include the interconnectedness of humans and the land, which traces "... roots of existence as well as binding them mystically to their departed, ..." (Mbiti, cited in McLuhan, 1994: 278). Many African traditional societies such as the Kikuyu of Kenya see the earth as the supplier of material needs of life, through which spiritual and mental contentment is achieved. Communion with the ancestral spirits is perpetuated through contact with the soil in which the ancestors of the tribe are buried (McLuhan, 1994).

⁶ African worldview as used here does not refer to a common agreed philosophy. Rather, my use of the term is meant to explain that the way of life in most African traditional societies thrives on a relational orientation that is shaped by ongoing contact and interactions among individuals as well as with nature, as exhibited in the extended family value system, for example. I am also aware that the beliefs and practices that embrace what I have called African worldview are not unique to Africa, as these can also be traced in various Eurasia philosophies (Louw, 1998).

Another relational perspective between the earth and humans is manifested in the customs surrounding the disposal of the placenta and the umbilical cord of a newborn. McLuhan writes that "... in a large number of the traditional cultures both the umbilical cord and placenta are immediately reconnected to the Earth" (McLuhan, 1994:279), in reference to the practice of burying the placenta and the umbilical cord.

In sub-Saharan African narratives, relational philosophy is best described by the word 'Ubuntu' which refers to people's allegiances and relations with each other. *Ubuntu* is translated differently in different parts of southern Africa (the location of this study) but refers to life as a web of relationships (Kumar, 2002). Thus it does not just refer to humanity; it means the whole of existence is together, interlinked, totally connected (*ibid*). The word *Ubuntu* has its origins in the Bantu languages of southern Africa⁷. However, it has gained currency in the post-apartheid South Africa as it is been used as a unifying concept among people of all colours, creeds and culture (read more about the effect of *apartheid* in section 2.3). It has been used as a guiding principle by the South African Truth and Reconciliation Commission, South Africa Constitution and other legislation. *Ubuntu* has been used by the South African government as an inspirational motivation for solidarity, cooperation, the state of being and becoming, and as a process of self-realisation through others (Louw, 1998). For example, the South African Government White Paper on Welfare officially recognises *Ubuntu* thus:

The principle of caring for each other's well-being will be promoted, and a spirit of mutual support fostered. Each individual's humanity is ideally expressed through his or her relationship with others and theirs in turn through recognition of the individual's humanity. Ubuntu means that people are people through other people. It also

⁷ There have been some appropriations of the word *Ubuntu* by associating the term with either Zulu or Xhosa speaking people among South African scholars due to the currency the concept has gained in post-apartheid South Africa (Louw, 1998). It is common to read statements such as "... the word *ubuntu* comes from the Zulu and Xhosa languages ..." (Christians, 2004). It is my humble view that this appropriation may lead to the loss of the principles and value of the concept as non-Zulu or Xhosa feel segregated. However, the word and its related interpretations is embedded in Bantu languages (as well as cultures) of southern Africa. *Ubuntu* is differently referred to as *Unhu* or *Hunhu* in Shona (Zimbabwe); *Umunthu* in Chewa (Malawi); *Ubuntu* in Bemba (Zambia), among others.

acknowledges both the rights and the responsibilities of every citizen in promoting individual and societal well-being (RSA, 2004:24).

Louw (1998:3) notes that "... *Ubuntu* dictates that if we were to be human, we need to recognise the genuine otherness of our fellow citizens ... we need to acknowledge the diversity of languages, histories, values and customs all of which constitutes South Africa ...". Maphisa (cited in Louw, 1998) argues that transformation of an *apartheid* South Africa into a democracy is a re-discovery of *Ubuntu*.

Drawing on the above principles of *Ubuntu* and as articulated by scholars such as Le Grange (2005), I find traditional African practices such as *Ubuntu* to be an appropriate lens for understanding networking in the context of this study. This follows on the insight that in traditional African societies *Ubuntu* fostered kinship networks (which moved beyond family relationships to include all human beings) and associated values. *Ubuntu* promoted human solidarities which help to solve social issues such as poverty and hunger as people shared problems and worked together to resolve them. Used in this sense, *Ubuntu* inspires and motivates this research to contribute to the notion of research as a process of social transformation, an agenda of southern African environmental education articulated by other scholars in the region (see Janse van Rensburg, 1995; Lotz, 1996; Taylor, 1997).

Ramphela (cited in Le Grange, 2005) argues that *Ubuntu* as a philosophical approach to social relationships must stand alongside other approaches and be judged on the value it can add to better human relations in a complex society. Although the idea of *Ubuntu* is not entirely used as an epistemological approach in this study *per se*, it inspired me and to some extent provided a lens for my thought processes as I worked on constructing the theoretical framework, research questions and as I interrogated and interpreted data (as described in chapter 4, 7 and 8).

1.8 OUTLINE OF THE THESIS

Chapter 1 introduces the study by providing a background to the SADC REEP and the Course Development Network, the focus of this study. The chapter also discusses my personal biographical data as this influenced the motivation for the study. I have also

provided an overview of the overarching philosophical orientation to the study. The chapter also introduces the research question and provides an overview of the thesis.

Chapter 2 provides an overview of the contextual and conceptual factors that shaped this study. The chapter is divided into two parts. The first part provides a background to the broader context in which this study took place namely: the post-colonial and *apartheid* eras which influenced the history of regionalism⁸ in southern Africa; and currencies of environmentalism that have influenced environmental education thinking. The second part reviews and examines the key concepts that shaped the research. These are: environmental education in southern Africa; networking; professional development and institutionalisation. The chapter forms the backdrop to the study and is drawn upon in the analysis in chapters 5 to 9.

Chapter 3 introduces the ontological and epistemological perspectives of the study. As explained in section 3.1, these are critical realism (ontology), Actor Network Theory (ANT) and community of practice (epistemology). It describes in detail how these theoretical perspectives related to the study. The chapter also introduces the analytical frameworks as used in chapters 5, 6 and 7.

Chapter 4 describes the research process by providing insights into data generation, analysis and interpretation. The chapter also provides details of data sources, ethical considerations and a discussion on trustworthiness in the context of this study.

Chapters 5, 6, 7 and 8 provide the findings of the study. Chapter 5 provides two case studies from an international context – the Environment and School Initiatives (ENSI) and Sustainability Education for European Primary Schools (SEEPS). ENSI is an

⁸ Lee (2003:8-9) distinguishes regionalism from regionalisation as “... the adoption of a **regional project** by a **formal regional economic organisation** designed to enhance political, economic, social and cultural integration of member states ...” as opposed to regionalisation which she describes as “... **the process** by which state and non state actors seek to enhance their economic, political, cultural, social and security interaction with societal forces within a region through formal or informal structures (*ibid*).

international network with membership across Europe, Australia and Canada. SEEPS is a European network with membership across thirteen countries. The two case studies provide lessons that this study draws on.

Chapter 6 is a detailed description of the evolution of the CDN drawing on ANT as a means of analysis. The chapter provides basic assumptions behind the formation of the CDN. It then describes the details of how the CDN came into being by identifying the actor networks involved. The chapter examines what led to the formation of the network, interest behind networking in courses, the process of enrolling and mobilisation of members.

Chapter 7 provides findings on professional development in the context of the CDN. The findings presented in this chapter were analysed by means of Lave and Wenger's (1991) community of practice framework. The chapter describes the process of learning through participation and observation as articulated by Lave and Wenger in the context of this study.

Chapter 8 provides findings on institutionalisation of environmental education courses based on the CDN members' own experiences. The chapter highlights factors that enabled or constrained the process of course development in the members' institutional context. The factors that affected institutionalisation are discussed at three levels i.e. regional, national and institutional levels.

Chapter 9 discusses the findings in chapters 5, 6, 7 and 8 by drawing on the contextual and conceptual issues outlined in chapter 2. It also draws on (and reflects on) the theoretical perspectives discussed in chapter 3, as these relate to and provide insight into the data. The chapter also draws on the data analysis methods used in chapter 4 to discuss the findings.

Chapter 10 is the conclusion of the study. The chapter provides a reflection on the philosophical orientation, theoretical and methodological implications of the study. It

further provides my personal reflection. It also provides some recommendations and synthesises the contribution to new knowledge made through the study.

1.9 CONCLUSION

This chapter has provided the background to the study. It has introduced the CDN as a focus of activity within the SADC REEP and its framework. I have also provided brief personal biographical data as it had an influence on and motivated the study. Theoretical perspectives influencing the study were introduced, together with the research questions. The chapter also briefly introduces the thesis outline. In the next chapter I describe the contextual and conceptual factors that have had a bearing on this study.

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CHAPTER 2

BROADER CONTEXTUAL AND CONCEPTUAL FACTORS SHAPING THE STUDY

2.1 INTRODUCTION

This chapter examines the contextual and conceptual factors that shaped the study. The chapter is divided into two main parts. Part A provides a background to the broader context in which this study took place namely; the post-colonial and *apartheid* eras in southern Africa, the history of regionalism, and the currencies of environmentalism that have shaped environmental education thinking. Attention is given to the emerging Education for Sustainable Development (ESD) discourse in southern Africa and how this discourse is beginning to shape the practice of environmental education in southern Africa, within the SADC REEP framework. Part B reviews and examines the key concepts that shaped the research. It explores the practice of environmental education southern Africa, networking, professional development and institutionalisation. The contextual and conceptual factors set out here form a broad backdrop to the study which I draw on to reflect on the outcomes of the study at the micro level in chapters 9 and 10.

PART A

2.2 POST-COLONIAL SOUTHERN AFRICA

The aftermath of colonialism in most of the former colonies was marked by a range of ambivalent cultural moods and formations which accompany periods of transition and translation. Gandhi (1998:5) calls the aftermath of colonialism "... a celebrated moment of arrival - charged with the rhetoric of independence and creative euphoria of self invention". Given the political investment in self-invention, this euphoria of self-invention has tended to be somewhat uncritical in many cases. Post-colonial novelists, however, have commented critically on this phenomenon, for example, in Ngugi Wa Thiongo's novel *Matigari*, the main character (from whom the novel derives its title)

articulates a deeper paradox in drawing attention to the rhetoric of independence and false hope (Wa Thiongo, 1989). In the novel, Matigari emerges from his hiding in the aftermath of independence of an unnamed country to start a new peaceful life, only to be faced with the reality of life (which is far removed from the anticipated post independence fantasy) as people are still dispossessed and the land he loves is ruled by corruption, fear, misery and poverty.

Wa Thiongo's novel like other writers and commentators on African's post-colonial condition (Sogge, 1994; Mamdani, 1996; Gandhi, 1998; Anyinefa, 2000; Obanya, 2000; Young, 2005) demonstrates that the colonial legacies still live on in many forms and ways and affect the social, political, economic and ecological aspects of our lives in Africa. Neo colonialism and neo-imperialism are some of the legacies that have influenced the lifestyles of the people of southern Africa, like elsewhere in Africa. Although politically independent, most of the 14 Southern African Development Community (SADC) countries are under the yoke of neo-liberalist economic policies introduced by earlier colonial governments and more recently the International Monetary Fund (IMF) and World Bank structural adjustment programmes. These are in turn fuelled by globalization interests and the spread of global capitalism. The structural adjustment programmes and subsequent privatisation and liberalisation policies have severely undermined the welfare of the people of southern Africa. The indices of education, health, sanitation, water, life expectancy, infant mortality, literacy have all fallen (Stiglitz, 2002). In the main, the implementation of the structural adjustment programmes has not only exacerbated issues of poverty, unemployment and environmental degradation. It has also rendered African countries impotent in political self-determination in making meaningful economic decisions, as they (African governments) have to bow to the terms and conditions of the debtors to survive.

According to the *SADC Human Development Report 2000* (UNDP, 2000), poverty is endemic in the SADC region. It is rooted in the inflexible economic structure which has evolved since colonialism. UNEP (2006a) describes poverty as not just about the lack of access to financial resources but also the lack of other resources required for survival.

Poverty in the region has been further exacerbated by prevalence of HIV/AIDS. The economic costs in lost labour and sick days due to HIV/AIDS are enormous for the poor countries of the region (World Bank, 2000). There is a close relationship between poverty and environment problems as both cause and effect (UNEP, 2006a). According to the *World Bank Development Report 1999/2000*, macro-economic stability and the challenge of resource allocation to HIV/AIDS is made more difficult by the high levels of external debt among SADC member states - which in 1997 averaged at 93% of Gross Net Product (GNP) (World Bank, 2000). Most of the countries of the region depend highly on external assistance to finance social sectors such as education and health (World Bank, 2000). Structural reforms in the health and education sectors have been at the dictates of the donor community. Little attention is given to the social impacts of these on the livelihoods of the majority of the poor people in the region (Stiglitz, 2002). The HIV/AIDS and debt crisis is further worsened by recurring droughts (especially since the early 1990s) in at least six countries of the region - Zambia, Zimbabwe, Mozambique, Lesotho, Malawi and Swaziland, which threatens millions of people with starvation (Schreuder, 2002; UNEP, 2006a).

2.2.1 Key environmental issues in southern Africa

Southern African countries face a number of challenges arising from environmental issues and risks. Drawing on the work of Booth, McCullum, Mpinga and Mukute (1994), Dalal-Clayton (1997) and more recent publications such as the *Africa environment outlook 2: Our environment, our wealth* (UNEP, 2006a) the following are identified as key environmental issues and risks: climate factors such as drought; land degradation; scarcity of water; pollution; armed conflict; population and urbanisation; biodiversity and wildlife loss, among others.

- ***Climate factors (drought)***

Most southern African agricultural activities depend on rainfall. The region's climate and rainfall patterns have been highly variable (Booth et al., 1994). Table 2.1 shows rainfall trends in southern Africa between 1986 and 2003.

Table 2.1 Rainfall trends in southern Africa 1986-2003

1986-87	Drought conditions returned to the region.
1988-90	Near normal seasons.
1991-92	Severe drought in southern Africa, excluding Namibia.
1993-94	Conditions improved.
1994-95	Many SADC countries were hit by the worst drought in memory, surpassing effects of the 1991-92 drought in some parts of the region.
1996-97	Normal rainfall for most of the region.
1997-98	Normal rainfall throughout the region, including the northeast, although impacts of El Nino were significant.
1999- 00	Cyclone Eline hit the region and widespread floods devastated large parts of the Limpopo basin (southern and central Mozambique, southeastern Zimbabwe, parts of South Africa and Botswana).
2001-03	Another severe drought in the SADC region, particularly from Zimbabwe northwards.

Source: *Africa environment outlook 2: Our environment, our wealth* (UNEP, 2006a).

- **Land degradation**

Land degradation in the region is mainly caused by overcrowding and poor land management, over grazing and soil erosion. Poverty has been cited as another cause as impoverished people have no alternative sources of livelihood. Forceful relocation of people to overcrowded areas (as it happened) under *apartheid* policies in South Africa, have also contributed to land degradation (see section 2.3).

- **Scarcity of water**

For a drought prone region like southern Africa, availability of water is very critical. Dalal-Clayton (1997) observes that by 2030 some countries in the region will be in water deficit. Plans are underway for massive water supply schemes involving policy development and the channeling of water between catchments. For example, African governments established the African Ministerial Council on Water to provide regional leadership and strategic responses to the challenges of providing safe water and sanitation to the growing population (UNEP, 2006a).

- **Pollution**

Pollution control and monitoring in the region is weak. Population growth, urbanisation, industrialisation and intensive agriculture are said to be the main contributors to pollution. Mining is also a major polluter resulting from toxic metals and solid waste dumps (Booth et al., 1994; Dalal-Clayton, 1997). Other polluters include: industrial discharges into water sources and oil spills. Air pollution is not much of a problem except in the Mpumalanga Highveld where there is a high concentration coal-burning industries for cheap energy production (Dalal-Clayton, 1997).

- **Armed conflict**

According to UNEP (2006a) war and post-conflict situations places stress on the environment that may contribute to the overexploitation of natural resources. Historically, four sources of armed conflicts have been identified in southern Africa. They included: liberation wars in pursuit of independence from colonialists; civil war, for example, after eleven years of clean up operations, 1 900 communities in Angola are still affected by landmines (Gobler, 2007); aggression and destabilization strategies of the *apartheid* government in South Africa against independent states (see section 2.3) and internal dissent (Booth et al, 1994). Internal dissent is still rife in countries such as Zimbabwe and Democratic Republic of Congo (Dawu, 2007). Armed conflict contributed to environmental damage during war as noted by Booth et al. 1994:253) "Most of the damage to large animals has been committed by post-independence rebel movements in Angola and Mozambique through poaching ..."

Population and urbanisation

The population growth will place a burden on economies as an expanding and ageing adult population requires jobs and health services.

Changing demography and particularly the changing age structure of the population, a high rate of urbanisation, and a faster rate of population growth in relation to economic growth are major drivers of environmental change in Africa, with significant impacts on the natural resource base (UNEP, 2006a:4)

Urbanisation is increasing rapidly as a result of rural-urban migration fuelled by underdevelopment in most rural areas of the region. According to UNEP (2006a), by 2030 the proportion of Africa's urbanized population is expected to reach 53.5 per cent, compared to 39 per cent in 2005.

Biodiversity and wildlife loss

Southern Africa is well known for its protected areas and wildlife, which forms the basis of tourism – an important aspect for Gross Domestic Product (GDP). Wildlife is under intense pressure due to grazing animals and expansion of agricultural land clearing. Pollution is also said to be increasing and habitats are being cleared to pave way for developmental projects (UNEP, 2006a).

These issues are however more complex and interrelated with social economic and political systems. Southern Africa has been conceptualised within a framework that recognises the interrelated nature of issues (see Figure 2.1 in section 2.7).

Lotz-Sisitka, Olvitt, Gumede and Pesanayi (2006) provide a more comprehensive list of the interrelated environmental and social issues and challenges that environmental education and sustainability practitioners in southern Africa face as they work in the environmental field. Table 2.2 is a summarised version of these issues and challenges, which are based on a consultation process in 14 southern African countries.

Table 2.2 Issues and challenges ESD practitioners in southern Africa face

<p>Environmental issues and risks</p> <ul style="list-style-type: none">• Increased environmental degradation• Over-exploitation of natural resources for short term benefits• Land degradation i.e. decline in productivity of the land, food insecurity• Fresh water contamination• Air pollution• Solid and liquid waste management, including special waste such as medical waste• Wildlife depletion, poaching and loss of biodiversity• Deforestation• Desertification• Water wastage, pollution and inadequate sanitation• Coastal zone degradation and marine issues (degradation of the marine environment and marine)• Land use conflicts

- Uncontrolled urban development

Social issues, Risks and Challenges

- HIV/AIDS – resulting in a deepening of poverty, lack of alternatives
- Other health risks such as malaria
- Education systems are too theoretical and not practical
- Lack of self-sufficiency
- Malnutrition and health of children
- Vulnerability of women and children due to health risks and abuse
- High illiteracy rates, which limits people’s participation in development
- Street children and orphans
- Social values and moral regeneration
- Population growth and settlement patterns

Economic Challenges

- Poverty and decrease in standards of living
- High level unemployment
- Food security
- Land tenure systems still tied to traditional systems
- High costs of inputs and low selling prices for products
- Shortage of adequate housing, facilities and capital for appropriate development

Political Challenges

- Corruption and poor governance
- Lack of synergy amongst government departments, policies and implementation strategies
- Failure to implement policies
- Decentralization of policy making
- War and lack of security
- Short term objectives

(Source: Lotz-Sisitka et al., 2006)

2.2.2 Colonial legacies in education

Although many countries in the region have undertaken educational and curriculum reforms, missionary and colonial education legacies are still evident in the education systems of the regions. It is argued that the pattern of pre and colonial education systems was the same in almost the whole of southern Africa (Chondoka & Manchishi, 1999). Obanya (2000) notes southern African countries, as is the case elsewhere in Africa, still carry colonial legacies even in the reformed education systems. They include the following:

- Most countries in the region still have European type curricula. In some cases the localized examinations are conducted in collaboration with universities in the former colonial powers (Obanya, 2000);

- Like the colonial governments, the post-colonial governments are not investing in education mainly due to structural adjustment programmes of the IMF and World Bank. Education is under-funded throughout the region (Mamdani, 1994);
- Creation of social class - education has continued to create social class⁹ distinctions (Nyanto, 2006);
- Although there has been remarkable increase in the number of school-aged children going to school, the quality of public education and throughput rates are poor (Obanya, 2000).

2.2.3 Status of higher education institutions in southern Africa

Southern Africa, like elsewhere in Africa, had very few universities established during the colonial era (Mamdani, 1994). Most of the universities in southern Africa apart from those in South Africa and the University of Zimbabwe (formerly University of Rhodesia) are a post-colonial phenomenon. At independence a number of countries in the region embarked on a rapid expansion of higher education institutions (HEIs). The state invested in human resource development to strengthen emerging government institutions and to implement development priorities (Africa Watch, 1991). For example within the first five years of independence, the Zambian government expanded its HEIs by building at least a trade training college and teacher training college in all the nine provinces where there was none. The country also opened its first university two years into post-independence (Mwanakatwe, 1968).

The post-independence nationalist agenda influenced debates on the curriculum and the institutional form and purpose of African universities. Education reform was primarily associated with nation building (Mamdani, 1994; Obanya, 2000). Obanya (2000) notes that this entailed a re-thinking of national goals informed by the country's history and trends affecting society. He argues that genuine educational reform ought to be tied up

⁹ The emerging middle class are leading lifestyles that was typical of the colonial leaders as Nyanto (2006:28-29) states in writing about post apartheid South African black middle class “ ... the general trouble with the new middle class is their huge appetite for consumption ... socially, the black middle class aspire to a White world ...”.

with reforms related to the political, sociological and economic re-orientation of the wider society. Post-independence state control of universities affected the possibilities for academic freedom. Under the nationalist leadership of post-colonial governments in southern Africa, heads of states became university chancellors and this, in the main, led to a somewhat 'utilitarian' model of Higher Education (Africa Watch, 1991:19). Protests against this model sometimes led to violence and human rights abuses. The utilitarian agenda of the development state, while supporting developmental objectives, also had the effect of curtailing academic freedom and some forms of critical engagement with political, social, economic and environmental issues affecting broader society (Africa Watch, 1991; Mamdani, 1994).

The curricula and institutional forms were based on reproductive models, reproducing intellectual and knowledge creation patterns characteristic of British, French, Portuguese, Belgian and other colonial universities and epistemologies (Mwanakatwe, 1968; Mamdani, 1994). As a result of this inheritance, HEI programmes and course were developed by specialised people. These were, often-overseas, consultants who were hired to develop courses for the newly established HEI, or who came as experts through development aid (Van Staden, 2005). In some HEI, course development is still a preserve of 'experts' often consultants or senior professors (Nmafe, 2005; Van Staden, 2005; Nhamo, 2005b).

HEIs in southern Africa have also been affected by global social and economic trends such as the global oil crisis of the 1970s. The crisis led to recession and financial crisis in the independent states. The implementation of the structural adjustments programme (see section 2.2) in the 1980s led to reduced spending on education, health, social services and exacerbated the funding problems in HEI. Despite the key role that universities were envisaged to play in development of society, funding to these institutions was reduced in favour of basic education (Lotz-Sisitka et al., 2006). Due to high levels of dependence on government funding, the academic system became vulnerable to the pressures of political conformity. Self-censorship and a significant brain drain which together had negative consequences for intellectual development in African universities (Africa Watch, 1991;

Diouf & Mamdani, 1994). The situation was worse in predominantly black universities in *apartheid* South Africa (Obanya, 2000).

In the next section I discuss *apartheid* as the last form of colonialisation in southern Africa (Mamdani, 1996). The section specifically foregrounds the ambivalent role that *apartheid* in South Africa played in regional grouping for economic, social and political development. The section also illustrates the poverty dimension caused by the repressive laws, not only in South Africa but also in the entire region, through military force. In many ways *apartheid* legacies have shaped the practice of environmental education especially in the early 1990s when it was apparent that it was coming to an end and environmental educators started to engage with more democratic and inclusive teaching methods, and course models (see section 6.2).

2.3 THE EFFECT OF APARTHEID ON SOUTHERN AFRICA

Mamdani (1996) postulates that *apartheid*, which is often considered unique to South Africa, has been a form of colonial state in Africa. As a form of rule, *apartheid* is what Jan Smuts called 'institutional segregation', the British termed it (institutional segregation) 'indirect rule' and the French 'association' (Mamdani, 1996). He notes that the creation of separate but subordinate state structures for natives in Africa first developed in southern Africa, where colonies were administered through a dual system - one for the colonizers (modern), the other for the natives (customary). This was called institutional segregation, which referred to the policy of native control that would be mediated through the native chiefs.

Mamdani (1996) notes that early institutional segregation in southern Africa was based on race. This form of segregation had two major disadvantages. The first was that it defined the colonized as the oppressed majority and second, it was clearly seen as a divide and rule strategy when the colonialists wanted to be seen to 'unite and rule' as opposed to 'divide and rule' the natives. The alternative to racism – as the main way of

defining the social, legal, and political status of the colonized – was tribalism as Mamdani (1996:90) recalls:

On the face of it tribe as social litmus had none of the disadvantages that race did. In fact its advantages were obvious: unlike race, tribe would dissolve the majority of the colonized into several tribal minorities; furthermore, tribal identity could be argued to be both natural and traditional. Over time those in power came to realise that a debate on the mode of control was simultaneously one on the mode of representation. Control and representation were two sides of the same coin, which would eventually make for a single fit: the mode of representation, whether racial or tribal, would shape the lines along which natives would organise and in turn avail the state corresponding avenues of native control.

The white minority National Party narrowly won the South African elections of 1948, amid years of native revolt. The climax of the native resistance was the 1946 mineworkers' strike that led to squatter and commuter struggles. In order to control the natives, whose population had increased in urban areas, the National Party implemented the policy of *apartheid* (Mamdani, 1996). The policy reformed the labour policy in response to the employer needs and introduced measures to stabilise the core of industrial labour. Mamdani (1996) argues that this marked a decisive shift in perspective of effectively tackling the problem of native control in South Africa.

Under the National Party rule, *apartheid* was enshrined in a multitude of statutes (Kleyn & Viljoen, 2002). The legislation was applied by the courts and enforced by the state police. Under *apartheid* legislation, different tribes lived in homelands or Bantustan under a traditional ruler. The Bantustans were considered 'independent states' within South Africa. These were mostly unproductive agricultural lands as arable land was reserved exclusively for the white population. Marriage across racial lines was forbidden and outlawed in 1985 (Kleyn & Viljoen, 2002). Education for the black people in the homelands was inferior to that of whites (Du Plessis, 1991; Kleyn & Viljoen, 2002).

Apartheid in South Africa had a human and economic cost in the rest of southern Africa (Johnson & Martin, 1989). Kenneth Kaunda¹⁰ in his foreword to a publication of the Commonwealth Committee of Foreign Ministers on southern Africa – *Apartheid*

¹⁰Kenneth Kaunda was first the President of the Republic of Zambia and was Chairman of the Frontline States of southern Africa at the time of the report.

Terrorism: The Destabilisation Report (Johnson & Martin, 1989) notes that the international media privileged the fallacy that *apartheid* ideology only afflicted the population which was inside South Africa:

Beyond the vicious violence and oppression inside South Africa, there is an equally vicious violence and oppression inflicted by *apartheid* on the peoples of neighbouring countries bringing untold social and economic destruction and a shattering of hopes for rapid development in the region. The ideology of *apartheid* is hitting the neighbours back into the stone age (Johnson & Martin, 1989:xi)

Frontline States - Tanzania, Zambia, Zimbabwe, Mozambique, Angola and Botswana suffered cross border raids which were justified by *apartheid* South Africa as being aimed at African National Congress (ANC) members residing in these countries. During the *apartheid* era, colossal sums of money which would have gone to social amenities such as education and health, were spent on the war by both the Frontline States and the South African government. Johnson and Martin (1989) report that between 1980 and 1990, at the height of the *apartheid-instigated* war in the region, a total economic cost to the frontline states as a result of apartheid was at least US\$45 billion. This cost was said to be double the external debt of the six Frontline States at the time.

The foregoing is just a glimpse of the impact of *apartheid* upon southern Africa. The damage was much more than this. *Apartheid* destroyed all-round development, and shattered hopes of families and individuals throughout southern Africa. Poverty, which has been part of the colonial inheritance, increased. Johnson and Martin (1989) report that over 1.3 million *apartheid* related deaths in the six Frontline States were recorded in the period 1980 -1990. Suspensions between people of different races were rife both within South Africa and in southern Africa at large. It made cooperation and working together across the regions, ethnic and racial groups difficult.

Johnson and Martin (1989) report that at the height of *apartheid* resistance, South Africa drew up a concept of 'total strategy' which was detailed in a Defence White Paper of 1977. The strategy encompasses use of economic, political and diplomatic tactics in the region, and use of military means to achieve economic ends. They further explain that

South Africa's regional policy was aimed at extending the country's hegemony over the sub-region through the creation and maintenance of a dependence that was economically lucrative and politically submissive, and acted as a bulwark against international sanctions.

When the black population of South Africa rose in the late 1980s with the support of the African continent and international community, it was apparent that *apartheid* would be halted; its laws and physical structures would be destroyed (Johnson & Martin, 1989). These signs brought a sigh of relief to the majority of the people of southern Africa who were looking for regional cooperation and integration. Vale (2003:1) recalls: " ... as the struggle to end *apartheid* intensified, I had foreseen another future for southern Africa - a future in which states would prosper and through them a regional community would grow".

Efforts for regional integration accelerated with the fall of *apartheid* in South Africa. This saw the first regionalism that focused on the entire region. In the next section, I discuss regionalism by tracing its history in southern Africa and illustrate how this has given rise into regional projects such as the SADC REEP (see section 1.4).

2.4 HISTORY OF REGIONALISM IN SOUTHERN AFRICA

Economic regionalism in sub-Saharan Africa has a long history. Immediately after independence, African states emphasized the need for economic regionalism aimed primarily at enhancing economic growth and development (Lee, 2003). The roots of formal regionalism in southern Africa can be traced to 1889 with the creation of the South African colonial and apartheid-era Customs Union, a relic which was transformed into the Southern African Customs Union¹¹ (SACU) in 1969 (Lee, 2003). In the 1980s, the political appeal of regional integration was strengthened by the presence of *apartheid* in South Africa (Pallotti, 2004) and the history of colonialisation (Mitschele, 1998; section 2.3). In other words efforts towards fighting the *apartheid* regime called for the

¹¹ Members of SACU include: Botswana, Lesotho, Namibia, South Africa and Swaziland

formation of coalitions and alliances of southern African countries. The Frontline States, for example, was a security-based form of regional cooperation among the independent states of southern Africa who united against *apartheid* regime of South Africa (Lee, 2003).

Given the history of colonialism, oppression, and inequality in the Southern African region, the states of Southern Africa sought a way to address economic and social inequalities within a regional framework (Mitschele, 1998). This led to the formation of the Southern African Development Coordinating Conference (SADCC) (the forerunner of the Frontline States) in Lusaka, Zambia on April 1, 1980. The formation of SADCC was signified by the adoption of the *Lusaka Declaration "Southern Africa Towards Economic Reparation"*. Lee (2003) notes that economic projects of SADCC were also part of the struggle against *apartheid* South Africa. She argues that SADCC was formed mainly to resist efforts by the *apartheid* regime in South Africa to increase its regional economic and political hegemony, through SACU. The formation of SADCC in 1980 is believed to have set the stage for regionalism in southern Africa. Ten independent states of southern Africa became the founding members. These were Angola, Lesotho, Malawi, Zambia, Botswana, Zimbabwe, Tanzania, Swaziland, Mozambique and Mauritius. After attaining majority rule in 1990 and 1994, Namibia and South Africa, respectively, became members (see Figure 1.4 in section 1.1). Later, the Democratic Republic of Congo and Seychelles also joined (Mitschele, 1998).

In 1992 the Southern African Development Coordination Conference was transformed into the Southern African Development Community (SADC) (SADC REEP, 2002). A treaty establishing the Southern African Development Community (SADC) was signed at the Heads of States and Government Summit in Windhoek (Namibia) in 1992 (Pallotti, 2004). At inception SADC adopted a sectoral approach covering several broad economic and social sectors: Energy, Tourism, Environment and Land Management, Water, Mining and Health. Each of these sectors was coordinated by a member state with some members coordinating more than one sector (Lee, 2003). The sectoral approach has since been replaced by directorates namely: Food, Agriculture and Natural Resources; Trade,

Industry, Finance and Investment; Social and Human Development and Special Programmes and HIV and AIDS programme (Obol & Allen, 2004).

2.4.1 SADC overall objectives

The overall objectives of SADC (as contained in Chapter 3, Article 5, of the 1992 SADC Treaty) are as follows:

- Achieve development and economic growth, alleviate poverty, enhance the standard and quality of life of the peoples of southern Africa and support the socially disadvantaged through regional integration;
- Evolve common political values, systems and institutions;
- Promote and defend peace and security;
- Promote self-sustaining development on the basis of collective self-reliance and the interdependence of member states;
- Achieve complementary between national and regional strategies and programmes;
- Promote and maximize productive employment and utilization of resources of the Region;
- Achieve sustainable utilization of natural resources and effective protection of the environment;
- Strengthen and consolidate the long-standing historical and cultural affinities and links among the peoples of the region (Lee, 2003:47).

In 2000, an objective on HIV and combating poverty was added to the above objectives (Lee, 2003). The transformation of SADCC to SADC included the adoption of new guiding principles and goals which directly relate to many central issues for the different but interrelated transitions, as outlined in the publication *SADC Policy and Strategy for Environment and Sustainable Development: Towards Equity Led Growth and Sustainable Development in Southern Africa* (SADC ELMS, 1996:4). Environment and sustainable development issues were dealt with under the SADC Environment and Land Management Sector (SADC ELMS).

2.4.2 SADC Environment and Land Management Sector

The activities of the SADC ELMS have been taken over by the FANR under the re-structured SADC (Obol & Allen, 2004). However, in this section, I discuss the activities of SADC ELMS leading to the formation of SADC REEP. SADC ELMS's mandate was to respond to trans-boundary issues such as soil erosion, desertification, air pollution and water supply. The sector had several projects dealing with three major areas i.e. land management, environmental programs and environmental information. Part of this programme was focused on capacity building in the region through a Regional Environmental Education Programme. This was in keeping with the goal of Chapter 36 of Agenda 21 of the United Nations Conference on Environment and Development in Rio de Janeiro in 1992 (UNCED, 1992), which calls for "... expanding education, public awareness and training..." (see section 2.5.2 for more details). SADC-ELMS sought to ensure that the environment, sustainable development, economic and social factors are all given due consideration when making environmental decisions. Poverty eradication was a prime goal of the sector (SADC ELMS, 1996).

Against the foregoing background, SADC ELMS established the Regional Environmental Education Programme (SADC ELMS, 1996) in 1993. The initial function of the SADC Regional Environmental Education Program (SADC-REEP) was to conduct an environmental education inventory of the member states. The results of the inventory established that environmental education was not sufficient in many countries of the region, and the states that did attempt to implement an education program, lacked capacity and organizational planning to properly institute the policy (SADC ELMS, 1996).

As a follow up on the outcomes of the inventory, a consultative processes with stakeholders (environmental education practitioners) throughout the 14 member states through workshops and research was carried out (Ward, 2002). The SADC Council of Ministers who ratified the proposed Regional Environmental Education Programme gave consent to the Wildlife and Environmental Society of South Africa (WESSA) to become

the implementing agent of the programme, on behalf of SADC ELMS. Subsequently the SADC Regional Environmental Education Center (SADC REEC) was opened in July 1997 at Umgeni Valley, Howick, South Africa. The Swedish International Development Agency (Sida) has been the major funder of the project since inception. Section 1.4 provides an overview of SADC REEP, its overall objectives, components and activities.

In the section that follows, I review the development of environmental education in southern Africa (under the auspices of the SADC REEP). I also discuss the emerging Education for Sustainable Development (ESD) discourse in the light of the United Nations Decade of Education for Sustainable Development¹². I structure the discussion under the theme 'currencies of environmentalism' following Martinez-Alier's (2002:1) description of three main intertwined trends that characterize the environmental movement namely the 'cult of wilderness', 'gospel of eco-efficiency' and the 'environmentalism of the poor'.

2.5 THE CURRENCIES OF ENVIRONMENTALISM

Martinez-Alier (2002) describes three clusters of environmental concern and activism i.e. the cult of wilderness, the gospel of eco-efficiency and the environmentalism of the poor (as used in this study). He describes these as channels of a single river, branches of a big tree, or varieties of the same crop (Martinez-Alier, 2002:1). A brief explanation of each of the trends is provided.

- The 'cult of wilderness', is primarily concerned with the preservation of wild Nature but has little to say on industry and urbanisation, is indifferent or opposed to economic growth, worried by population growth, and backed up scientifically by conservation biology;

¹² Following the World Summit on Sustainable Development (WSSD), the United Nations General Assembly in its 57th meeting in December 2002, proclaimed the **Decade of Education for Sustainable Development** for the period 2005 – 2014. The decade places emphasis on the fact that 'education is an indispensable element for achieving sustainable development'. UNESCO was designated as the lead agency to promote and implement the decade, since they were also the lead agency in the implementation of chapter 36 of Agenda 21.

- The 'gospel of eco-efficiency', is primarily concerned with the control of pollution not only in industrial contexts but also in agriculture, fisheries and forestry, resting on a belief in new technologies and the 'internalisation of externalities' as instruments for ecological modernisation, backed up by industrial ecology and environmental economics;
- The environmental justice movement, popular environmentalism, the environmentalism of the poor, livelihood ecology and liberation ecology have grown out of the local, regional, national and global ecological distribution conflicts caused by economic growth and social inequalities. Examples are conflicts over water use, over access to forests, over the burdens of pollution and over ecologically unequal exchange, which are studied by political ecology. Actors in such conflicts have often not always used an environmental idiom, and this is one reason why this old third current of environmentalism was not identified until the 1980s and 1990s.

In discussing environmental education by drawing on the above structure, the reader is reminded that there are points of contact and points of disagreement among these varieties of environmentalism (Martinez-Alier, 2002). Thus some practices in the environmental field in southern Africa may fall in more than one category. Martinez-Alier describes 'whirlpools' where ideas, philosophies and ideologies from these three streams of environmental thinking overlap and influence each other.

2.5.1 The cult of wilderness

Nature and biophysical aspects of the environment were (and are still in many cases) privileged as the focus of environmental education in many countries in the region (Taylor, 1997; Martinez-Alier, 2002; Dresner, 2002; Lupele, 2002a). The cult of wilderness was concerned with the preservation of Nature and spear-headed by conservation biologists (Kuhn, 1970; Martinez-Alier, 2002; Dresner, 2002). In colonial southern Africa, the establishment of protected areas for the purpose of preservation of Nature was influenced by the 1933 London Convention to which the colonial governments were signatories (Booth et al., 1994). The convention led to the establishment of many of the region's national parks "... for the purpose of protecting and preserving wild animals, plants and features that were geologically, culturally, and scientifically important" (Booth et al., 1994:159). Booth et al. argue that protected areas failed to benefit local people despite losses of property from raids by wild animals. They

postulate that another weakness was the fact that the local people were not privy to the actual reasons (catchment area, genetic conservation and recreation) behind the establishment of the protected areas. This rendered the whole project meaningless to them. “ ... While protected areas provided long-term conservation benefits, they were not designed to help local people meet their needs” (Booth et al., 1994). The process of establishing protected areas created hostility towards among the local people and the conservationists. This resulted in the shift in thinking about protected areas, from total exclusion to co-management with local people (Martinez-Alier, 2002). Examples of co-management strategies include community-based wildlife management. Booth et al. (1994) observe that the main targets for community-based, wildlife-conservation programmes have been areas with abundant and useful natural resources, including caterpillars, honey, and thatching grass. Table 2.3 provides some examples of community-based, wildlife management programmes that have been implemented in the SADC region:

Table 2.3 Examples of community-based wildlife management in SADC

- | |
|--|
| <ul style="list-style-type: none"> • Communal Areas Management Programme for Indigenous Resources (CAMPFIRE) in Zimbabwe; • Administrative Management Design for Game Management Areas (ADMAGE) in Zambia; • Wereldsend Community in Namibia; • Selous Conservation Programme; • Serengeti Ecosystem Conservation in Tanzania; and • Lebatlane Community Game Management Programme in Pilanesburg, South Africa. |
|--|

Source: Booth et al., 1994.

Under the cult of wilderness, earlier educational interventions were centered on nature conservation and awareness creation, in order to change the attitudes, values and behaviour of people towards the environment (SADC REEP, 2002). The belief was that if people are exposed to nature and made aware of environmental issues then their attitudes will be changed, which will in turn change behaviour (Taylor, 1997). With the introduction of community-based natural resources management, environmental

education became more participatory in conservation contexts. It focused on resource distribution and social justice issues.

Subsequent changes in environmental education narratives and discourse are linked to the expanded knowledge of threats to ecological systems and warnings of environmental crisis and related threats to life on earth, as expounded by multi disciplinary sources such as scientists, economists, historians, politicians and philosophers (Janse van Rensburg, 1995; Lotz, 1996). This led to the shift in the focus on environmental issues to include economic growth beyond the pristine areas - a trend of environmentalism Martinez-Alier calls (2002) – eco-efficiency.

2.5.2 Eco-efficiency

This second trend associated with the environmental movement is concerned with the effect of economic growth beyond the pristine areas but also focuses on industrial and agricultural activities (Martinez-Alier, 2002). A key narrative emerging from this broader concern with the relationships between economic growth and environment is sustainable development. Sustainable development is concerned with the impacts of the production of commodities and sustainable management of natural resources. Increasingly, it is also attending to issues of consumption. Gifford Pinchot is believed to have been one of the pioneers of the eco-efficiency orientation to environmentalism (Martinez-Alier, 2002). He is believed to have presided over the birth of the modern environmentalism movement in the USA. Other names associated with pioneering modern environmentalism in the USA are President Theodore Roosevelt, Aldo Leopold (also associated with wilderness movement), Rachel Carson and Barry Commoner (*ibid*). These environmentalists are among others who believed in eco-efficiency (Martinez-Alier, 2002; Dresner, 2002). In their various work and publications, they focused on providing warnings of the pending environmental crisis as a result of economic activities such as forestry harvesting (Gifford Pinchot) and use of agro-chemicals (Rachel Carson). Barrow (1999:154) notes that “ ... many of the publications [by environmentalists] between the mid -1960s and mid – 1970s were dogmatic: warning of coming crisis, so that environmentalists became known as ‘prophets of doom’ ... ”.

This stream of thinking was adopted by international institutions in their response to a greater awareness of human impact on the environment as is evident from publications such as *Africa environment outlook 2: Our environment, our wealth* (UNEP, 2006a). The field of environmental education has been shaped by the notion of sustainable development through the international conferences, publications and debates of the 1970s. For example the first United Nations Conference on the human environment held in Stockholm, Sweden in June 1972 focused on the close link between ‘humans’ and ‘environment’ (Lotz-Sisitka, 2004). In 1977 the United Nations Educational, Scientific and Cultural Organisation (UNESCO) in collaboration with the United Nations Environment Programme (UNEP) organised the first Intergovernmental Conference on Environmental Education in Tbilisi (commonly referred to as the Tbilisi Conference). This was a follow up to the 1972 Stockholm conference and a culmination of the first phase of the International Environmental Education in 1975 – the Belgrade Conference. The Tbilisi Conference identified environmental education as an essential component in comprehensive lifelong education with a problem solving approach and providing for active involvement by the public if education systems were to be made more relevant to local realities (UNESCO-UNEP, 1998). The conference also postulated that environmental education should be based on an interdisciplinary approach across traditional disciplines.

A follow up to the Tbilisi Conference, held by the World Commission on Environment and Development, under the aegis of the United Nations, published the Brundtland Report, *Our Common Future* (WCED, 1987). This publication opened up debate on the concept of sustainable development. The WCED defines sustainable development as ‘... development that meets the needs of the present without compromising the ability of future generations to meet their needs ...’. The notion of sustainability, according to this definition, implies a concern for social equity between generations, a concern that must logically be extended to equity within each generation. The Brundtland Commission’s conception of sustainable development thus brought together equity between generations and equity within generations. Dresner (2002) argues that it also overcome the

'environment versus development' polarisation, by indicating that we need not stop development (because of environmental concerns) but rather *re-direct* development in order to better meet people's needs. The WCED (1987:9) also noted that "... in the end, sustainable development is not a fixed state of harmony, but rather a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development, and institutional change are made consistent with future as well as present needs". It seems that sustainable development is being seen as the solution to the environmental crisis experienced and created by human beings.

The **Earth Summit** (also known as the United Nations Conference on Environment and Development - UNCED), held in 1992 in Rio de Janeiro, re-examined the relationship between humans and the environment. Out of this conference emerged a global plan of action for sustainable development known as Agenda 21. It highlighted the important relationship between environment and development and it established the notion of sustainable development on the global agenda. Further, Chapter 36 of Agenda 21 foregrounded education, including formal education, public awareness and training as a process by which human beings and societies can reach their fullest potential. Education is seen as critical for promoting sustainable development and improving the capacity of people to address environment and development issues (UNCED, 1992). The main focus areas discussed in Chapter 36 of Agenda 21 are:

- Reorienting education towards sustainable development;
- Increasing public awareness; and
- Promoting training.

Table 2.4 provides a summary of the 'basis for action' for each of the three focal areas of Chapter 36.

Table 2.4 Agenda 21 Chapter 36 basis for action

Reorienting education towards sustainable development

Education, including formal education, public awareness and training, should be recognized 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 people to address environment and development issues.

While basic education provides the underpinning for any environmental and development education, the latter needs to be incorporated as an essential part of learning. Both formal education and non-formal education are indispensable to changing people's attitudes so that they have the capacity to assess and address their sustainable development concerns. It is also critical for achieving environmental and ethical awareness, values and attitudes, skills and behaviour consistent with sustainable development and for effective public participation in decision-making. To be effective, environment and development education should deal with the dynamics of both the physical/biological and socio-economic environment and human (which may include spiritual) development, should be integrated in all disciplines, and should employ formal and non-formal methods and effective means of communication.

Increasing public awareness

There is still a considerable lack of awareness of the interrelated nature of all human activities and the environment, due to inaccurate or insufficient information. Developing countries in particular lack relevant technologies and expertise. There is a need to increase public sensitivity to environment and development problems and involvement in their solutions and foster a sense of personal environmental responsibility and greater motivation and commitment towards sustainable development.

Promoting training

Training is one of the most important tools to develop human resources and facilitate the transition to a more sustainable world. It should have a job-specific focus, aimed at filling gaps in knowledge and skill that would help individuals find employment and be involved in environmental and development work. At the same time training programmes should promote a greater awareness of environment and development issues as a two-way learning process.

Source: UNESCO, 1992.

As can be seen from the discussion above, trends in environmental thinking (after Martinez-Alier) provide the basis for environmental education at local and global level. In the next section, I discuss the rise of education for sustainable development in the context of environmentalism of the poor. Again the reader is reminded that ESD cuts across the three streams of environmentalism as outlined by Martinez-Alier.

2.5.3 Environmentalism of the poor

Martinez-Alier (2002) notes that this third currency of environmentalism is variously called the environmentalism of the poor, popular environmentalism, livelihood ecology

and the environmental justice movement. This third currency is said to point at the fact that economic growth leads to increase in environmental impact due to extraction of natural resources as means of production (Martinez-Alier, 2002). However, Martinez-Alier points out that the main thrust of this currency is not "... so much a sacred reverence for nature but a material interest in the environment as a source and requirement for livelihood" (*ibid*: 11). He further argues that this currency is not so much concerned with the rights of other species (as in the cult of wilderness) and of future generations of humans as a concern for today's poor humans. He argues that "... its ethics derive from a demand for contemporary social justice among humans" (Martinez-Alier, 2002:11). Among other things environmentalism of the poor focuses on issues of poverty alleviation especially in the Third World "... that struggles against environmental impacts that threaten poor people ..." (*ibid*: 12).

I would argue that the struggles of the poor against environmental impacts that Martinez-Alier alludes to might only be achieved through education, or at least that education has a key role to play in defining integrated solutions to global inequalities and resource flows. The World Summit on Sustainable Development, a follow up to the 1992 Earth Summit, held in Johannesburg in September 2002 reaffirmed the role of education in helping to eradicate poverty through sustainable development by supporting the development of national programmes and strategies to promote education. This is to be done within the context of nationally owned and led strategies for poverty reduction, and to strengthen research institutions in education. The aim is to increase capacity to fully support the achievement of regionally and internationally agreed development goals related to education such as the New Partnership for Africa's Development (NEPAD), Millennium Development Goals and Education for All. The Johannesburg Summit also took cognisance of the need for nations to develop policies and means to improve access by indigenous people and their communities to economic activities. This resonates with Martinez-Alier's argument that environmentalism of the poor (in the context of her book *The Environmentalism of the Poor: A study of Ecological Conflicts and Valuation*) is concern with the majority of humankind:

... those who occupy relatively little environmental space, who managed sustainable agroforestral and agricultural systems, who make prudent use of carbon sinks and reservoirs, whose livelihoods are threatened by mines, oil wells, dams, deforestation and tree plantations to feed increasing throughput of energy and materials of the economy within or outside their own countries (Martinez-Alier, 2002:13).

The human and social aspects of sustainable development meant that solidarity, equity, partnership and cooperation were seen to be as crucial as scientific approaches to environmental protection. Besides re-affirming the educational and ecological sustainability objectives of the Millennium Development Goals and the Education for All Dakar Framework for Action, the WSSD proposed the Decade of Education for Sustainable Development as a way of signalling that education and learning was at the heart of approaches to sustainable development.

Martinez-Alier's framework of environmentalism has provided a useful tool to examine the historical shifts in proposed solutions to the environmental crisis, from preservation to conservation, through resource management and sustainable development, to sustainable living and greater equity. Environmental education, the focus of this study, cuts across all the three trends of environmentalism as articulated by Martinez-Alier (2002). As a field, environmental education has a relational character since it exists as a result of relations with the other fields in wider educational and environmental terrain (Gonzalez-Gaudiano, 2006). Gonzalez-Gaundiano argues that it does not focus on one essence such as nature, conservation or science but fuses features and elements from other fields. In many aspects, the arguments of these scholars have influenced the understanding and practice of environmental education in the SADC region. The SADC REEP (2002) recognises that the concept of environment has been used with different meanings at different times and in different contexts. It notes that a narrow understanding tends to focus on nature, or biophysical elements of our surroundings.

PART B

2.6 DEFINING THE FIELD OF STUDY

With the emergence of ESD following the Earth Summit in 2002 and more recently the WSSD and proclamation of the UNDESD, there have been numerous debates and contestations associated with the relevance of ESD discussed in environmental education (Janse van Rensburg, 1999; Lotz-Sisitka, 2004; Rickinson, 2006; Gonzalez-Gaudiano, 2006; Stevenson, 2006). As I embarked on this study when these debates were unfolding at the start of the Decade of Education for Sustainable Development, I faced many challenges from colleagues and critical friends who wanted to know whether the study was positioned as an environmental education or ESD research project. The declaration of the UN Decade of Education for Sustainability seems to have added impetus to the debate on the relevance of environmental education and a 're-naming' to ESD (Janse van Rensburg, 1999; Rickinson, 2006; Gonzalez-Gaudiano, 2006; Stevenson, 2006). This beckoned me to reconsider my field of study and to develop a deeper understanding of the current contestation in the field.

I found it problematic to simplistically substitute the term environmental education for Education for Sustainable Development and thus essentially change my field of study. Through the literature search, I was able to identify that the practice and principles of environmental education in southern Africa and in other countries in the South are similar to those enshrined in ESD discourse as scholars explain (Janse van Rensburg, 1999; Rickinson, 2006; Gonzalez-Gaudiano, 2006; Stevenson, 2006) For example, Janse van Rensburg notes:

The concept of Education for Sustainability [also ESD] brings together in one frame the educational concerns of the development and environmental worlds. In some southern African contexts these concerns have been conceptualised holistically within environmental education for some time now (Janse van Rensburg, 1999:15).

Gonzalez-Gaudiano (2006) argues that the human dimension that the proponents of ESD seem to promote were discussed in the Belgrade and Tbilisi reports and he does not see anything new in contemporary ESD discourse. He notes that perhaps what is new is the

emphasis. He further observes that the change of emphasis seem to devalue environmental considerations, which may lead to a loss of focus on environmental concerns embedded in environmental education.

McKeown & Hopkins (2005:221) note that:

Both [referring to EE and ESD] carry the same vision for a better world. They envision a world in which business, industry, government, and citizens practice environmental stewardship, leave smaller ecological footprints and participate in community-based decision making.

They argue that sustainability has three strands – environment, society and economy; that ESD deals with the same strands and that environmental education can contribute to ESD. This would dispel the myth that ESD is just a renaming of environmental education (McKeown & Hopkins, 2005). McKeown and Hopkins argue that as a result of the convergence of purpose, environmental education is a good entry point for ESD. They note that both environmental education and ESD call for behaviour change. “Education for Sustainable Development, like environmental education, assists people to rethink their behaviour toward the environment so they become better stewards of the environment ...”

The field of ESD is not very clear in southern Africa and will need more debate. For example one of the outcomes of the consultation process on participating in the UNDES D suggests that there is inadequate debate *and knowledge* (my emphasis) on sustainable development (Lotz-Sisitka et al., 2006). Table 2.5 provides some quotations from the consultation report, which corroborate this finding.

Table 2.5 Citations indicating inadequate debate on sustainable development in southern Africa

There is inadequate debate on Education for Sustainable Development and Sustainable Development (Zambia ESD Consultation Report).

There is a lack of knowledge on sustainability issues (Botswana ESD Consultation Report).

There is a lack of information on key areas such as environmental health and sustainable development issues (Swaziland ESD Consultation Report).

Source: Lotz-Sisitka et al. 2006

At the dawn of the UN Decade of Education for Sustainable Development, the SADC Regional Environmental Education Programme (through the Danida-funded Regional Environmental Education Support) commissioned research to provide a ‘futures perspectives’ on environmental education processes in southern Africa. The study – *‘Positioning southern African environmental education in a changing political, economic, social, natural and epistemological [environmental] landscape’* was carried out by Lotz-Sisitka (2004). She articulates how recent international developments and global frameworks such as the UN Decade of ESD, WSSD Implementation Plan, SADC Policy and structural changes, and NEPAD’s environmental action plan are likely to influence the field¹³ of environmental education in southern Africa. The study was aimed at providing an international perspectives or context to assist with ‘situating’ of environmental education processes in a rapidly changing (political, economic, natural, social and epistemological) landscape. One of the findings of Lotz-Sisitka’s study is what she calls the *virtual disappearance of ‘environmental education’* in the WSSD narratives (Lotz-Sisitka, 2004:16). However, she argues that “ ... if one probes the ‘embedded discourse’ in the WSSD Implementation Plan there is a ... strong need for environmental education processes in for example, education on cleaner production; education for sustainable agricultural and fisheries practices ...” (Lotz-Sisitka, 2004:16).

¹³ Lotz-Sisitka draws on Bourdieu’s (1998) social field to describe environmental education as an ‘emerging social field’ in southern Africa which straddles the more established (yet changing) field of education and the ‘younger’ environmental sector (often described as a new social movement).

The research argues that any ESD initiatives in southern Africa would need to incorporate a careful and critical look at the prevailing perspectives on sustainable development and patterns of appropriation within the prevailing political economies of the day, particularly where poverty alleviation is to be a major goal of sustainable development (Lotz-Sisitka, 2004; 2006). The study identified appropriation of the sustainable development narrative by neo-liberal economic market forces which are currently resulting in greater gaps between the rich and the poor and are increasing poverty, contrary to the popular belief in the 'trickle down' effect. The research further argues for continuity and expansion of environmental education initiatives in ESD in southern Africa, given the high levels of dependence on natural resources for livelihoods amongst the 75% of southern Africans that live in rural areas (Lotz-Sisitka, 2004). Evidence of practice on the ground shows that there has been a strong focus on enabling environmental education processes which are responsive to contextual socio-ecological and development issues (Janse van Rensburg, 1999; SADC REEP, 2002; Lotz-Sisitka, 2006). Most environmental educators in the region are grappling with the effects and impact of social (such as poverty, HIV/AIDS), economic and political and other issues arising from, and associated with, environmental degradation (SADC REEP, 2002; Lotz-Sisitka, 2004).

Drawing on the foregoing discussion, I elected to define my field of study as environmental education. This decision is further informed by the SADC REEP overall objective which focuses on enhancing and strengthening of environmental education for responding to environmental issues in the context of sustainable development (see section 1.4.1). However, I have attempted to draw out the shared meaning of environmental education and ESD rather than focusing on ambiguities, tensions and oppositional debates. Shallcross, Loubser, Le Roux, O' Donoghue and Lupele (2006) note that shared meanings are not intended to create the illusion of generic, universal descriptions of complex socially and culturally constructed terms but rather to identify common cross-cultural denotations. In the next section I look at the practice of environmental education in southern Africa in the SADC REEP context.

2.7 THE PRACTICE OF ENVIRONMENTAL EDUCATION IN SOUTHERN AFRICA

An increased understanding of the nature, magnitude and complexity of the environmental crisis has led a number of authors and scholars to argue for *social change*, or *social transformation* (Greenall, 1987; Robottom, 1987a; Fien, 1993; Janse van Rensburg, 1995; Lotz, 1996; Taylor, 1997). These environmental educators question the institutional context and scientific roots of environmental education, which dominated the understanding of the concept (and associated practice) prior to the 1990s. They see environmental education with a social focus and critical orientation as a more adequate response to the environmental crisis.

In southern Africa a narrow focus on the biophysical dimensions of environment has been recognised as inappropriate to address the complexity of environmental issues. The struggle to recognise the social, economic and political dimensions of environmental risks and issues has been a persistent feature of the regional environmental movement (SADC REEP, 2002). Within the SADC REEP a broad understanding of environment, as a number of interacting dimensions which all relate to the bio-physical world shapes the practice of environmental education processes for sustainable and equitable environmental management (SADC REEP, 2002). Schnack, Parker, and Sguazzin (2004) also note that the framing structure that informs environmental education discourse in the context of the SADC REEP describes environment as the *interaction* between biophysical, economics, social and political aspects. This has been interpreted with the aid of what Janse van Rensburg (1999) calls a wheel of interacting global concerns (Figure 2.1).

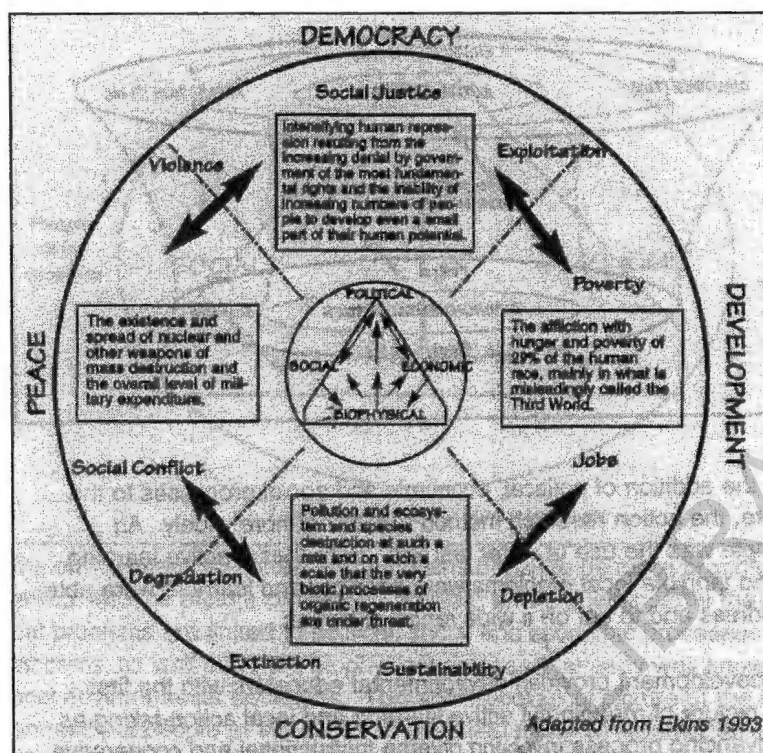


Figure 2.1 A wheel of interacting global concerns (Janse van Rensburg, 1999)

Due to the complexity of environmental issues and the diverse ways that environmental education is practiced in the region, the SADC REEP is implemented consciously to meet the regional needs and differences and aims to respond to changing context and needs (see section 1.4.3.4). This approach is also used at micro level (country, project level) where practitioners take responsive approaches that draw on the historical, ecological and contextual needs of the local people (SADC REEP, 2002). SADC REEP (2002:21) argues "... any meaningful learning context where teaching, whether involving the adults or younger people, must take cognizance of 'prior knowledge' and the disposition and needs of the learner". The programme is also aware of the fact that no single approach to environmental education will be suitable for all SADC states (see section 1.4.3.4). Hence the programme activities support open processes and flexible structures to enable environmental education practitioners to feel free to develop, adapt and implement environmental education processes that take into account the individual country's/projects' contextual situations and needs (Rosenberg, 2005). The commonalities that unite the SADC member states are also recognised.

Other regional influences on environmental education processes in southern Africa include: Environmental Education Association of Southern Africa 'Gaborone Declaration' which provides insights into the scope and priorities of environmental education practice in southern Africa¹⁴; EEASA annual conferences; and EEASA publications such as the *Southern African Journal of Environmental Education* and the *Bulletin* which serve as platforms for exchange of experiences and ideas. The bulletin and the journal profile some insights into the research and practice of environmental education in southern Africa. For example, the journal publishes and reports on a wide range of aspects relating to environmental education, ethics and action in southern Africa and elsewhere. The journal seeks to further the study and practice of environmental education, ethics and action by providing a forum where researchers, scholars, practitioners and policy-makers can share their experiences and skills and knowledge in the field. The EEASA conferences also provide a forum where environmental education issues and perspectives are debated. In short, both the EEASA conferences and publications provide a basis for networking and social interactions in the field of environmental education. The influence of EEASA networking on the establishment and functioning of the CDN will be discussed in section 2.9.

2.8 THE CONCEPT OF NETWORKING

The concept of networking is a globally dominant metaphor that has been used as far back as the 1960s in different contexts and disciplines (Latour, 1987; Zimmerli, 1998; Callon, 1999; Urry, 2003). Zimmerli (1998) recalls that thinking in concepts of networks originates from the discussions on networks in the neuronal system. This was later linked with semantic networks. He claims that the semantic networks paved the way to

¹⁴ EEASA is a non-profit membership organisation. Its primary role is to support environmental education processes mainly in southern Africa. EEASA was established in 1992 and since then has grown steadily and its membership has moved beyond southern African countries. EEASA holds annual conferences which take place in a selected southern African country. During the 2002 Botswana conference members made resolutions, now known as the Gaborone Declaration, which provides scope and priorities of environmental education practice in southern Africa.

networking practice in computer language. Perhaps this explains why the term networking has been popularised and is often associated with computers.

However, networking has been used in social settings for many decades (Zimmerli, 1998; Urry, 2003). They have been defined in a variety of ways. In general, the term networking has been associated with social movements that are perceived to cause conflict in society as they embody fundamental oppositions regarding contemporary issues such as environmental issues (Diani & McAdam, 2006). Increasingly, networks are seen to provide collective action which is characterized by identity and solidarity (*ibid*).

In traditional African societies, some forms of networks existed where communities resolved and attended to societal needs. Achebe (2000) in his book *Home and Exile* observes that although his Igbo nation¹⁵ in Nigeria had no central government in the pre-colonial times, a conglomeration of hundreds of independent towns and villages were bound in a network of daily exchange of goods and news among its people. He writes that networks brought about peace and cooperation among the people as they served the role of disseminating cross-communal obligations such as news about marriages, funerals, recreational songs and dances.

2.8.1 Networking as a basis for collaboration

In the last decade, social networks have evolved, both theoretically and practically. Networks are increasingly seen as part of a fundamental societal change in many aspects of life (Holmes, 2004). Braaksma, Faber, Grossenbacker, Rauch, Schritteser, and Segers

¹⁵ Chinua Achebe prefers to describe the Igbo as a nation rather than tribe. He notes that the conventional practice describes tribes as groups of (especially primitive) families or communities linked by social, religious or blood ties and often having a common dialect and a recognised leader. He argues that, based on this description, the Igbo people would score very poorly (Achebe, 2000).

(2003) describes social networks as formations of social relationships that influence the behaviour patterns of their members, where these members are individual people, groups, organisations or even whole societies. Fadeeva (2005a) notes that the process of change through networking consists of complex interactions that provide for multiple forms of feedback and unexpected interventions. In business, the exchange of thought and experience with others helps to resolve problems or come up with new ideas. Networking is also regarded as an important strategic instrument to achieve entrepreneurial objectives (Mercker, 2004). Urry (2003) observes that corporations are internally decentralized as networks; small and medium businesses are connected in networks as indicated by the Figure 2.2 – A billboard encouraging small entrepreneurs to network.



Figure 2.2 Billboard encouraging networking among small businesses. (I took this photograph at the junction of Hulme Hall Lane and Oldham Road, Manchester, UK, in 2005).

Networks generally tend to connect among themselves on specific business projects, and switch to another network when the project is finished (Urry, 2003:9). In economics, network structures are used to link the diverse knowledge of producers, suppliers and users located in different organisations in order to facilitate rapid exchange and decision making (Kuppers & Pyka, 2002). Kuppers and Pyka (2002) observe (writing in the context of the European Community-funded 'Self-Organising Innovation Networks'), networks represent a mechanism for innovation and diffusion through collaboration and the interactive relationship becomes not only a co-ordination device to create resources, but an essential enabling factor of technical progress. Thus most networks have shifted

from being means of mere exchange of information to more complex processes, involving the establishment of partnerships to foster the development of sustainable communities (see Davies, 2002); provide support structures for quality development in education (Braaksma et al., 2003); sustainable development of networks in a governance context (Bouckaert, 1998); and networking for human resources management and development (Meksawan, 1998), to cite a few examples. Of course, it is not uncommon to find a number of networks whose primary objectives are still the exchange of information both in business, science and education. Fadeeva (2005a) notes that the focus of a network to a particular problem(s) is often defined by the members' perception of the problem(s). Diani and McAdam (2006) note that studies in social networks have tended to focus on the following:

- Interorganisational exchanges in form of coalition building;
- Networking activities in social movement communities, whether 'real' or 'virtual';
- The intersection of individuals, organisations and protest events over time;
- Analysis of the role of advocacy groups, public interest groups and social movement organisations in policy networks.

According to Diani and McAdam (2006) the growing interest in network studies needs further exploration of the applicability and usefulness of the concept as an urgent and useful enterprise. They argue that due to the contestations of what the role and contribution of networks to action and change are, there is need to establish 'how networks matter' in relation to both individual participation and in relation to interorganisational dynamics.

In the case of this study whose focus is on how networking can enable professional development and institutionalisation, the above arguments would entail exploring how the CDN as a network matters in the professional development and institutionalisation of environmental education in the member institutions. This study views a network as a social setting that provides mechanism for learning (professional development) and institutionalisation of courses in the context of the SADC REEP.

2.8.2 Networking under the SADC REEP

In line with global trends in which networks have become one of the common forms of collaboration in environmental management and sustainable development (Fadeeva, 2005a), SADC REEP has created a wide range of networking opportunities that are aimed at enabling environmental education practitioners from the southern African region to contribute to and benefit from the programme. It "... emphasises the processes of sustained sharing and collaborative work inherent in meaningful participation ..." (SADC REEP, 2002:32) through networking. The programme adopts an open-ended framework of networking that supports and builds on existing networks without subsuming them into the programme. The regional programme distinguishes two types of networks.

The first type is the formal network, which is made up of National Network Representatives who have been nominated from each of the 14 member states. In most cases they are nominated from government line ministries (mainly environment and education) in different countries. The Network Representatives support the regional programme by facilitating and reporting on environmental education activities in their countries, guiding the functions of the SADC REEP, monitoring the relevance of the Programme and its responses to national and regional environmental education needs; among others (SADC REEP, 2002).

The second type of network, which has resulted from years of collaborative work, is the informal network. This consists of a number of institutions and individuals within the SADC region who interact and share a common interest in environmental education processes. The major focus of these two networks is the sharing of information on the activities, achievements, opportunities, collaborations and upcoming events associated with environmental education processes (SADC REEP, 2002). This is done by means of the *EEmail* - the newsletter of the SADC REEP (see Appendix 2 for a special edition on course development), which is printed and distributed in English and Portuguese. The other media is the electronic mini version of a newsletter called the *News Flash*. Another form of network existing is provided by Share-Net, which is involved in the

development, dissemination and use of resources materials in and for environmental education (Taylor, 1997). It also works in partnership with Rhodes University Environmental Education and Sustainability Unit (RUEESU) and many others. Share-Net is, however, recognised as a project WESSA national office.

2.9 ENVIRONMENTAL EDUCATION ASSOCIATION OF SOUTHERN AFRICA

In southern Africa the first form of large scale networking in environmental education was promoted through EEASA. The first EEASA conference took place in 1982 at Treverton College, Mooi River in Natal, South Africa. The five-day conference, which included participants from at least four continents, was a landmark for networking in environmental education in southern Africa. Of course, the majority of the delegates at the time were South Africans who were concerned with environmental education. However, the Treverton conference saw the formation of a more regional EEASA. Ever since 1982, EEASA conferences have been held annually in different countries of the region. EEASA has played a significant catalytic, developmental and co-coordinating role in the growth of environmental education in the sub-region.

During EEASA conferences, environmental educators in the SADC region and beyond exchange ideas and information on practice and research in environmental education. It has been during EEASA conferences that the ideas and materials on course development have been exchanged among delegates (see chapter 6). Most environmental education courses in the region have their origins in EEASA presentations. Chapter 6 (section 6.2) provides a detailed account of how both the Gold Fields Course and the Rhodes University/SADC International Certificate Course in Environmental Education grew out of EEASA conferences. Aside from exchanges at conferences, EEASA also provided a medium for exchange of ideas through its regular publications such as the *Southern African Journal of Environmental Education* (started in 1984) and the *Environmental Education Bulletin* (from 1988). EEASA has also organised workshops and seminars on a wide range of issues and topics. The association has, from its inception, promoted

networking on the premise that southern Africa countries have much in common, in environmentally related issues.

2.9.1 Organisation of networks

There are a number of variations in the organisation and implementation of networks.

Eade (1997:155) identifies four types of networks:

- *Bicycle wheel or star networks*: where members communicate with each other through the centre, through which information also passes;
- *Family tree networks*: information begins at the top, and works its way down to each successive level, with little communication among members or across 'generations';
- *Spiders' web or loose weaving networks*: a clear centre which sets the direction, but with many sub-networks and webs of communications among members;
- *Fishing-net or loose weaving networks*: the 'centre' can shift according to need, with many 'nodes' of communication throughout the network.

Urry (2003:51) later identifies three basic topologies of networks as: (1) *Line or chain networks* which has a number of nodes that are spread out in more or less linear fashion; (2) *Star or hub networks*, where most important relationships move through a central hub or hubs; and (3) *All channel networks*, in which communications proceed in more or less all directions across the network simultaneously. In the case of this study, the CDN had its coordination office based at Rhodes University with extra support from SADC REEP at Howick. Members communicated with each other through the coordination office and occasionally individually. Notices for meetings and other network information and directions were set at the centre (see chapter 6 for details), representing a star or hub network.

2.9.2 Effectiveness and power of networks

It is said that loosely coupled networks are often more effective as is evident in traditional African societies where information (about deaths, ceremonies and meetings) is passed from person to person (see Achebe, 2000). Urry (2003) argues that the power of any network can be said to stem from its size, as indicated by the number of nodes within it, by the density of networked connections between each node, and by the connections

that the network has with other networks "... few extra participants significantly increase[d] the value of the network for everyone ..." (Urry, 2003: 52). The argument is based on the premise that wealth comes not from scarcity, as in conventional economics, but from abundance (Urry, 2003). Urry's argument means that the strength of the network lies in the numbers of the members. Diani and McAdam (2006:5) note that networks can:

- Provide opportunities for collaboration;
- Facilitate the development of cognitive skills and competences;
- Provide the context for the socialisation of individuals to specific sets of values;

All three dimensions of what a network can do are important to this study, which focuses on professional development and institutionalisation of environmental education in southern Africa in the context of SADC REEP.

2.10 PROFESSIONAL DEVELOPMENT IN ENVIRONMENTAL EDUCATION

Two traditions have been influential in the defining of professionalism – the functionalist approach and the neo-western traditions (Moos & Krejster, 2003). The functionalist approach places emphasis on the functions professionals provide to society i.e. professions are described in the light of the practices they ought to perform and in terms of the reproduction of cultural knowledge, values and skills they provide. On the other hand, the neo-western approach describes professions in the light of occupational groups. According to Moos and Krejster (2003), this approach calls attention to the self-interest of occupational groups as the driving force in the process of professional development.

Generally speaking, professionalism has traditionally been associated with having a knowledge base, commitment to service, collective identities and autonomy in one's field (Day, 2003). This means that professionalism lies in the experience one is able to draw on to solve a given situation. Abdal-Haqq (1996) notes that in the United States, professional development (in education) has traditionally focused on improving subject-

matter knowledge and pedagogical skills; understanding cultural and psychological factors that affect student learning; and assuming responsibilities for curriculum, assessment, outreach, governance and inter-agency collaboration. He observes that in some parts of the United States meeting these demands is often stressful for the old teachers whose training did not provide for the set indicators in the restructured schools.

Professional development is a contested terrain and as such there is no common understanding. The SADC REEP's broad field of operation, diverse culture and contexts of participants makes it even more difficult to have a common understanding (Schnack et al., 2004). Therefore, this study does not attempt to arrive at a common understanding of what it means to be professional in environmental education course development processes; rather it draws on the individual members' understanding of what it means to be professional in environmental education course development (see chapter 7). Thus, in this study professionalism emerges from what Lave and Wenger (1991) call a 'community of practice' (see section 3.5 and chapter 7). They observe that in a community of practice collective learning results in practices that reflect both the pursuit of enterprises and the attendant social relations. The study draws on Sachs' (cited in Day, 2003:49) five core values or fundamentals of proactive and responsible approaches to professionalism i.e. *learning, participation, collaboration, co-operation and activism*. I find this framework to be congruent with Robottom's (1987b) guiding principles for professional development in environmental education (based on action research). These have been influential in clarifying professional development approaches in southern Africa (Janse van Rensburg & Le Roux, 1998; Lotz, 1999). These have the following elements:

1. *enquiry-based;*
2. *participatory and practice based;*
3. *critical;*
4. *community-based;*
5. *collaborative.*

I relate Robottom's guiding principle 1 to learning; 2 to participation; 3 to activism; 4 and 5 to co-operation as used by Sachs (cited in Day, 2003:49) above. Sachs' framework elaborates the concept of professional development. In the context of the CDN, the study probes the question of what conditions need to exist for professional development to happen (see Chapter 7).

2.10.1 Approaches to professional development

Nowlan (2001) notes that historically, professional development was based on behaviourist model of learning. She proposes a constructivist approach coupled with a long-term mentorship as the means by which a successful professional development programme can be achieved. Robottom (1987b) also observes that rational, technocratic approaches to professional development (which are dominant in most professional development approaches) are inappropriate responses to the challenge confronting environmental education in formal education settings. He argues that rational and technocratic approaches tend to be instrumentalist, where teachers are seen as *technicians* who are supposed to carry out instrumentalist-type research to test the effectiveness of activities. He argues this against the Tbilisi Conference document (*ibid*), which suggests a scientific and experiential approach to environmental education. Robottom (1987b) argues that the overall view of educational change recommended by the earlier UNESCO programme (in the context of the Tbilisi conference document) is a centre-periphery strategy, which retains the characteristics of the rationalist research, development, dissemination and adaptation (RDDA) model. He further argues that the theory of change adopted by UNESCO in the context of Tbilisi reiterates the emphasis on curriculum materials produced in one site and designed, with the assistance of research and experimentation, " ... to 'be convincing', to 'persuade', and to 'encourage' other educators, learners and interested parties at other sites ..." (Robottom, 1987b:92). He notes that such rationalist, technocratic approaches to professional development are inappropriate responses to the challenge confronting environmental education in formal education. Robottom (*ibid.*) argues for a reconstruction of professional development as being underpinned by the proposition that practitioners, far from being 'atheoretical' in the way assumed by technocratic RDDA-type approaches to the improvement of the

organisation of environmental education actually have rhetorical views that guide their practice.

Carr, cited in Robottom (1987b:105) contends that "... it is difficult to know how any teacher could ever undertake any educational practice without some knowledge and understanding of the situation in which he is operating and some idea of what it is that needs to be done". Robottom (1987b) argues that professional development in education must be based on a form of educational enquiry that encourages a critical analysis of theories, practices and settings. He argues that action research is a form of educational inquiry, which possesses these qualities and is therefore an appropriate inquiry base for professional development in environmental education. Action research has also been extensively used in the Environment and School Initiatives (ENSI) to enable professional development (see chapter 5).

However, professional development in environmental education in southern Africa has been approached from different theoretical vantage points in different settings and countries. Schnack et al. (2004) note that most professional development in the four southern African Danida-funded projects¹⁶ regard professional development as 'life long reflective learning processes' which is long term, requiring continuity, systemic support and fairly intensive input. In a sense, many other environmental education projects and studies in southern Africa share this view of professional development (Raven, 2005; Motsa, 2004; see Lotz-Sisitka & Raven, 2004). The fact that professional development approaches adopted by many projects in southern Africa are similar in many ways can also be deduced from Schnack et al.'s (2004:43) observation (in the context of Southern Africa Danida funded projects) "Professional development models followed by the

¹⁶ These are: Regional Environmental Education Support Project (REES); National Environmental Education Project for General Education and Training (NEEP-GET South Africa); Supporting Environmental Education in Namibia (SEEN); and the Lesotho Environmental Education Support Project (LEESP). The research was commissioned by REES Sub-project 3 – Cooperation amongst Danida-funded bilateral projects in Lesotho, Namibia and South Africa.

projects have some similarities in approach, but are all very different from each other within and between projects and all offer advantages as well as disadvantages”.

2.10.2 Common professional development models used in southern Africa

The three common professional development models used in southern Africa are: spiral model; cluster-based and cascade model.

The spiral model was extensively used in the Learning for Sustainability Project (Du Toit & Sguazzin, 1999; Janse van Rensburg & Mhoney, 2000). The project used environment as a phase organiser in South Africa’s outcome based education system. It explores how teachers can use photographs to develop open-ended curricula, when looking for new ways to develop learning programmes, to achieve critical and specific outcomes. A spiral model (as in the case of the Learning for Sustainability Project) usually starts with simple ideas and moves outward in ever broadening circles, representing increased sophistication over time. Du Toit and Sguazzin (1999) argue that, although a spiral has a fixed starting point, there is no defined end point. In terms of professional development, the spiral model allows for the building of increasing levels of sophistication and complexity (Du Toit & Sguazzin, 1999). Figure 2.3 shows a graphic representation of the spiral model in the context of the Learning for Sustainability.

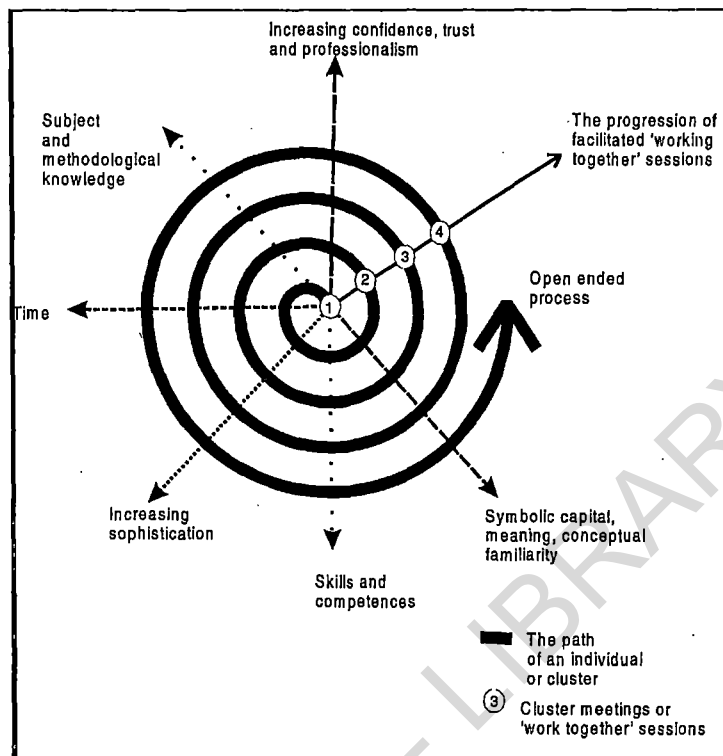


Figure 2.3 The spiral model of professional development (Source: Du Toit & Sguazzin, 1999).

In **Cluster-based** approaches (within a spiral model) as used in the Danida-funded National Environmental Education Project for General Education and Training (NEEP-GET) in South Africa (NEEP-GET, 2004), participants developed and kept professional development portfolios which were linked to work done within a cluster in the form of ‘work together’ and individual work ‘work away tasks’. Thus, a portfolio became a ‘tool’ for encouraging and supporting a process orientation to professional development; enabling the development of educators as reflective practitioners; supporting the engagement in ongoing cycles of action and reflection; enabling the development of applied competence; and balancing structure and flexibility (see NEEP-GET, 2004:2-3).

The cascade model is perhaps one of the most commonly used in programmes such as ‘educating the educators’ or ‘training of trainers’. Examples of this model can be drawn from the WWF Zambia Education Project which runs a one month environmental education course for lecturers from primary teacher training colleges (Muwowo, Lupele & Chisaka, 2005). At the first level of the cascade, selected lecturers from teacher

training colleges attend a one-month environmental education course. They are trained by 'experts' and facilitators. It is a requirement of the course that the trained lecturers will train their colleagues at their work places by sharing their experiences and involving them in the training programmes with students (level two of the cascade). On the third level, trained lecturers are expected to integrate environmental education into the teaching of their trainee teachers who in turn are expected to teach (fourth level) pupils in school.

Although I have attempted to draw examples from the region on the various models or approaches to professional development, in reality many projects do not have a clear theoretical framework that shapes the professional development approach to be followed¹⁷. For example, although I have portrayed the WWF Zambia Education Project Training of Trainers Course in Environmental Education as employing a cascade model of professional development, there is no clear and explicitly stated pedagogical outlook or approach to professional development within its project documents. The above description is based on an analysis of the project activities, objectives, and the overall aim of the project.

2.11 INSTITUTIONALISATION OF ENVIRONMENTAL EDUCATION

As already stated, the aim of the SADC REEP is to strengthen capacities of institutions and individuals in environmental education in southern Africa (see section 1.4.1). Part of the rationale behind the establishment of the CDN was to contribute to the SADC REEP aim by supporting environmental education course development processes in the region (see section 1.4.1). By implication, strengthening capacities and capabilities of institutions and individuals in environmental education processes entails making environmental education an integral part of the institutions and countries being supported by SADC REEP. The assumption is that this will enhance sustainability of the processes

¹⁷ The South African Learning for Sustainability Project is one of the few exceptional cases. Resources and time were invested to develop models for professional development that were congruent with the research and Outcomes-Based Education Curriculum framework (Janse van Rensburg & Le Roux, 1998; Du Toit & Sguazzin, 1999a; Janse van Rensburg & Mhoney, 2000).

long after SADC REEP project life is over. It is assumed that institutionalisation of environmental education processes takes place in the region as institutions and countries take over and sustain project benefits and activities. However, Schnack et al. (2004) warn that institutionalisation is not an easy process and needs to be negotiated and implemented within specific institutions in nationally and institutionally specific ways. They argue that there must be a clear theoretical framework within a host institution that should be framed by the institution's policy (structure). They suggest that where such policy does not exist or is unclear the project needs to develop and articulate its theoretical framework. Further, they contend that a clear framework helps host institutions to understand, evaluate and possibly take on board project activities and/or innovations.

Writing in the context of the four Danida funded projects in southern Africa¹⁸, Schnack et al (2004) suggest some broader points, which can be drawn on to enable institutionalisation of environmental education in southern Africa. I draw on and extend these points as summarised below:

- **Political commitment at all levels of host institution.** Projects are often negotiated, designed and agreed at a political level, but implemented at an administrative level. Schnack et al. (2004) note that it would be useful to talk to host institutions during the project design *and implementation stage* (my emphasis) to ensure commitment at all levels i.e. national and institutional levels. They observe that it is important that political commitment is secured at appropriate levels on an ongoing basis.
- **Institutionalisation requires a post or a person.** Sustainable project benefits often require some alterations in a host institution's structure, particularly if it is anticipated that selected project activities will be taken on board and implemented by the host institution after the project's life span. These alterations need to be agreed on and made before rather than during a project if people in the posts are to grow into their roles and responsibilities. Host institutions who allocate responsibilities for project activities to staff within existing posts need to factor in the costs in terms of time that

¹⁸ The four Danida funded projects were:

- Regional Environmental Education Support Project (SADC REES)
- Supporting Environmental Education in Namibia (SEEN)
- Lesotho Environmental Education Support Project (LEESP)
- National Environmental Education Project – General Education and Training phase (NEEP-GET).

this will incur, i.e. the person should be released from other duties in order to enable him/her to fulfill the expectations related to the host institution as well as the project. Job descriptions may need to be amended, and there will need to be supervision and accountability within the required role.

- **Collaboration and synergies.** Environment is a broad field, and there are often many projects working on related issues operating within the host organisation *and at national level* (my emphasis). Often valuable opportunities for collaboration are missed as each project works in isolation. Initial project design processes could explicitly work towards better integration with existing projects and programmes – bearing in mind reporting and other operational constraints required by funders.
- **Recognition of ‘invisible work’.** Relationships need to be built and trust established within host institutions before projects can operate at their full capacity. This is often ‘invisible work’, unrecognised in project documentation or reporting, but can be amongst the most important work a project engages in, in terms of sustainability. Some mechanism that recognises and allows time for such work would be useful for institutionalisation.
- **Capacity development** – working within and for the system. The increased focus on building internal capacity of institutions rather than outsourcing functions needs to be explicitly recognised. The projects need to perform a valuable function as regards capacity building within their host organisations in both formal and non-formal ways. From the initial design, projects need to explicitly clarify internal capacity development processes in their project activities and outputs, what activities they will engage in and how they will engage in them.
- **Institutional structure and role conflict.** One of the complicating factors in the process of institutionalisation of ideas/activities is fitting into an institutional structure. This means that project staff have ‘many bosses’ both within and outside of their host organisation. Clear responsibilities and lines of communication and ‘command’ should be negotiated prior to project implementation, and agreed to by all. This would help to avoid tensions and role conflicts that arise from projects being pulled in different directions to serve different needs.

As explained in Chapter 6 (section 6.3.5) Assumption 5, the process of institutionalisation in the case of the CDN was assumed to start at the funding proposal writing stage by the partner institutions. In discussing findings on institutionalisation (see chapter 8), I draw on the above framework and follow the underlying assumptions to review what actually happened, as reflected in data and experience of the course developers during the life of the network.

2.12 CONCLUSION

The contextual and conceptual aspects discussed in this chapter form the backdrop that influenced and shaped this study. The broader context of the study indicates that the post-colonial and post-*apartheid* era have influence on the way that projects such as the CDN play out at the local and regional level. Both the post colonial and post *apartheid* periods have ambivalences that affect regional integration and cooperation both positively and negatively. The chapter also highlights the fact that regionalism forms the basis of cooperation and collaboration among SADC member states. This is an important aspect of this study due to the fact that the SADC REEP is an offshoot of regionalism. Subsequently, its projects such as CDN assume this status when they work across the region.

The chapter also examines trends in environmentalism and how these shape environmental education and other emerging discourses such as sustainable development and education for sustainable development in southern Africa. I have structured the discussions around these concepts by means of Martinez-Alier's (2002) framework of what she calls the 'currency of environmentalism'. I have also reviewed some key concepts that influence the study. These are: theories and practices of networking; professional development as practiced in southern Africa; and lastly institutionalisation of innovations such as environmental education. In discussing these aspects, I have attempted to draw on international debates and discourses to reflect on the local practice and understanding. I have also drawn on emerging theory and practice in the field of environmental education in southern Africa. The next chapter looks at the theoretical perspectives that informed this study. These have been drawn on to provide a greater depth of understanding and interpretation of networking and professional development in southern African context (see chapters 5, 6, and 7).

CHAPTER 3

THEORETICAL FRAMING OF THE STUDY

3.1 INTRODUCTION

This chapter provides insight into the theoretical framing of the study. The theoretical framework involves three relational theories (see section 1.7). They include some aspects of Critical Realism (Sayer, 1984; Pawson & Tilley, 1997; Somerville, 2002; Schostak, 2002), Actor Network Theory (ANT) (Latour & Woolgar, 1979; Latour, 1987; Law, 1992; Callon, 1998; Latour, 1999) and situated learning drawn from theories of Community of Practice (COP) (Lave & Wenger, 1991; Somekh & Pearson, 2002; Altrichter, 2005). Relational philosophy underpins the three theoretical perspectives and binds them together (see section 1.7). Critical realism provides the ontological perspective of the study while ANT and COP deal with the epistemological perspectives as they are used in the analysis of the networks (chapter 5 and 6) and professional development (chapter 7) respectively. A number of relational thinkers (Callon, 1986; Latour, 1987; Lave & Wenger, 1991; Latour, 1993a; Emirbayer, 1997; Sayer, 2000; Danermark, Ekström, Jakobsen, Karlsson, 2004; Archer, 2003; Kumar, 2004) also provide further insights informing the theoretical frame of this study. I start this chapter by looking at the relational view of knowledge, as it forms the basis of the ontological position of this study.

3.2 RELATIONAL VIEW OF KNOWLEDGE

Critical realists view knowledge as a process (see for example, Latour, 1987; Sayer, 2000). Sayer refers to knowledge as 'knowing' which is a process of becoming, 'in solution' as opposed to the notion of knowledge as a product or thing that exists outside us, which can be possessed and stored in its finished form in our heads or shelves in the library. He argues that knowledge cannot be defined without understanding what gaining knowledge is. Latour (1987:210) argues " ... knowledge is not something that could be

described by itself or by opposition to 'ignorance' or to 'belief' but only by considering a whole cycle of accumulation ...". He advises that in order to combat this static view of knowledge, the production of knowledge should be viewed as a social activity. Sayer (1984) further argues that knowledge does not only concern 'what is the case' or 'knowing – that' but it is also concerned with 'know-how' i.e. knowing how to do something. With regard to this study, it would not have been enough for the CDN members to understand the processes of course development without getting involved in the actual development of courses (Lave & Wenger, 1991).

Lave and Wenger (1991) observe that *knowing* is inherent in the growth and transformation of identities. They further state that *knowing* is located in the relationships among practitioners, their practice, the artifacts of that practice and the social organisation and political economy of communities of practice (see section 3.5 for details on Communities of Practice).

In Paulo Freire's (1970) banking concept of education, knowledge is viewed as a gift bestowed by those who consider themselves knowledgeable upon those they consider to know nothing. He explains that this sort of thinking projects others as ignorant; this is a characteristic of the ideology of oppression which tends to negate education and knowledge as a process of inquiry (Freire, 1970). In the banking concept of education, the scope of learners' participation is limited to receiving, filing, and storing the deposits of knowledge.

Latour (1987) further views knowledge as being made up of different tightly sealed black boxes – in reference to cybernetician's black box. He describes a black box as "... a situation when many elements are made to act as one" (Latour, 1987:131). For example a computer can, in this context, be said to be a black box because the many different parts (elements) function as one – the computer. Further black boxes could be a piece of equipment, a statement, scientific result, a theory or even a person with predictable habits. He argues that for one to know or understand the make up of a black box, one has to open it up (see section 3.3.3 on the notion of abstraction).

An example of a black box from Latour's writings could be found in his descriptions and arguments on the invention of the diesel engine by Rudolf Diesel. He notes that Diesel's initial sketch, blue print and one prototype went through a process of transformation as it moved from one individual to another. Other people transformed the design and the principle of the engine. Latour explains that at the end of the day, the final product of the diesel engine was different and much improved than the original design. Many other parts which were not in the original design were developed or incorporated from earlier inventions. The final engine is said to be a black box whose components and function can only be understood by opening it up. Otherwise a black box seems unproblematic when put into use as people tend to forget (or ignore) the many trials and transformations it had to go through to become what it is.

The relational nature of knowledge as described in this section has implications for understandings of professional development and institutionalisation of environmental education. Further, accepting the notion of the construction of knowledge as a social process will enable me to identify some of the enablements and constraints associated with knowledge construction in a network such as the CDN that may affect such a process.

Having discussed the relational view of knowledge, I now turn to discuss the three main theoretical perspectives shaping this study as earlier noted namely; Critical Realism, Actor Network Theory, and Communities of Practice. Some readers may find my working with three theoretical perspectives unconventional in education and social science where the research process is often seen through one lens (theoretical framework). I draw my strength of working with the three theoretical orientations from our earlier work Lupele, Mwingi, Kinyanjui, Kimani & Kisamba (2005) (see Appendix 3 for the paper), where we argue that there is no one paradigm that can be used to see all 'things' in any given study. Danermark et al. (2002) also argue that in social science research there is a need to work with a number of methods if they are complementary, and that they aid in providing rigour to the research. In the case of this study, the three

theoretical perspectives play complementary roles which together provide a broader lens to interrogate the research process. In the next section I discuss critical realism.

3.3 CRITICAL REALISM

This study draws on critical realism as ‘under-labourer’ to further elaborate the relational ontology perspective. The roots of critical realism can be traced to the work of Roy Bhaskar (Sayer, 1984; Yeung, 1997; Pawson & Tilley, 1997; Schostak, 2002). There are a number of varieties and versions of critical realism which are not entirely consistent with each other (Yeung, 1997). It is not the intention of this study to engage in a full-fledged review of the realist philosophies or to provide space for evaluation of the different varieties. Nevertheless, the study draws on realist perspectives that provide insights into the research questions (see section 1.6). These are mainly based on what Yeung (1997) calls the Bhaskarian version of scientific realism in social science. That is, critical realism that argues for the existence of reality independent of human consciousness (realist ontology) and that which reorientates the social sciences towards its emancipatory role (realist epistemology). The study also draws on realist social theory, which seems to further clarify earlier Bhaskarian critical realism in sociological context, as articulated by Archer (1982; 2003).

3.3.1 Stratified ontology

Critical realists argue for the existence of reality outside human thoughts about it (Sayer, 1984; Sayer, 2000; Archer, 2003). Danermark et al. (2002) note that critical realism provides an answer to the nature of reality. They argue that there exists both an external world independent of human consciousness and at the same time a dimension which includes our socially determined knowledge about reality.

We argue that there is a reality, independent of our knowledge of it, but also that reality is not something immediately fixed and empirically accessible. Further reality contains a dimension, not immediately observable, where we find mechanisms which produce the empirically observable events (Danermark et al., 2002).

Viewing reality in this manner has implications (in research) in terms of data generation, inferences, and analysis as exemplified in chapters 4, 5, 6, 7, 8 and 9 of this study. Sayer (2000) warns that critical realism should not be confused with empiricism – which identifies the real with the empirical i.e. with what we can experience. This assumes that the world happens to correspond to the range of our senses and to be identical to what we experience. Critical realism distinguishes not only between the world and human experience of it, but between the real, the actual and the empirical (*ibid*). His explanation of the three concepts can be summarized as follows:

- **Real** is whatever exists, be it natural or social. Real is a realm of objects, their structures and power. Objects have certain structures and causal powers which make them behave in particular ways. They also have causal liabilities or passive dimensions i.e. specific susceptibilities to certain kinds of change.
- Whereas the real refers to the structures and powers of objects, the **actual** refers to what happens if and when those powers are activated.
- The **empirical** is defined as the domain of experience with respect to either the real or the actual. It is contingent (neither necessary nor impossible) whether we know the real or the actual. Rather than relying purely upon a criterion of observability for making claims about what exists, realists accept causal criterion as well (Sayer, 2000: 11-12).

According to Sayer (2000) a crucial implication of this ontology is the recognition of the possibility that powers may exist unexercised, meaning that what is known to have happened does not exhaust what could have happened. He observes that the nature of the real objects present at a given time constrains or enables what can happen but does not pre-determine what will happen. This realist ontology makes it possible to understand how we can become many things which we are not. For example how novice course developers can become expert course developers or how a weak network of course developers becomes a strong network, or alternatively does not fulfill its potential.

By distinguishing the real, the actual and empirical, critical realism proposes a ‘stratified ontology’ in contrast to ‘flat’ ontologies populated either by the actual or the empirical, or conflation of the two as noted by Archer (2003) and Sayer (2000). Sayer explains that empirical realism assumes that what we can observe is all that exists, while ‘actualism’ assumes that what actually happens at the level of events exhausts the world of powers which can be either activated or remain dormant.

In order to further develop an understanding of critical realism as applied in this study, it would be important to clarify some of the terminologies used in this section. They include: structure and agency; abstraction¹⁹; relations and structure (structural analysis); abstraction and structure analysis; causation and causal analysis; the notion of reflexive deliberations (internal conversation) and its mediatory role between structure and agency. These aspects are cardinal to the understanding of how change or transformation occurs in society and in social networks such as the CDN (see chapter 9).

3.3.2 Structure and agency

Structure

The terms structure and agency have been a source of controversy in the social sciences. Archer (2003) argues that there has been no ontological consensus about what 'structure' and 'agency' are in social science. She claims that the only agreement is that "... in some sense 'structure' is objective whilst in some sense 'agency' entails subjectivity" (Archer 2003:1). Giddens (1981) argues for duality of structure, where structure is seen as a medium and outcome of practices in social systems. Sewell (1992) interprets Giddens' notion of duality of structure thus "... structures shape people's practices, but it is also people's practices that constitute (and reproduce) structures ..." (*ibid*:4). Giddens formally defines structure as "... rules and resources, recursively implicated in the reproduction of social systems. Structure exists only as memory traces, the organic basis of human knowledgeability, and instantiated in action" (Giddens, 1984:377).

Sewell (1992) argues that Giddens' use of the term 'rules' implies some formally stated prescriptions – such as ideas spelled out in statutes, proverbs, constitutions or contracts. In order to avoid Giddens' perceived ambiguity about the meaning of the word 'rules', Sewell proposes to replace the term 'rules' with 'schemas' which he claims go beyond formal predetermined prescriptions that are associated with the term rules but still retains

¹⁹ In common usage, the word abstract often means 'vague' or 'removed from reality'. Sayer (1984) uses an abstract concept, or an abstraction to isolate in thought a one-sided or partial aspect of an object.

Giddens' generalisable procedures applied in the enactment/reproduction of social life. That is, they can be transposed or extended to new situations when the opportunity arises. In Sewell's theorizing of schemas, their generalisability and transposability make them virtual i.e. they cannot be reduced to their existence in any particular practice or any particular location in space and time. They may include rules, etiquette, or aesthetic norms or recipes for group action. While agreeing with Giddens's use of the term 'resources' in his definition of structure, Sewell argues that the term needs to be reformulated and put into ordinary English. He identifies two types of resources - human and non-humans.

Non-human resources are objects, animate or inanimate, naturally occurring or manufactured, that can be used to enhance or maintain power; human resources are physical strength, dexterity, knowledge, and emotional commitments that can be used to enhance or maintain power, including knowledge of means of gaining, retaining, controlling, and propagating either human or non-human resources (Sewell, 1992:10).

Sewell further argues that Giddens' definition of structures as virtual, while true for 'rules' or 'schemas', is rather problematic when it comes to resources. He notes that the notion of virtual resources is problematic when applied to non-human resources (allocatives in Giddens' terms), physical assets such as factories, buildings, land etc. He notes that non-human resources have a crucial weight in shaping and constraining social life in particular times and places and it seems sensible to include them in some way in the concept of structure.

Through what he calls reformulation of Giddens and Bourdieu's²⁰ theorizing of structure, Sewell (1992) provides some insights of how the metaphor of structure should be understood. He argues that structures are constituted by mutually sustaining cultural schemas and sets of resources that empower and constrain social action and tend to be reproduced by that action.

²⁰ Bourdieu (Sewell, 1992) recognises the mutual reproduction of schemas and resources that constitutes temporally durable structures – which he calls 'habitus'. His discussion of habitus powerfully elaborates the means by which mutually reinforcing rule-resource sets constitute human subjects with particular sorts of knowledge and dispositions. In Bourdieu's habitus, schemas and resources so powerfully reproduce one another that even the most cunning or improvisational actions undertaken by agents necessarily reproduce the structure.

Agents are empowered by structures, both by the knowledge of cultural schemas that enables them to mobilize resources and by the access to resources that enables them to enact schemas ... Structure is dynamic, not static; it is the continually evolving outcome and matrix of a process of social interaction. Even the more or less perfect reproduction of structures is a profoundly temporal process that requires resourceful and innovative human conduct. But the same resourceful agency that sustains the means of transpositions of schemas and remobilizations of resources that make the new structures recognizable as transformations of the old (Sewell, 1992:27).

The foregoing quotation of Sewell's theorizing of structure is central to this study in a number of aspects. First, it helps to probe the schemas and resources available in the CDN to enable professional development and institutionalisation of environmental education in the partner institutions. Second, like he argues, the knowledge of cultural schemas was not predetermined but evolved with time as the network (which I refer to as a structure) grew over time and space (see chapters 7, 8 and 9). Third, Sewell (*ibid*) seems to provide a conceptual vocabulary that makes it possible to show how the ordinary operations of structures (in this case the CDN) can generate transformation (taken to mean professional development and institutionalisation in the context of this study). Fourth, Sewell's theorization of structure shows how change is generated by the operation of structures internal to a society as opposed to other structurally inclined theorists' whose accounts of social transformation tend to introduce change from outside the system and then trace out the ensuing structurally shaped changes.

Sayer (1984) observes that structures are internally related objects or practices (schemas and resources, in the light of Sewell's conceptualisation of structure). He postulates that 'structure' suggests a set of internally related elements whose causal powers, when combined, are emergent from those of their constituents. He argues that within social structures there are particular 'positions' associated with certain roles and there is a need to appreciate that the structure of social relations, together with their associated resources, constraints or rule have influence on what happens, even though these structures only exist where people reproduce them. He argues that in the social world, people's roles and identities are often internally related such that what one person or institution can do depends on their relation to others. In this study, the CDN operations manifest these

relationships between the network members, partner institutions, SADC REEP and the participating countries (see section 1.1).

Critical realist theory explains that objects are said to have 'emergent power' (Sayer 1984: 109) that is, powers and liabilities which cannot be reduced to those of their constituents. This phenomenon suggests that the world is not only differentiated but stratified. Archer (2003) argues that 'structure' and 'agency' are seen as distinct strata of reality, as the bearers of quite different properties and powers which are emergent.

Agency

Sewell (1992) defines agency as the capacity to transpose and extend schemas to new contexts. He notes that "... agency, to put it differently, is the actor's capacity to reinterpret and mobilize an array of resources in terms of cultural schemas..." (Sewell, 1992:19). Further, he observes that agents are empowered to act with and against others by structures: they have knowledge of the schemas that inform social life and have access to some measure of human and non-human resources. He further postulates that agency arises from the actor's knowledge of schemas, which means ability to apply them to new contexts. To put the same thing the other way around, agency arises from the actor's control of resources in terms of schemas from one context to the other. Agency is implied by the existence of structures (Sewell, 1992).

Sewell (*ibid*) observes that structures empower agents differently. This also implies that they (structures) influence the embodiment of the desires, intentions, and knowledge of agents differently as well. He explains that structures and human agency are laden with differences in power. He insists that agency is collective and individual as transpositions of schemas and remobilizations of resources that constitute agency are always acts of communication with others as noted in the following quotation:

Agency entails an ability to coordinate one's actions with others and against others, to form collective projects, to persuade, to coerce, and to monitor the simultaneous effects of one's own and others' activities. Moreover, the extent of the agency exercised by individual persons depends profoundly on their positions in collective organisations (Sewell, 1992:21; see also Archer's reflexive deliberations section 3.3.7).

3.3.3 Abstraction and structure analysis

Sayer (1984) argues that to be practically adequate, knowledge must grasp the differentiations of the world by finding a way of individuating objects, their attributes and relationships - knowledge must be 'abstracted' from particular conditions by excluding those which have no significant effect in order to focus on those which do i.e. select and abstract their constituents. He argues that it is possible to identify the different schemata that make up a social system (such as the CDN), and develop an understanding of their limitations and the extent to which the different relations are compatible. He cautions that this is far from an argument for eclecticism which he says uses abstractions without appreciating their limitations and incompatibilities²¹.

Critical realists argue that a useful way of understanding a complex object is to break it down into its constituent parts (Sayer, 1984; Sayer, 2000). This could be done either by abstraction or literally by taking it to bits. To understand the dynamism and composition of the CDN, for example, Sayer seems to suggest that one has to distinguish the different relations that exist among network members, networked institutions, and the connections and interactions between people and resources; and the external (or contingent) relations and internal (or necessary) relations (see sections 5.4 and 9.3). He explains that external relations exist where two objects can exist independent of the other. On the other hand internal relation may best be explained by means of Sayer's example, "The relation between a master and a slave is internal or necessary, in that what the object is dependent on is its relation to the other; a person cannot be a slave without a master and *vice versa*" (Sayer, 1984:82). The understanding of external and internal relations in the CDN is important in the investigation of the various relations that exist to foster change (networking processes, professional development, and institutionalization). They are also important to clarify different concepts of power relationships within the network (*ibid*) (see chapter 9).

²¹ Abstraction as used here relates to the 'relational-concept' as opposed to the 'thing concept' (cited in Emirbayer, 1997).

Critical theorists argue that many actions (such as respect and contempt) which are often viewed as capable of existing in isolation are in fact embedded in internal relations (*ibid*). They each presuppose reciprocal relations between people and sets of rules in a given context regarding acceptable behaviour. In the absence of their particular contexts they do not count as actions of these sorts; to say that a practice is concept-dependent is to acknowledge that it is internally related "... to particular concepts" (*ibid*: 83)(see Chapter 9).

3.3.4 Causation and causal analysis

According to Sayer (2000), one of the most distinctive features of realism is its analysis of causation, which rejects the standard Humean 'successionist' view in that it involves regularities among sequences of events. He argues that what causes something to happen has nothing to do with the number of times we have observed it happening but that explanation depends on identifying causal mechanisms, how they work and discovering the condition under which they have been activated (see sections 5.4 and 9.3). In his book *Method in science* Sayer (1984) argues that causation can be explained by means of realist questions as he writes "... to ask for the cause of something is to ask what 'makes it happen', what 'produces', 'generates' 'creates' or 'determines' it, or more weakly, what 'enables or 'leads to' it ... " (*ibid*: 95). The foregoing statement provides a simple but important starting point for discussing the different means by which change takes place from a critical realist ontological standpoint. Archer (1982) uses the notion of morphogenesis²² as means of probing change in a social system. In the light of this study, the change processes examined focus on:

- the professional growth of the course developers;
- the acceptability of environmental education as part of the institutional course framework in partner institutions and;

²² Morphogenesis refers to the processes which tend to elaborate or change a system's given form, structure or state. This is distinguished from Morphostatis which refers to those processes in complex system-environment exchanges that tend to preserve or maintain a system form, organisation or state (Archer, 1982).

- and the contribution of this research towards strengthened capacity in environmental education course development processes through networking in the context of the SADC Regional Environmental Education Programme (see chapters 7, 8, and 9).

Taking the notion of causal mechanism to a higher level, the realist view of causality involves examining the ‘*causal powers*’ or ‘*liabilities*’ of objects or, in more general forms, their way of acting or ‘*mechanism*’. Sayer (1984) notes that a causal claim is not about a relationship between separate things or events but about what an object is like and what it can do and only derivatively what it *will* do in any particular situation i.e. “... the nature or constitution of an object and its causal powers are internally related ... If the nature of an object changes then its causal powers will change too ...” (*ibid*: 96). This statement indicates that the relationship between causal powers or mechanisms and their effects is not fixed, but contingent i.e. causal powers exist independently of their effects, unless they derive from social structures whose reproduction depends on particular effects resulting (*ibid*). By making the distinction between the real and the actual (see section 3.3.1), Sayer (2000) provides ground for realist interpretation by means of the concept of casual powers (see sections 5.4 and 9.3).

Of importance to networking, professional development and institutionalization of environmental education courses is Sayer’s (1984:99) explanation that “... processes of change usually involve several causal mechanisms which may be only contingently related to one another.” Besides identifying the immediate causes of events, explanations must include references to the necessary conditions for the existence of mechanisms (see Chapters 7, 8 and 9). He notes that actions presuppose conditions such as material resources and social structure, including the conventions, rules and systems of meaning in terms of which reasons are formulated. He argues that social research needs to take into account structural conditions and their historically specific and hence transformable character, if it has to penetrate beyond the limited horizon of common sense (*ibid*: 102). He observes that when reflecting on changes and explaining them, it is common to think that what happened was always the only thing that could have happened. This, he claims suppresses acknowledgements of the fact that at any instant, the future is open, and things

could have happened differently. Sayer (*ibid*) notes that there is more to the world than patterns of events and that the world has ontological depth. He argues that events arise from the workings of mechanisms which derive from the structures of objects, and they take place within their geo-historical contexts. This contrasts with approaches which treat the world as if it were no more than patterns of events, to be registered by recording punctiform data regarding ‘variables’ and looking for regularities among them (*ibid*). This has implications in data analysis as demonstrated in this study (see Chapters 7, 8 and 9).

3.3.5 Open and closed systems

In traditional natural scientific experiments, research is conducted in laboratories where conditions can be controlled. In this way, causal mechanisms can easily be abstracted (Sayer, 1984; Danermark et al., 2002). Danermark et al. (2002) note that nature as an open system makes it impossible to make predictions as is done in natural science. They, however, contend that by analysing causal mechanisms, it is possible to research the potential consequences of mechanisms working in different settings. In other words, realist philosophy helps to identify the conditions which must hold if regularities are to occur. Sayer (1984) notes that one of the advantages of researching in open social systems is that the same material conditions or statements can be interpreted in different ways by different researchers. This provides the researchers with opportunities to learn new ways of responding effectively to situations. It also allows them to recognise that social explanations may always be fallible.

3.3.6 Mediation between structure and agency

Central to realist social theory is the statement that “... the causal power of social forms is mediated through social agency” (Bhaskar, cited in Archer, 2003:2). Archer (2003) observes that the above statement, while specifying that the causal power of social forms is mediated through social agency, does not tell us anything about the mediatory process involved. She argues that the word ‘through’ in the statement denotes conditioning, and that since conditioning is not determinism, the process necessarily involves the interplay between two different kinds of causal powers – those pertaining to structures and those

belonging to the agents. She explains that an adequate conceptualization of conditioning must deal with the interplay between these two powers which involves a specification of how:

- structural and cultural powers impinge upon agents, and
- agents use their own personal powers to act so rather than otherwise, in such situations (Archer, 2003).

Put in the light of this study, Archer's notion will help to tease out how structure (network, institutions) impinges upon the agents to enable or constrain professional development, networking process and institutionalisation of environmental education courses. It also provides space for understanding how agents in the course development network use their own personal powers to participate in the network and make decisions that guide their actions related to course development and related institutionalisation processes.

Since structure and agency are said to be irreducible to their individual elements (see section 3.3.2), Archer (2003: 203) argues that their irreducibility to one another entails examining the interplay between them. Explanations of actions of individuals therefore requires not a micro (reductionist) regress to the inner constitution (though this may be relevant too) but a 'macro regress' to the social structures in which they are located (see Chapters 7, 8, and 9).

Archer (2003) further explains that the two different causal powers of structural objectivity and agential subjectivity are both entailed by the concept of 'constraints' and 'enablements'. She notes that constraints and enablements do not possess an intrinsic capacity for constraining or enabling in abstraction. Archer notes that "... for anything to exert the power of a constraint or an enablement, it has to stand in a relationship such that it obstructs or aids the achievement of some specific agential enterprise²³..." (Archer 2003: 5). She notes that the account of how structures influence agents is entirely dependent upon the proposition that our human powers of reflexivity have causal efficacy

²³ The generic name given to agential enterprises is project (Archer 2003).

– towards ourselves, our society and the relations between them. She observes that reflexivity, which is held to be one of the most important of personal emergent properties, is often denied to exert causal powers. As a result of this, reflexivity becomes considerably less interesting or of no importance at all in accounting for any outcome. Archer (*ibid*) advocates for personal reflexivity as a means of mediating between structure and agency. She argues that there should be acceptance of the need for identifying a mediatory process that links ‘structure’ and ‘agency’. This, she calls the internal or reflexive deliberation.

3.3.7 Internal deliberation

In order to examine the role of reflexive deliberation (internal deliberation) in mediating between structure and agency, Archer (2003) argues that one has to first understand the philosophy of the mind. She draws on Descartes’ work of how we obtain knowledge of our own. Descartes (cited in Archer, 2003) refers to ideas of ‘seeing with the mind’s eye’ or ‘looking inwards’ to obtain transparent self-knowledge from a privileged standpoint. He calls this ‘introspection’. But Archer (2003:21) argues that “ ... the idea of ‘looking inwards’ implies that we have a special sense, or even a sense organ, enabling us to inspect our conscious states, in a way which is modeled upon visual observation ...”. She notes that behaviourism is impotent to deal with covert mental acts as they have no behavioural manifestation. She, however, explains that there are many mental states and activities that are inaccessible to ‘extrospection’- about which a person could normally claim knowledge about thinking, imagining, believing and feeling - but where introspection can still be invoked. Of importance to this study is the fact that although the CDN was set up with tangible outputs (i.e. course materials and institutionalized programmes running) in mind, it would seem unwise to restrict the measure of success of the network to behavioural manifestations such as knowledge, skills and products as some members may have acquired other forms of knowledge and skills which cannot manifest in behaviour or product. This is also congruent with the notion of knowledge as a ‘process’ or ‘product’ discussed earlier (see section 3.2).

Archer further explains that the main activity in the domain of mental privacy is reflexive deliberation. Charles (cited in Archer, 2003) postulates that through reflexive deliberation, people use their powers as strong evaluators. Perhaps a good example of reflexive deliberation is the processes we go through when say we want to buy a pair of shoes. Before the action of buying takes place, we reflexively deliberate in our mind. We ask ourselves such questions as 'will this pair of shoes last?', 'Is it worthy of the price?' We also relate to society, we ask ourselves whether or not the particular shoe is in fashion. Who else has it? And so on. It is only when we satisfy ourselves with the answers to these questions that the action of buying takes place.

This example demonstrates how we start to define our positions from internal deliberation to external reality (Charles as cited in Archer, 2003). Reflexive deliberation in the context of mental privacy is not easily accessible to outside inspection, because internal deliberations have no necessary behavioural manifestations. Therefore the agent is a crucial source of self-knowledge. Archer further postulates that the private life of the mind is not a passive matter of the 'looking inwards' but an active process in which we continuously *converse* with ourselves in order to define what we believe to desire and intend to do. It is important to acknowledge the fact that the end of internal deliberations may well lead to our decisions and actions being manifested in society. I will revisit the idea of internal deliberation as I discuss the participatory framework as used in the environmental education course development process in the SADC REEP by drawing on the concept of Community of Practice in section 3.5.

In the section that follows I discuss Actor Network Theory (ANT) and how it complements the critical realist perspectives explained above. Critical realists suggest abstraction of causal mechanism as the means by which we can investigate what causes events to happen (see section 3.3.4). From my reading of critical realism, however, there is little guidance on the modes of abstraction one may use, apart from generating and using a number of realist questions (Danermark et al. 2002). In attempting to abstract the causal mechanisms associated with networking processes, professional development and institutionalisation, I have found ANT's 'moments of translation' to be useful in

understanding and illuminating aspects of such causal mechanisms. I use this framework to examine and interpret two European networks – Environment and School Initiatives (ENSI) and Sustainability Education in European Primary School Project (SEEPS) (see Chapter 5). The two European networks are examined to draw lessons and insights to inform the investigation of the CDN. I also use the moments of translation framework to interpret and discuss aspects of causal mechanisms in the CDN (see section 9.3).

3.4 ACTOR NETWORK THEORY (ANT)

ANT emerged out of work in the sociology of science and technology. Bruno Latour is one of the pioneers of ANT. He spent years studying how scientific knowledge is generated. By observing and following scientists at work, he concluded that scientific knowledge is generated through what he calls actor-networks (Latour, 1987). ANT has since developed and been refined with the work of others such as Michel Callon and John Law. The term ANT is differently referred to as Actor-Network (Somerville, 2002), Actor/Actant-Network Theory (Nhamo, 2005a), and Actor-Rhizome Theory (Smith, 2003). This study draws principally on Latour's original works in *Laboratory life: The social construction of scientific facts* (Latour & Woolgar, 1979); *Science in action: How to follow scientists and engineers through society* (Latour, 1987); *The pasteurisation of France* (Latour, 1993a); and *We have been never been modern* (Latour, 1993b).

ANT has since become a popular emerging genre of inquiry for interpretation and understanding of networks and social processes. It has been used by Gaskell and Hepburn (1998) to understand the construction of a new secondary school physics course in British Columbia. They argue that the stability and shape of the new course is constructed simultaneously with the creation of a network of human and non-human actors whose interests are translated in the course. Keeley and Scoones (2003) draw on ANT to understand environmental policy processes by means of selected case studies from Africa. Somerville (2002) considers the usefulness of ANT as a theoretical and methodological approach to analysing the development of a cable/on-line sociotechnical

ensemble in the United Kingdom and ANT has been used in the study of information systems (Tatnall & Gilding, 1999; Johnson, 2001), among others. In southern Africa, the context of this study, Nhamo (2005a) uses ANT to understand and investigate the emerging tensions, debates, and responses arising from the policy processes in the formulation and implementation of the South Africa's Plastic Bag Regulation. It has also been used to review the construction of the UNEP Education for Sustainable Development Innovation Course which is aimed at mainstreaming environment and sustainability in African universities (Lotz-Sisitka, Lupele & Ogbuigwe, 2006).

ANT seems to open up possibilities for analysis of social networks such as the CDN, ENSI and SEEPS in that it does not only focus, as is the tradition with most social network analysis, on the social relations of individual human actors. Rather ANT enables researchers to treat both natural and social worlds as being constructed simultaneously as heterogeneous networks of human and non-human (actors and actants respectively) (Gaskell & Hepburn, 1998; Latour, 1999; Davies, 2002). This study draws on ANT to provide a mode of abstracting relations in the CDN to identify causal mechanisms. ANT is also used to trace the origins of the three networks referred to in this study. It allows the interpretation of how a network came into being and how it has been functioning. For example, Davies (2002:192) notes that ANT provides a means of looking at power relations and perceptions (casual powers) of influence between actors (human and non-human) in a network. Fadeeva (2005b) notes that in ANT, the power to act upon institutional rules is not an individual characteristic of an actor but a result of an actor's association. She further elaborates that the power of an actor or group of actors is vested in a network of humans and non-humans. However, her analysis does not seem to probe causality or power-relations.

Two aspects of ANT are very important to this study. First, ANT seems to clarify the notion of 'actor' to embrace both human and non-human actors²⁴. Second, ANT extends analysis of social networks (causal analysis) beyond social human agency to account for non-human actors, which include all elements of the structure as well as conditions

²⁴ Latour uses the term actant in place of the non human actors. I have used the terms actors and actants to represent (human and non-human actors) where appropriate.

necessary for mechanisms to exist. This is useful when looking at the course development and networking processes in the CDN, a network formed against a background of poverty, colonial and *apartheid* legacies (see section 2.2.2). ANT provides insights into not only the course development and networking processes, but also into the relations between actors (both human and non-human) and how these have shaped and been shaped by the CDN (Gaskell & Hepburn, 1998; Meksawan, 1998; Latour, 1999; Davies, 2002). In this study actors may include, all the network members and their colleagues in their institutions. From the SADC REEP dimension, actors include my colleagues who play different roles in the network, representatives of donor organisations and environmental education practitioners in the region. On the other hand, actants may be abstracted as emails, an internet based 'chat room', debates, partner support funds, donor, organisation's policies and approaches, case studies, courses developed by members and other resources made available through the process of networking. Following Smith's (2003:44) argument, ANT enabled this study to probe "... how the mobilisation of materials, and the practices of people, stitch-together the network ..." by considering both human and non-human aspects of the CDN. Bijker and Law (cited in Lee & Steve, 1994) note that the actor network approach avoids making commonsense assumptions that people, entrepreneurs or machines are naturally occurring categories, but that it demonstrates that the elements (including the humans) bound together in a network are constituted and shaped by their involvement with each other in a liberal democratic atmosphere.

3.4.1 The political economy of ANT

By opening a consideration of both human and non-human actors and allowing for an analysis of the democratic dynamic unfolding and interactions of elements in a network, ANT broadens concepts of democracy to provide equal opportunities of representations for all actors (including non humans) within a network (Lee & Steve, 1994). In other words ANT extends liberal democracy theory beyond the focus on humans, universalism, rationalism and individualism. Mouffe (1993) notes that liberal democracy calls for the constitution of collective identities around clearly differentiated positions and the

possibility of choosing between real alternatives. She argues that democracy is not only threatened when there is no consensus and allegiance to the values it embodies, but also when its agonistic dynamic is hindered by an apparent excess of consensus, which usually silences apathy or the 'voice' of non-human actors (e.g. the environment or resource constraints). By accounting for binary oppositions, ANT provides the much needed representation of both the actors and actants in a democratic social grouping. It broadens representation to all actors and actants, taking liberal democracy to its limits (Lee & Steve, 1994), providing a broader vantage point on the constitution of democratic practice and action.

ANT answers some of Mouffe's concerns on the failures of liberal democracy to account for the contextual realities of the world ravaged by ethnic, religious and nationalist conflicts (Mouffe, 1993). This is very important to the study of the CDN which brings people from diverse racial, cultural, political and historical perspectives – marred with a history of oppression and inequality through *apartheid*, colonialism and post-colonial oppressive regimes (see section 2.2) and an environment which is being degraded as a result of global capitalist demand for resource exploitation. ANT allows us to probe causation by starting from an assumption that all actors in a network are equal, hence providing us with an opportunity to trace inequalities within the network through what Latour calls a translation model (Lee & Steve, 1994) as opposed to the diffusion model.

3.4.2 Translation and diffusion models

The effectiveness and stability of networks such as the CDN depend on how actors and actants are enrolled and mobilized (Latour, 1987). According to Gaskell and Hepburn (1998), the stability of a network is an on going accomplishment as a result of actors' constant participate in it. They observe that as actors' participate in the network, it shapes and transforms them. It is this sense of mutual constitution of the network and the actors that Latour & Woolgar (1979) coined as actor-network.

Through the actor-network, Latour (1987) explains how claims (about knowledge) and artifacts (what he calls tokens) spread in time and space. Traditionally ideas or artifacts

are assumed to diffuse through society (Latour, 1987; Gaskell & Hepburn, 1998). Thus, once discovered or invented, a token moves through society unchanged and along the way it encounters either people who use it and pass it on to other people or those who resist it and do not use it at all (Gaskell & Hepburn, 1998). Gaskell and Hepburn explain that the path of the token is a product of the power of the originator of the idea and the frictions and resistances that it encounters. In contrast to the diffusion model, Latour offers a model of translation as explained by Gaskell and Hepburn (1998:66):

In this model [translation] model the token is usually not passed unchanged from hand to hand. There is no initial 'inertia.' The token is either ignored or taken up by people who see their interests translated within it. In the process of shaping it to their interests, these people usually modify the token. The path is a product of the number and strength of the links that are established between it and a diverse group of other actors. It is not a product of an initial quality but subsequent actions of a multitude of others. In the model of translation, not only the token is continuously transformed as links with the other actors are established but so are the other actors. As they take up and use the token, their actions and patterns of practice are changed as they see new possibilities with the token²⁵. The network is defined by the token but the token is also simultaneously defined by the network. The network and token co-evolve. As the token/network system stabilises the token is seen to be an unproblematic artifact ...

Latour (1987) notes that the model of translation is made up of four 'moments of translation'. These are problematisation, interessement, enrolment and mobilization. These four elements (also known as a sociology of translation) form the core of ANT (Davies, 2002; Gaskell & Hepburn, 1998). In this study, I drew on the moments of translation framework for analysis of networking and course development processes as presented in chapters 5 and 6. I found the moments of translation to be a useful framework to analyse the CDN as it exists in diverse ecosystems, cultures, languages, education systems, system of government where it would be difficult to adopt a single

²⁵ Nhamo (2005a) in the context of his doctoral study *Environmental policy processes surrounding South Africa's plastic bags regulations: Tensions, debates and responses in waste product regulation* suggests that the regulations can be described as a 'quasi-object' or 'token' which is simultaneously real, discursive and socially constructed. He explains that such quasi-objects circulate and transform, while in circulation. In the process they form relationships between members of the given groups. He argues that policy frameworks can serve as actants that affect relational dynamics and the practices of actors in a particular field, who in turn, affect and change the nature of the policy frameworks.

approach (as a token course) for environmental education that would be suitable for all partner institutions (SADC REEP, 2002). Further, the framework was used to examine insights into patterns of power, analysis of partnerships and to examine resources that enable networking and course development processes, arguments and flows of knowledge (Davies, 2002). According to Callon (1986), the four moments of translation constitute the different phases of a general process called translation, during which the identity of actors, the possibility of interaction and the margins of manoeuvre are negotiated and delimited. I now provide a detailed description of the four moments of translation as used in the analysis of the SEEPS and ENSI networks (Chapter 5) and the CDN (Chapter 6) below:

- **Problematization** – Key actors define or frame a problem (Davies, 2002:196). Following this, social and natural actors whose interests are bound to a particular formulation of a problem are identified and defined. The process often requires researchers to trace the historical and contextual factors that lead to the problem/subject under investigation (Gaskell & Hepburn, 1998).
- **Interessement** - It is a period of consultation and promotion but it is also characterized by opportunities for resistance (Gaskell & Hepburn, 1998; Davies, 2002). Entrepreneurs negotiate partnership structures, there is a lot of information exchange and marketing of the project (Gaskell & Hepburn, 1998; Keeley & Scoones, 2003). The success of the moment of interessement marks the beginning of the first phase of complete enrolment.
- **Enrolments** – Micro-actors (individuals) form alliances, enroll other actors, use actants to mobilize such alliances to secure their interests, and construct networks (Callon, 1999). The key actors or actants define and attribute roles to actors (individuals) who accept to be part of the emerging network (Gaskell & Hepburn, 1998:66). Actor networks start to act as if they are independent.
- **Mobilisation** – This is a process by which particular actors come to be designated as being spokespeople or representatives for the larger population that cannot directly participate (Gaskell & Hepburn, 1988:66). Tatnall *et al.* (cited in Nhamo, 2003) notes that when actor networks are formed, they are often unreliable and unstable thus

requiring continuous mobilisation. The core feature of the moment of mobilisation is to try and mobilise the network by interesting and motivating others actors to be part of it (Callon, 1986; Latour, 1987).

While the moments of translation was used to analyse the evolution of the three networks, particularly the CDN, the analysis of actual learning processes (which I have referred to as professional development in this study) is informed Lave and Wenger's (1991) work on Community of Practice. In the next section I discuss the notion of Community of Practice as it relates to this study.

3.5 COMMUNITY OF PRACTICE

Wenger, McDermott and Snyder (cited in Fullan, 2003) describe communities of practice as groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area. They further observe that a COP is a unique combination of three fundamental elements: a domain of *knowledge*, which defines a set of issues, a *community* of people who care about this domain and the shared *practice* that they are developing to be effective in the domain. In the light of the above I found it appropriate to describe the CDN as Community of Practice as its members shared a concern about environmental education as a strategic activity for sustainable development, poverty alleviation and social justice in southern Africa. They shared a passion for strengthening improved professional competence of educators to address these issues through course development in environmental education by deepening their knowledge and expertise (professional development) in environmental education course development processes.

From my teaching experience both in primary and high school settings, and having worked in curriculum development and learning materials development (see section 1.3), I have previously drawn on understandings of knowledge and learning generated by symbolic interactionists and cognitive psychologists (Mead, 1934; Vygotsky, 1978; Watson, 1998). Increasingly a number of researchers (Lave, 1988; Lave & Wenger, 1991; Watson, 1998; Graven, 2002; Folgheraiter, 2004) have found psychological cognitivist

paradigms limited for understanding learning in a subjective and socially constructed world. It is, however, important to recognise the fact that even Vygotsky's work is to some extent located in cognitive development in social context (Vygotsky, 1978). Sayer (2000:32) notes that while realists pay attention to social factors associated with causal effects on agency, they tend to ignore the social and situated character of knowledge. He writes: "... realists have generally paid lip service to the social and situated character of knowledge construction and have underestimated the influence of various forms of idealism in contemporary social theory".

It is against this background that I found Lave and Wenger's notion of Community of Practice to be an appropriate analytical framework for exploring knowledge generation and change that is deeply embedded in human interactions and relations (Fullan, 2003). Their articulation of the social situatedness of knowledge and learning provides a useful lens for probing professional development (i.e. learning and growth) in the networking process (Lave & Wenger, 1991; Fullan, 2003). The concept of Communities of Practice seems to provide a means for exploring the meaning of learning (including the cognitive dimensions). This provides insight into professional development and possibilities for strengthening of environmental education in southern Africa (see Chapters 7 and 9).

Although cognitive perspectives are important in understanding learning, my focus in this study (in particular my working with the notion of COP) is on exploring professional development in the context of social and situated perspectives of knowledge and learning in what Sayer calls the 'context of discovery' (in which ideas are developed) (Sayer, 2000:51). The study draws on Lave and Wenger's (1991) work on 'situated learning' - of how novice practitioners become full members of a COP. Their work extends the understanding of the context in which mechanisms that enable or constrain networking, professional development and institutionalisation of environmental education are initiated. The COP perspective also provides insight into how members of the network come to accept each other as fellow professionals or not. The concept of Community of Practice has become popular among researchers (Graven, 2002; Fullan, 2003; Altrichter, 2005) as a way organising (as well as probing) learning and professional development.

Altrichter (2005) has drawn on Lave and Wenger's (1991) theory of 'situated learning' to conceptualise collective learning in a professional community. He uses the concept of situated learning to probe the idea of 'professional learning' in the practice of teacher research. Fullan (2003), in his book *Change with a vengeance*, provides a comprehensive analysis (by means of Lave and Wenger's concept of situated learning) of the complexity of large-scale education reform in England.

Lave and Wenger (1991) use the notion of legitimate peripheral participation (which is their advanced form of situated learning) to explore learning and how apprentices become full members of a Community of Practice. By means of case studies drawn from ethnographic studies of Yucatec midwives, Vai and Gola tailors amongst others, they argue that learning takes place through observation and participation. Their use of the term 'community' does not imply some primordial culture-sharing entity but implies participation in an activity system about and in which participants share understandings concerning what they are doing and what that means in their lives and for their communities. They observe that participation in the cultural practice in which any knowledge exists is an epistemological principle of learning. They argue that rather than learning by replicating the performances of others or by acquiring knowledge transmitted in instructions, learning occurs through centripetal participation in the learning curriculum of the ambient community (where such performances and transmissions may exist). Lave and Wenger observe that novices/apprentices in a learning process start as legitimate peripheral participants by observing older or more experienced people (or experts as used in development discourse) at work. The major roles of young people at this stage are limited to running errands and helping with small jobs. By observing what the elders (or more experienced) are doing, they eventually become full participants. For example; among the fishing communities of Luapula Province of Zambia, young people observe elderly members of the community make nets and dugout canoes as legitimate peripheral participants. With time, they eventually start to play the role of errand boys who help the elders with tools and other materials required in the construction process. By observing and gradually participating in adults' practice, the young people become full participants who can make their own nets and dugout canoes.

For Lave and Wenger (1991) situated learning implies emphasis on comprehensive understanding involving the whole person rather than ‘receiving’ a body of factual knowledge about the world. This moves away from the notion where “situated” has connotations that people’s thought and actions were located in time and space, as realists such as Sayer seem to suggest by the statement “ ... knowledge has not merely a general anthropocentric character but bears more specific social markings such as those associated with the particular contexts in which it develops ...” (Sayer, 2000:51). Rather than looking for cognitive process and conceptual structures as Vygotsky and cognitive theorists such as Piaget and Bruner do, Lave and Wenger’s form of situated learning focus on identifying the kind of social engagements that provide the social context for learning to take place. They argue that learning is a process that takes place in a participation framework and not in the individual mind – i.e. it is, among other things, mediated by the differences of perspective among participants. This presents a more sociological framing of learning than most cognitive psychologists provide.

However this view of ‘a participation framework’ which ignores the cognitive learning process that takes place in an individual’s mind is contrary to the realist stratified ontology as explained by Sayer (2000) and Archer (2003). The reflexive deliberation alluded to earlier (see section 3.3.7), shows that learning involves cognitive processes (mental privacy) of an individual which include reflexive deliberation in and on a social context. Archer (2003) observes that through the internal conversation, each agent reflexively deliberates the social circumstances that they confront. She further argues that it is agential reflexivity that actively mediates between our structurally shaped circumstances (such as a COP) and what we deliberately make of them. She elaborates:

... We cannot account for any outcome unless we understand the agent’s project in relation to her social context. And we cannot understand her project without entering into her reflexive deliberations about her personal concerns in conjunction with the objective social context that she confronts (Archer, 2003:131).

It seems Lave and Wenger’s (1991) concept of situated learning proposes the sociological context of learning in a COP but fails to recognize cognitive and other aspects of

learning. Archer (2003) alerts us to the fact that it is what the agents seek to do that is responsible for the activation of the causal powers of constraint and enablement of a project (say learning in this case). She observes that in empirical work, such as is the case in a Community of Practice, (as discussed by Lave and Wenger) the effect of structure upon agency is represented as a two-stage process, which is held to work directly rather than requiring agential mediation. Therefore Lave and Wenger's notion of learning as a *process 'that takes place in a participation framework and not in the individual mind'* (my emphasis) seems to ignore the reflexivity of agents that is intrinsic to their concerns, projects and actual performance.

Archer (*ibid*) postulates that all ideas begin life as thoughts because someone has to have them, which retains their subject ontology, even if they are not publicly shared. She argues that it is our reflexive first-person perspective that enables us to function as social actors – i.e. actors need their reflexivity to know that the associated duties and expectations apply to them, rather than just being diffused as obligations. This implies that in a COP, the process of learning start through reflexive deliberation by the primary agents before they share with others. She observes that "... we deliberate about our circumstances in relation to ourselves and, in the light of these deliberation we determine our own personal courses of action in society" (Archer, 2003:167).

Archer (2003) distinguishes three types of internal reflexivity i.e. communicative reflexivity; autonomous reflexivity and meta-reflexivity. In communicative reflexivity, an individual initiates internal dialogues in the privacy of their own minds and later puts these across to public conversational confirmation and corroboration. Internal conversation of the autonomous reflexives is a lone exercise of a mental activity, which its practitioners recognise as being an internal dialogue with themselves and one they do not need and do not want to be supplemented by external exchanges with other people. Archer (2003:210) notes that "... unlike the 'communicative reflexives' they autonomous reflexives would not make constant resort to 'friends and family' in order to complete their internal deliberations." The third category of internal deliberation is the meta-reflexivity which Archer describes as the everyday normal being practice. It entails being

reflexive about one's own act of reflexivity. Much of the internal conversation consists in asking ourselves questions and answering them. For example "... in 'primary' reflexivity, we may ask ourselves what date is it today, and supply an answer." (Archer, 2003:255). Archer further argues that "... all acts of self-monitoring are acts of meta-reflexivity."

Drawing on Archer's (2003) discussion of reflexive deliberations it seems that in a participatory framework, discussions start in the individual's mind. A whole range of factors such as coalition, compromise and concession between actors come into play *in the participation framework* as a second level of deliberation. Of course, as already stated, it is not my intention in this study to go into details of the cognitive perspectives of learning processes, rather the focus of this study is to analyse professional development and institutionalisation by examining the relationships between learning and the social situations in the context of the CDN. I particularly found Lave and Wenger's (1991) work on situated learning appealing as it resonates with the relational underpinning of this study. It seems Lave and Wenger's situated learning takes as its focus the relationship between learning and the social situations in which it occurs. Rather than defining situated learning as the acquisition of propositional knowledge, Lave and Wenger appear to situate learning in certain forms of social co-participation. Rather than asking what kinds of cognitive processes and conceptual structures are involved, Lave and Wenger focus on the social engagements that provide a proper context for learning to take place.

The choice of Community of Practice in this study was also informed by my experience, which has involved tutoring and running professional workshops in environmental education. It also involves working with reflexive deliberations as a participatory framework for learning (see section 1.3). Reflexive deliberation is seen as a core aspect of learning processes among adult learners in the SADC REEP programmes. The SADC programme views deliberation as "... an intricate and skilled intellectual social process whereby, individually or collectively, we identify the questions to which we must respond, establish grounds for deciding answers, and then choose the available solutions ..." (Reid, cited in Lotz, 1999:7).

'Deliberation' has come to inform the way most environmental education courses are developed in southern Africa, particularly those supported by the SADC REEP. For example, in the *Rhodes University/SADC International Certificate Course in Environmental Education*, participants and tutors negotiate a course curriculum by means of an open-ended structure of the main themes (Lotz 1999). The process of internal conversation is triggered by the key themes of the open-ended course curriculum structure, which enables the participants to reflexively deliberate on the course in relation to the external world (their workplace) and informed by their own history. This is achieved through asking themselves a number of questions (in their mental privacy) about what they can draw from the course to improve their practice in their work context. At the second level of reflexive deliberation, each of the course participants shares his/her outcomes of internal conversation. Their individual ideas resulting from the internal deliberation are brought to the table for discussions where they negotiate, agree and form coalitions on what the curriculum should look like. In this example, it can be argued that reflexive deliberation at both the primary and corporate levels provides a social and cognitive basis for learning (professional development).

In probing professional development and institutionalisation, I draw on Lave and Wenger's (1991) analytical framework of Community of Practice as summarised from their book *Situated learning: Legitimate peripheral participation*. The main characteristics of Lave and Wenger's notion of Community of Practice used in probing professional development in this study are: access to the community of practice; organisation of practice; participation and meaning-making; structuring resources for learning in practice; generation of identity and motivation; and transformation of practice. As indicated above, this is complimented by Archers' work on reflexive deliberation and the internal conversation (see section 3.3.7).

3.5.1 Access to the Community of Practice

Lave and Wenger (1991) note that for one to become a full member of a Community of Practice, one requires access to a wide range of ongoing activities, old timers, and other members of the community. It also entails access to language, information, resources, and

opportunities for participation. They postulate that the issue of access is central to membership in communities of practice. They further note that artifacts employed in ongoing practice, the technology of practice, provide a good arena in which to discuss the problem of access to understanding. They argue that:

... Becoming a full participant certainly includes engaging with the technologies of everyday practice, as well as participating in the social relations, production processes, and other activities of Community of Practice. Participation involving technology is especially significant because the artifacts used within a cultural practice carry a substantial portion of that practice's heritage (Lave & Wenger, 1991:109).

However, they caution that the significance of artifacts in the full complexity of their relations with the practice can be more or less *transparent* to the learner. They observe that transparency in its simplest form may just imply that the inner workings of an artifact are available for the learner's inspection: the black box can be opened (see section 3.2 on Latour and the black box); it can become a 'glass box'.

Understanding of the technology of practice is more than learning to use tools; it is a way to connect with the history of the practice and to participate more directly in the culture of life. Lave and Wenger observe that knowledge within a Community of Practice and ways of perceiving and manipulating objects characteristic of Community of Practice are encoded in artifacts in ways that can be more or less revealing.

... the transparency of any technology always exists with respect to some purpose and its intricately tied to the cultural practice and social organisation within which the technology is meant to function. It cannot be viewed as a feature of an artifact in itself but as a process that involves specific forms of participation, in which the technology fulfils a mediating function ... In focusing on the epistemological role of artifacts in the context of social organisation of knowledge, this notion of transparency constitutes, as it were, the cultural organisation of access. As such it does not apply to technology only, but to all forms of access to practice (Lave & Wenger, 1991:102).

They observe that activities are dialectically related i.e. they are not separable. They therefore explain that the term transparency when used in connection with technology refers to the way in which using artifacts and understanding their significance interact to become one learning process.

3.5.2 Structuring resources for learning in practice

One of the first things people think of when apprenticeship is mentioned is the master-apprenticeship relation. But in practice the roles of masters are surprisingly variable across time and place. A specific master-apprentice relation is not even ubiquitously characteristic of apprenticeship learning ... It should be clear that, in shaping the relation of masters to apprentices, the issue of conferring legitimacy is more important than the issue of providing teaching (Lave & Wenger, 1991:92).

From the above quotation, learning as part of the social practice, focuses on the structure of social practice i.e. the existing relations among learners, available emergent power and learning resources among others. Resources that enable learning are said to come from a variety of sources rather than pedagogy alone. Lave and Wenger argue that there is little observable teaching in a Community of Practice (or community of practitioners) but the more basic phenomenon is learning.

The practice of community creates the potential 'curriculum' in the broader sense – that which may be learned by newcomers with legitimate peripheral access. Learning activity appears to have a characteristic pattern. There are strong goals for learning because learners, as peripheral participants, can develop a view of what the whole enterprise is about, and what there is to be learned. Learning itself is an improvised practice: A learning curriculum [distinguished from a teaching curriculum]²⁶ unfolds opportunities for engagement in practice ... opportunities for learning are, more often than not, given structure by work practices instead of by strongly asymmetrical master – apprentice relations (Lave & Wenger, 1991: 92-93).

They argue that the effectiveness of the circulation of information among peers suggests that engaging in practice, rather than being its object is a condition for the effectiveness of learning (*ibid*). They further postulate that to take a decentered view of master-

²⁶ Lave and Wenger view a learning curriculum as a curriculum that cannot be considered in isolation, manipulated in arbitrary didactic terms, or analyzed apart from the social relations that shape legitimate peripheral participation. A learning curriculum is thus characteristic of a community and is said to be situated (Lave & Wenger, 1991). On the other hand, the teaching curriculum is said to be constructed for the instruction of new learners. The structured resources that come with the curriculum is said to limit learning, what is to be learned, mediated through an instructor (teacher) and an external view of what learning is about.

apprentice relations leads to an understanding that mastery resides not in the master (as an individual) but in the organisation of the Community of Practice – of which the master is part (Lave & Wenger, 1991).

3.5.3 Generation of identity and motivation

Legitimate peripheral participation is, in Lave and Wenger's view, the initial form of membership characteristic of a Community of Practice. They note that learners joining a Community of Practice know that there is a field for mature practice of what they are learning to do. To be able to participate in a legitimately peripheral way entails that newcomers have broad access to arenas of mature practice. They observe that an apprentice's contributions to ongoing activity gain value in practice, a value which increases as the apprentice becomes more adept. They also point out that as opportunities to understand how well or poorly one's efforts contribute to and are evident in practice, legitimate participation of a peripheral kind provides an immediate ground for self-evaluation. They argue that although knowledge and skill are important activities, a deeper sense of the value of participation in the community of practitioners lies in becoming part of the community. They postulate that:

Moving toward full participation in practice involves not just a greater commitment of time, intensified effort, more and broader responsibilities within the community, and more difficult and risky tasks, but, more significantly, an increasing sense of identity as a master practitioner (Lave & Wenger 1991: 111).

3.5.4 Organisation of practice: participation and meaning making

The social relations of apprentices within a Community of Practice change through their direct involvement in activities. In the process, the learners' understanding and knowledgeable skills develop. An extended period of legitimate peripherality provides learners with opportunities to make the culture of practice theirs. Lave and Wenger explain:

Newcomers' legitimate peripherality provides them more than an 'observational' lookout post: It crucially involves *participation* as a way of learning – of both absorbing and being absorbed in – the 'culture of the practice'. An extended period of legitimate peripherality provides learners with opportunities to make the culture of practice theirs.

From a broadly peripheral perspective, apprentices gradually assemble a general idea of what constitutes the practice of the community (Lave & Wenger, 1991: 94-100).

They argue that rather than learning by replicating the performances of others or by acquiring knowledge transmitted in instruction, learning occurs through centripetal participation in the learning curriculum of the ambient community. They further contend that the place of knowledge is within a Community of Practice. Thus, questions of learning must be addressed within the developmental cycles of that community (*ibid*).

3.5.5 The transformation of practice

In considering learning as part of social practice, Lave and Wenger (1991) focus on the structure of social aspects rather than privileging the structure of pedagogy as the source of learning. They observe that granting legitimate participation to newcomers with their own viewpoints introduces into any Community of Practice all the tensions of the community – displacement contradiction.

These may be muted, though not extinguished, by the differences of power between old-timers and newcomers. As a way in which the related conflicts are played out in practice, legitimate peripheral participation is far more than just a process of learning on the part of newcomers. It is reciprocal relation between persons and practice. This means that the move of learners toward full participation in a Community of Practice does not take place in a static context. The practice itself is in motion. Since activity and the participation of individuals involved in it, their knowledge, and their perspectives are mutually constitutive, change is a fundamental property of communities of practice and their activities (Lave & Wenger, 1991:117).

They postulate that legitimate peripherality is important for developing ‘constructively naïve’ perspectives or questions and that from this point of view, inexperience is an asset to be exploited. Inexperience, however, is only said to be useful in the context of participation, when supported by experienced practitioners who understand its limitations and value its role. Lave et al. (1991b) note that insofar as this continual interaction of new perspectives is sanctioned, everyone’s participation is peripheral in some respect i.e. everyone can to some degree be considered a ‘newcomer’ to the future of a changing community.

3.6 CONCLUSION

This chapter has examined and discussed the relational philosophy underpinning three theoretical aspects of the study. The three are: realist ontology/philosophy, social network analysis through ANT and educational/learning interests through COP. As much as there are inherent differences among the three perspectives, this study draws on their strengths and common relations to provide a simple framework with which to analyse complexity (Somekh & Pearson, 2002) surrounding the CDN. First, all three analytical tools seem to suggest that knowledge construction is a process that involves many actors (both humans and non-humans), acting in context and social history. This is beyond the view of social construction of reality which tends to ignore material dimensions and their close relations with history and context (Latour, 1987). Sayer (1984) notes that despite the fact that some objects are 'socially defined' we should not think that they are also 'socially produced'. The ancient, socially accepted perception that earth was flat did not socially produce it as such. Second, the three analytical perspectives allow the opening up of the black box (Latour, 1987; Latour, 1993b) in order to expose the constraining and enabling causal mechanisms in the network under study.

Further, ANT and COP provide more lenses for analysis purposes within the overarching framework of critical realism. The three are bound by their relational nature and complement each other at philosophical and empirical levels. Thus the combination of the three perspectives is on the basis of their compatibility. Critical realism is compatible with a wide range of research methods, of course depending on the nature of the object of the study (Sayer, 2000). As already mentioned, this study uses the amalgam of the three theoretical lenses to probe networking, professional development and institutionalisation in the context of the SADC Course Development Network. Details of how the three play out in this research are explained in the next chapter.

CHAPTER 4

RESEARCH PROCESS: METHODS AND DATA ANALYSIS

4.1 INTRODUCTION

This chapter introduces the research design by focusing on the philosophical assumptions of the study, the analytical frameworks used to probe aspects of the study. The chapter also illuminates the procedure I followed in data generation, data analysis and writing. I explain the research process by drawing on realist ontology knowledge claims (see Chapter 3). The chapter also examines the strategies guiding data analysis and the methods I used. Moments of translations from Actor Network Theory and aspects of Community of Practice were drawn on as analytical frameworks that probed networking processes and professional development respectively. The chapter structure draws on Creswell's (2003:3) questions central to research design namely:

- What knowledge claims are being made by the researcher (including theoretical perspective?);
- What strategies of inquiry will inform the procedures?; and
- What methods of data collection and analysis will be used?

4.2 REALIST ORIENTATION TO METHODOLOGY

Having discussed the theoretical orientation of this study in the previous chapter (see Chapter 3), I now discuss the research process as informed by realist ontology. The research process was designed to probe the critical realist claims about reality, i.e. that reality also exists outside human consciousness (Sayer, 1984; Sayer, 2000; Archer, 2003). In most studies the empirical (what we can experience) is associated with reality (Sayer, 2000). This is based on the assumption that the world happens to correspond with the range of our senses and to be identical to what we experience. The stratified ontology of critical realism views the world not only in terms of empirical and actual (as it relates

to human experience) but includes the real (see section 3.3.1). Bhaskar (1997) argues that mechanisms, events and experiences constitute three overlapping domains of reality, i.e. the domain of the *real*, the *actual* and the *empirical*. This relationship is presented in Table 4.1 below.

Table 4.1 Mechanisms, events and experiences

	Domain of Real	Domain of Actual	Domain of Empirical
<i>Mechanisms</i>	√		
<i>Events</i>	√	√	
<i>Experiences</i>	√	√	√

Source: (Adapted from Bhaskar, 1997).

The other aspect informing the methodology of this study is the idea of closed and open systems (see section 3.3.5). Social research is said to take place in open social systems, as opposed to traditional natural science which is carried out in constructed laboratories where conditions can be manipulated or controlled. The idea of an open system has an effect on the choice of methods of data generation and analysis. Critical realists argue that social systems (such as the focus of this study) are always open, complex and messy. Thus we cannot isolate out the components of a social system and examine them under controlled conditions (Sayer, 2000; Danermark et al., 2002). Therefore, this study, like others that take a critical realist orientation, relies on abstraction and careful conceptualisation in order to abstract the various components or influences in an open social system.

Through abstraction and conceptualisation, the study seeks to understand the relational connectedness among networking, professional development and institutionalisation as opposed to finding regularities of what the phenomena are. Realists believe that explanation of the social world requires an attentiveness to emergent powers arising from certain relationships and to the ways in which the operation of causal mechanisms depend on the constraining and enabling effects of contexts (Sayer, 2000; Archer, 2003).

Therefore the study recognises the crucial role that context plays in understanding and probing networking, professional development and institutionalisation of environmental education courses in CDN partner institutions (see section 1.4.3.4). Further the methodology seeks to probe relations of connection and situates participants' practice and experiences as exemplified in data within the wider context of CDN operations (see chapter 2). In the sections that follow I explain the research process in terms of data generation, organisation, analysis and interpretation, and ethical considerations.

4.3 DATA GENERATION

Data generation for this study started in 2003 (and was done over a period of two years) during the life of the CDN as a funded project. Data was generated from multiple sources through a variety of methods and techniques. These were mainly;

- Documentary reviews,
- Focus group discussions,
- Interviews, and
- Field notes.

Prior to field work and start of this study, I planned my approach to the different types of data I was to going to record, their sources and purpose. This was presented in my research proposal (Creswell, 2003). Appendix 4 shows my original plan for data recording as presented in my research proposal to Rhodes University Higher Degrees Committee for approval. Aside from changes in my research focus, namely to include the study of networking in a European context as part of the study, the plan basically remained the same throughout the study.

4.3.1 Documentary review

Prior (2003) postulates that we normally think of documents in a uni-dimensional form - as fixed and static texts. However, the definition of documents has changed over the years. Documents now include pictures, diagrams, emblems as well as electronic sources (Prior, 2003). Issues of authenticity of a document often arise in research. Prior argues that this is as a result of the emphasis given to document content rather than use. She

further observes that we rarely pay attention to processes that underpin the manufacture of documents as the focus is on the final finished product, "... yet in order to produce that object various actors have had to call upon a complex system of rules, conventions, organisation strategies and conceptual schemes ..." (Prior, 2003:31). In the light of the above observation, this study drew on any document that would be useful in the context the research questions. Some documents reviewed for the purpose of this study such as CDN workshop reports were manufactured in the process of implementing this Course Development Network. It is my belief that their reliability is as good as any other document used in this study as they have been active agents in the research process, if we follow Prior's (2003:32) notion of "... documents are never inert, but enter into projects as independent agents ..." The notion of documents as agents is congruent with the ANT which views actors as both human and non-human (see section 3.4). This means that documents as non-human agents can serve as active agents in an actor network.

In this study, data from documents was generated in the context of three networks: the CDN, ENSI and SEEPS networks. The documents were reviewed with the aim of establishing how the networks evolved and played out in the light of professional development and institutionalisation of environmental education in each case. The review followed Prior's (2003) suggested systematic review procedures i.e. the selection of sources of evidence; assessment of the scope and robustness of data; and data extraction. Selection of documents was not predetermined though I had some rough ideas of the kind of documents that could contain evidence as shown in the excerpt from the proposal (Appendix 4). Assessing the scope and robustness of data from documents was through a rigorous review of each document selected as a potential source of evidence. I identified the type of documents that would contribute to the study early on in the research.

Tables 4.2, 4.3 and 4.4 show the different documents which were reviewed in each of the three case studies i.e. CDN, ENSI and SEEPS.

Table 4.2 Documents reviewed for the CDN case study

Discussion document: The Rhodes University/Gold Fields Participatory Course in EE- New Directions and Changing Times, June 2000, Lotz-Sisitka, H.
Email: Gold Fields and other courses: Workshop on 26 th October, 2000, Lotz-Sisitka, H.
Strategic options for Danish assistance to the regional EE initiatives and strategic action plan in southern Africa. 2001. Lotz-Sisitka, H and Ward, M.
Letter to Jackie Fredendal and Darryll Kilian, Royal Danish Embassy, 2001, Taylor J.
SADC Regional Environmental Education Programme Evaluation, May 2005, Rosenberg, E.
SADC Regional Environmental Education Programme Document, 2002
SADC REES Inception Report REES (2001)
SADC REES Final Project Completion Report REES (2004)
Six Regional Workshop Reports (South Africa, Botswana, Namibia, Lesotho, Swaziland, Mauritius)
SADC REES First Progress Report, REES (2002)
SADC REES Second Progress Report, REES (2003a)
SADC REES Third Progress Report , REES (2003b)
SADC REES Course Development Network Report, 2002, Price, L.
Monograph: Cases of Course Development in Environmental and Sustainability Education in Southern Africa. Lupele, J. (Ed) (2005).
Positioning southern African environmental education in a changing political, economic, social, natural and epistemological [environmental] landscape. Lotz-Sisitka, (2004)
Course Materials developed by CDN member institutions (University of South Africa; University of Botswana; Rhodes University; Swaziland; Polytechnic of Namibia; Mufulira College of Education)

Table 4.3 Documents reviewed for ENSI case study

ENSI/SEED Annual General Meeting 2004 minutes
The role of environment and school Initiatives (ENSI). Smith (2004)
The Organisation for Economic Co-operation and Development (OCED), OCED 2005
ENSI flyer
ENSI Website
Feedback on the draft ENSI case study. Email communication April 2006, Pfaffenwimmer, G.
Feedback on the draft ENSI case study. Email Communication, June 2006. Tilbury, D.
Feedback on the draft ENSI case study. Email Communication, September, 2006. Smith, S.

Table 4.4 Documents reviewed for SEEPS case study

SEEPS Final Report, 2004. Shallcross, T.
SEEPS Materials on CD ROM.
SEEPS Website.
Feedback on the draft SEEPS case study. Email communication January 2006, Pace, P.

Data from documentary review was supplemented by interviews with selected network members in each of the three cases above. The interviews focused on the network members' participation in the network with respect to expectations, professional development and institutionalisation of environmental education programme and/or courses.

4.3.2 Interviews

In social science three types of interviews have been identified. These include structured, semi-structured and unstructured interviews (Koul, 1984; Chambers, 1994; Mikkelsen, 1995). Structured interviews are standardized and pre-determined (Mikkelsen, 1995), the interviewer follows the interview schedule strictly. Unstructured interviews do not have a particular structure or procedure to follow. However, a series of questions may be thought through beforehand. The interviewer has greater flexibility about the items, order, form and timing in which the questions are asked (Koul, 1984). Between the structured and unstructured is the semi-structured interview.

In this study, I worked primarily with semi-structured interviews as they provided opportunities to probe some responses further (Frey & Fontana, 1991). Frey and Fontana (1991) argue that semi-structured and (unstructured) interviews provide greater breadth of data than structured interviews. I, however, did not use unstructured interviews as they tend to be long winded and lose focus. In order to get more in-depth detail, nearly all interviews (with permission from the interviewee) were tape-recorded and transcribed for the purpose of data analysis (Patton, 1990). Through the use of semi-structured interviews, I was able to follow leads on professional development and institutionalisation, based on what the interviewee was saying. In some instances, however, it became difficult to regulate the extent to which a question was answered as some respondents elaborated on what they perceived as important information for this study. Not wanting to put them off, I let them complete their angle of reasoning before I could get back to my interview schedule. In one instance, an interview intended to take 30 minutes went on for one and half hours. The interview took about 10 hours to transcribe and the script filled 14 pages! However, though a greater part of the

respondent's discussion was not part of my interview schedule, I eventually discovered that the unsolicited information was very important to another aspect of this study. The data actually provided useful insights into the underlying mechanisms that shaped the conceptualisation and implementation of the CDN as a funded project.

In total, 28 interviews were conducted with 23 participants (note that some participants were interviewed more than once). Interviews took place in Zambia, South Africa, Mauritius, Namibia, Swaziland, Italy and the United Kingdom where I met members of the SADC Course Development Network or ENSI and SEEPS, often at workshops or conferences. Table 4.5 shows the people who were interviewed, and itemizes dates and places where the interviews took place.

Table 4.5 People interviewed (and their affiliations) for the purpose of this study

Course Development Network		
Heila Lotz-Sisitka, Rhodes University, South Africa (23-03-05, Grahamstown, South Africa)	Tsepo Mokuku, National University of Lesotho, Lesotho.(12-03-05, 09-03-04: Grahamstown, South Africa; Belle Mare Mauritius)	Charles Obol, SADC REES, Lesotho (02-12-03: Manzini, Swaziland)
Evaristo Kalumba, Mufulira College of Education, Zambia (02-12-03; 17-02-2004; Manzini, Swaziland: Howick, South Africa)	Sarah Armstrong, Polytechnic of Namibia (25-04-05; Windhoek, Namibia)	David Sampson, National Institute of Education Development: Namibia (25-04-05, Windhoek, Namibia)
Mphemelang Ketlhoitwe, University of Botswana, Botswana (02-12-03; 08-03-04; 13-03-2005: Belle Mare, Mauritius, Swaziland, Grahamstown, South Africa)	Steve van Staden, Polytechnic of Namibia (25-04-05; Windhoek, Namibia)	Khemraj Sooknah, Mauritian Wildlife Clubs, Mauritius (09-0-04: Belle Mare, Mauritius)
Cheryl Le Roux, University of South Africa, South Africa (02-12-03; 05-04-05)	Georgie Fröhlich, Desert Research Foundation of Namibia, Namibia (02-012-03; 12-03-05): Manzini, Swaziland: Grahamstown, South Africa)	Alistair Chadwick, SADC REEP, South Africa (02-12-03, Manzini)
Mandla Mlipha, University of Swaziland (9-03-04: Belle Mare, Mauritius)	Leigh Price, Consultant, Zimbabwe (22-03-05- Grahamstown, South Africa)	Rob O'Donoghue, Rhodes University (09-03-04; Belle Mare, Mauritius)
Jim Taylor SADC REEP (29-05-06: Howick, South Africa)	Mike Ward SADC REEP (2-06-06: Howick, South Africa)	
Environment and School Initiatives (ENSI)		

Nicola Bedlington, ENSI Secretariat, Switzerland. (4-10-05, Torino, Italy)	Regula Kyburz-Graber, University of Zurich, Switzerland. (4-10-05, Torino, Italy)	Ian Robottom, Deakin University, Australia (4-10-05, Torino, Italy)
Paul Hart, University of Regina, Canada (4-10-05, Torino, Italy)	Sustainability Education for European Primary Schools (SEEPS)	
	John Robinson, Manchester Metropolitan University, United Kingdom (17-01-05, Manchester, UK)	Tony Shallcross, Manchester Metropolitan University (15 th December, 2004), United Kingdom

The interviews with the CDN members were ongoing since 2003. The interviews served two main purposes. The first set of interviews focused on the members' experience in course development and their understanding of key concepts of the network i.e. professional development and institutionalisation. The second set of interviews focused on members' reflection on their involvement in the CDN.

All interviews (except two who had to respond to an interview schedule by email) with the CDN members were face to face and tape recorded. Frey and Fontana (1991) observe that while the most common form of interviews involves individual face-to-face verbal interchange, interviews can also take the form of face-to-face group interchange, mailed or self-administered questionnaires, and telephone surveys.

Interviews with members of ENSI and SEEPS were also face to face and tape recorded. However, I had one telephonic interview. The telephonic interview provided a different experience and challenges as I explain below.

- *Telephone interview*

Though I had planned to travel to Switzerland (from Manchester) to meet some of members of Environment and School Initiative (ENSI) network, I met and interviewed four members of ENSI during the 3rd World Environmental Education Congress in Torino, Italy. Two months later, a follow up interview with one of the members had to be done by telephone due to high travel costs. I was very nervous to carry out a telephone interview as this was going to be my first experience.

As part of the preparations for the interview, I bought a digital recording machine and a telephone recording connector that is plugged into the telephone line jack. A day before the interview, I attempted to set up the recording device across the phone line when I realised that the line jack was not compatible with the telephone recording connection. I did not realise that there could be such differences in the line jacks and connectors within the same country (especially as I had been assured that the two devices were British made). I was forced to return and get another connector. This time I had to carry the telephone handset to the shop to make sure that things worked. I tested the recording set up with a friend a day before the actual interview and all was working well.

As in face to face tape recorded interviews, the telephone interview despite my high quality recording device was not without problems. At the start of the interview, the interviewee was barely audible as evidenced in the following excerpt of the interview:

Interviewer: Good morning (name withheld)

Interviewee: Good morning.

Interviewer: It is a pleasure to talk to you once again; we did talk to each other in Italy. Today, the 5th December, and this is a follow up interview with regards to the work of ENSI. So are you ready for this interview?

Interviewee: Yeah, Yeah.

Interviewer: Okay, would you mind speaking a bit louder.

Interviewee: Yes, I have tried on the phone actually, are you phoning from a mobile?

Interviewer: No! No! I am using a landline.

Interviewee: Yeah,

Interviewer: It is just for the machine to pick what we are saying...

4.3.3 Focus group discussion

At the start of the data generation process, I developed a semi-structured interview schedule (Appendix 5). I was uncertain if the schedule would capture all I needed to know about the research goal. I used a focus group discussion with six members of the CDN primarily to test the interview schedule (though the results from this phase have been used in the study). This helped to refine the interview schedule for the subsequent individual interviews (Appendix 6). Cohen, Manion and Morrison (2000) observe that

focus group discussions, apart from yielding in-depth insights into the research question, being economical on time and producing a large amount of data in a short period of time, can also be used to develop themes, topics and schedules for subsequent interviews.

The second time I used a focus group discussion was with three ENSI members at the 3rd World Environmental Education Congress in Torino, Italy. Though ENSI was one of the case studies I planned to review in the light of this study, meeting the network members at the conference was by mere chance. My initial intentions were to interview each of them individually but due to lack of time, I decided to carry out a focus group discussion using the individual interview schedule I had developed for European networks (see Appendix 7). As articulated by Berg (2004) the interactions among the three group members seemed to have stimulated discussions.

The informal group discussion atmosphere of the focus group structure seemed to have encouraged the three ENSI members to speak freely about ENSI and its achievements (Berg, 2004). Members were able to react to each others' comments. Occasionally, they reminded and corrected each other on some issues and questions. Another contributing factor to the group's cordial discussion would have been the fact that they were colleagues who had worked together in environmental education for a number of years though they came from different continents.

4.3.4 Field notes

As explained before, I was researching a course development network which I was the coordinator. Thus, sometimes it was difficult to distinguish when I was doing research or when I was doing my work as a project coordinator. To help me record insights for the research process, I kept a record of important and salient events of the networking process. These were mainly events I felt had a bearing on the research process or questions. They included my own reflections, observations and interpretations of activities and occurrences in the life of the research. As noted by Patton (2002) who describes the nature of field notes, my notes included my insights, reflections, observations, occurrences and interpretations. My interpretation of field notes were often

indicated in square brackets. Some of what I have called field notes were not generated in the field *per se* but through telephone conversations and through formal and informal conversations and meetings with critical peers.

All field notes were recorded in my personal dairy and research note books (I used two 200 paged B5 spiral note books). Throughout the research period I recorded events and ideas I thought were worth remembering (Patton, 1990). In many instances I never recorded notes openly except during workshops when everyone was busy. Somehow, I felt uncomfortable and thought the members would feel uneasy as it would look as though I was infringing on their freedom to participate freely - we no one recording the workshop process.

Patton (1990) argues that the most fundamental distinction that differentiates observational strategies is the extent to which the observer is a participant in the setting being observed. He notes that the extent of participation can change over time. In this process, I was a participant observer throughout the course development network process. Though I was immersed in the running of the course development network as a funded project, I frequently consulted members in the decision making processes. As a result the course development network members viewed me as a colleague, and they probably would not have been worried by my openly taking notes during workshops as I had earlier negotiated for use of CDN materials for the purpose of this study (see section 4.9).

Data from field notes was used to triangulate and validate data from other sources. The observations provided me with further insight into the research process especially as I read through some of the records from informal discussions with CDN members. Although Creswell (2003) recommends that in taking field notes (observations) on behaviour and activities of individuals, the researcher needs to develop a structured schedule beforehand indicating what aspects he or she intends to observe, my use of note books to record field notes was done more randomly and I recorded events and activities as they happened. More formalised records of the research activities were retrieved from the workshop reports which took care of the reflection process for each individual

member as they reported back on the progress of their activities at each subsequent regional meeting.

4.4 DATA ORGANISATION

Data generation for this research spanned a period of over two years and volumes of data were accumulated. Patton (1990) observes that if such voluminous data is not well organised it could prove problematic during analysis. I drew on the caution of researchers (such as Burroughs, 1975; Stenhouse, 1978; Patton, 1990) who emphasise the need for good organisation of data before analysis. Berg (2004) also observes that the raw data is not immediately available for analysis but requires some organisation and processing before they can actually be analysed. In this study, organisation of data was challenging due to the volumes accumulated especially from the CDN as a funded project. My task was to make a distinction between routine project management materials and research data.

Drawing on Lotz (1996), I classified the research data into data source folders (DSF) 1 to 6. Each folder was made up of a number of files numerically identified. For example, DSF 1 was for Field Notes and contained Field Note Files (FN) 1 to 24. To a large extent, the classification of data in folders and data files was a simulation of Microsoft Word computer classification. I found this useful as I could easily relate the hard copies of data to the soft ones saved on my computer (where these existed).

4.4.1 Data from interviews

In preparation for data analysis, all interviews were transcribed verbatim as soon as the interviews were conducted. The transcripts were edited. This involved playing back the interview and listening for inconsistencies in the scripts. The process helped to clear some of the faintly audible words used by the interviewees. In a number of cases I sent scripts back to the interviewees for validation and clarity, highlighting aspects that were not clear. Due to variations in English accents and probably due to the fact that I was not

a native English speaker, I had problems identifying the right words especially in the early interviews with British nationals. So sending back scripts for validation and correction helped a lot. However, some interviewees did not agree with my sending them the scripts recorded verbatim. They rather preferred receiving sections of the thesis where I had analysed and interpreted the data. Some of those who received the scripts wished I had edited the grammar and sentence structures. In responding to this I was mindful of Patton's (2002:441) observation that " ... the grammar in natural conversations comes out atrocious when transcribed. Sentences hang incomplete, interrupted by new thoughts before the first sentence was complete".

The process of editing and incorporating corrections to the scripts provided me with insights into the research questions. This became the basis for developing new dimensions in the questioning techniques. The process of refining the interview scripts also gave me insight into the emerging ideas and allowed me to begin assessing the gist of the data which helped with refining the theoretical orientation of the study as discussed in chapter 3. Initial interview transcriptions helped me improve the process of asking questions and the depth of probing in the subsequent interviews. Patton (2002) notes that transcribing offers another point of transition between data collection and analysis as part of data management and preparation.

4.4.2 Data from field notes

All the hand written field notes were typed and edited in preparation for data analysis. Typing and organising hand written field notes offered me another opportunity to be immersed in the data before analysing it (Patton, 2002). It also refreshed my mind on some of the fieldwork events that I had forgotten. Though the field notes were recorded immediately as events happened, it took time before I typed them in an organised manner and as such it was refreshing to remember some of the events of the research process.

4.4.3 Data from emails

At the end of 33 months the project had accumulated about four box files full of emails. Emails that related to course development and networking processes were sorted out into four printed latch files. Due to the fact that I was researching a project that I was managing, I had access to all of the email communications associated with the CDN. I sorted out the emails to identify those that dealt with the processes of networking professional development and institutionalisation. I ended up identifying 40 emails from 200 that would be useful in the research process.

4.5 DATA ANALYSIS AND INTERPRETATION

The thought process, in more general terms, in the analysis and interpretation of data in this study is shaped by the critical realist ontology and its stratified distribution between the real, the actual and the empirical (see section 3.3.1). This can be elaborated as follows:

- The real – I sought insight into the contextual realities, structures (internally and externally related) and underlying mechanisms that enable or constrain networking, professional development and institutionalisation of environmental education courses in the context of ENSI, SEEPS and CDN.
- The actual – here I looked at what happens when network members are set to work together. I sought evidence of courses developed, and evidence of professional growth as a result of being members of the network as well as processes that contribute to the professional development process. I also sought evidence of the process of institutionalisation of environment education courses and how these are enabled or constrained.
- The empirical – at this level I sought insight into the experience which was articulated by network members through interviews, focus group discussions and observations by means of field notes and workshop interactions with members of the network/s.

4.5.1 How the CDN members experienced the CDN processes

In the light of the above, the realist ontology enabled me to understand some underlying conditions (mechanisms) that enabled or constrained networking, professional development and institutionalisation beyond what the network members were able to express or experience as presented in the data. In the main, data analysis and interpretation was informed by the process of abstraction and conceptualisation by means of realist questions explained in sections 3.3.4 and 4.7. Maxwell (2005) differentiates realist questions from instrumentalist questions where the latter is said to focus on observable or measurable data. On the other hand realists do not assume that research questions and conclusions about feelings, intentions, prior behaviour, and effects, among others need to be reduced to, or framed as, questions and conclusions about the actual data that one collects. Instead, they "... treat these unobserved phenomena as *real* and their data as *evidence* of these, to be used critically to develop and test ideas about the existence and nature of the phenomena ..." (Maxwell, 2005:73).

I am, however, aware that all knowledge is fallible (Sayer, 2000) and so are my claims of understanding the underlying structures and mechanism. My reliance on realist questions may have led to unwarranted conclusions or allowed my personal assumptions or hopes to influence the results of this study but, as Maxwell (2005:73) points out, "... the risk of trivializing your study by restricting your questions to what can be directly observed is usually more serious than the risk of drawing invalid conclusions". As I worked with realist questions, I drew on Maxwell's (*ibid*) work to address some of the validity threats that would come with this approach as systematically and rigorously as my capabilities would allow. I have explained the detail of this process in section 4.7.

Data analysis and interpretation in this study was also informed by the fact that there are no straightforward tests and rules of data analysis in qualitative research that can replicate the researcher's analytical thought processes (see Patton, 1990). Traditionally, social science and educational research have relied solely on deductive and inductive methods of data analysis. Patton (1990) observes that data analysis and interpretations involve making sense of what has been said by looking for patterns and making inferences by

integrating what different people have said in different phases of the research process. This view is supported by Ang (cited in Ezzy, 2002) who rejects the assumption that it is the reliability and accuracy of the methodologies being used that ascertain the validity of the outcomes of research. Instead, he argues that what is of critical importance is the way in which those statements are made sensible through interpretation. One common approach to data analysis in qualitative research has been looking for regularities/patterns. This approach has been associated with two main methods – i.e. deductive and inductive methods. In the section that follows I explain these in more detail as I have drawn on some of their aspects for this research, especially as I examined the *actual* and *empirical* ontological layers.

4.5.2 Deductive and inductive modes of inference

According to Ezzy (2002) the deductive method is based on the premise of theory building and verification. The method is said to start with an abstract theory, logically deduce some implications, formulates some hypotheses, and then develop experiments or tests to verify or falsify the truth of the hypotheses. In other words deductive method builds from abstract pre-existing theory. Ezzy (2002) notes that in this approach the events of everyday life, or data, becomes important only as part of a test or hypotheses logically deduced from more general theory.

On the other hand, the inductive approach to data analysis has its origin in grounded theory developed by Glaser and Strauss (Ezzy, 2002). The method is developed on the assumption that the researcher is or ought to be *tabula rasa* and has no pre-existing theory or understanding (Ezzy, 2002). Research data is initially considered to be free of theory and Glaser and Strauss originally recommended that the researcher should avoid presuppositions or other hypotheses from previous studies (Scott & Usher, 1999). Though there have been modifications to Glaser and Strauss' original ideas of grounded theory, the validity criteria is still whether the theory is grounded in data (Scott & Usher, 1999; see also Danermark et al., 2002).

In the case of this study, I used computer software NVivo to manage inductive analysis of data. Nvivo enabled me to reveal the features and relationships in the data in more depth as it allowed me to browse all the data coded at a node, reviewing the data, returning to the context or rethinking the idea (Bazeley & Richards, 2000). The software also provided an opportunity to do many things simultaneously such as interpreting an interview script and storing the ideas that emerge through annotating by means of memos (see Appendix 8 for sample of memos). I was also able to link codes as I reflected on the data.

Having numerically marked each edited transcript, I saved the word document scripts in rich text format and imported them to the Nvivo platform. The first coding was key words or phrases from each script. Through this process I was able to generate first concepts/ideas from the data (Bazeley & Richards, 2000). I then coded the key themes of the study (i.e. networking, professional development and institutionalisation). Bazeley and Richards (2000) call this broad brush coding. The next step was coding by using the main ideas from interview questions. I was then able to read the initial coding and coding under each of the main ideas contained in the interview schedules in the broader context of the key research themes. The broader themes formed the chapter headings used to structure reporting of the findings (see Chapters 7 and 8). The categories that came from subsequent coding formed theoretical concepts which became the main findings (see Appendix 9 for an example of data coding record). The process of data analysis using NVivo is summarised in Table 4.6.

Table 4.6 Summary of data analysis process using Nvivo

Step	Detailed analysis
1	Edited transcripts were numerically marked to identity of the interviewees, emails and field notes.
2	Coding of key words /phrases from each script to get general ideas from the data.
3	Broad brush coding of each of the scripts
4	Coding by means of main ideas from each of the questions under the broad categories

5	Revising and merging of codes where appropriate for consolidation
6	Emerging theory

It has been argued (Scott & Usher, 1999; Danermark et al., 2002) that both inductive and deductive research strategies have not provided convincing explanations of how social scientists develop knowledge of society and educationalists of educational systems and activities. Danermark et al. (2002) argue that inductive inference gives no guidance as to how, from something observable (empirical), we can reach knowledge of the underlying structures and mechanisms. Since this study is developed on the premise that reality also exists outside human consciousness and that there are causal mechanisms that influence events and experience (see section 3.3.1), restricting data analysis to deductive and inductive approaches has a number of implications. For example, it would negate the critical realist view of a stratified ontology as only the actual and empirical would be examined in the research data. Working only with inductive and deductive methods tends to confine the research to the empirical domains which excludes the domain of deep structures of reality (*ibid*).

As explained in chapter 3 (section 3.3.1) there is more to the world, than patterns of events of experiences (which inductive and deductive methods tend to focus on). Critical realists argue that the world has ontological depth i.e. events and experience arise from the workings of mechanisms which derive from the structures of objects and they take place within geo-historical contexts (Sayer, 2000; Danermark et al., 2002). In my view induction and deduction fall short of identifying the structures and mechanisms of social reality as noted by Scott and Usher (1999). They note that other strategies namely, retroduction and abduction have been suggested. Danermark et al. (2002) further argue that abduction and retroduction constitute a necessary complement to induction and deduction in social science research that seeks knowledge of structures and mechanisms. They postulate that both abductive and retroductive types of inference represent more comprehensive ways of reasoning, arguing and relating to the universal/general – what they call ‘thought operations’. Although the four inference approaches are different in

some aspects and therefore influence data analysis, Danermark et al. (2002) consider the four modes of inference as complementary in research practice aimed at explaining society. This study draws more on inductive, abductive and retroductive thought operations in conformity with the critical realist ontology. I draw on the pronouncements by a number of authors who argue that data interpretation and presentation is influenced by theoretical perspectives that inform the study (Patton, 1990; Ezzy, 2002; Creswell, 2003). In the next section I look at abductive and retroductive methods of inference and how they have been used in this study.

4.5.3 Abductive and retroductive modes of inference

The introduction of abductive and retroductive methods of inference as complementary to inductive and deductive approaches have their roots in the work of critical realists. As my interest in this study lies in seeking insights into the underlying structures and mechanisms of networking, professional development and institutionalisation beyond the empirical data and observable events, I drew more on inductive, abductive and retroductive methods of inference. Table 4.7 provides a summary of the main differences and similarities among the four methods of inference – i.e. deduction, induction, abduction and retroduction. Only aspects that were cardinal to the research process in the context of this study have been retained from the original table presented by Danermark et al. (2002:80-81).

Table 4.7 Summary of deductive, inductive, abductive and retroductive modes of inferences (adapted from Danermark et al., 2002)

	<i>Deduction</i>	<i>Induction</i>	<i>Abduction</i>	<i>Retroduction</i>
Fundamental structure/ thought operations	Derive logically valid conclusions from given premises. To derive knowledge of individual phenomena from universal laws.	From a number of observations draw universally valid conclusions about a whole population. To see similarities in a number of observations and draw the	Interpret and recontextualise individual phenomena within a conceptual framework or a set of ideas. To be able to understand something in a new conceptual	From a description and analysis of concrete phenomena to reconstruct the basic conditions for these phenomena to be what they are. By way of thought

	<i>Deduction</i>	<i>Induction</i>	<i>Abduction</i>	<i>Retroduction</i>
		conclusion that these similarities also apply to non-studied cases. From observed co-variants draw conclusions about law-like relations.	framework.	operations and counterfactual thinking to argue towards transfactual conditions.
Formal logic	Yes	Yes	Yes and No	No
Strict logical inference	Yes	No	No	No
The central issue	What are the logical conclusions of the premises?	What is the element common to a number of observed entities and establish if it is true also of a larger population?	What meaning is given to something interpreted within a particular conceptual framework?	What qualities must exist for something to be possible?
Strength	Provides rules and guidance for logical derivations and investigations of the logical validity in all arguments.	Provides guidance in connection with the empirical generalisations and possibilities to calculate, in part, the precision of such generalisations.	Provides guidance for the interpretative processes by which we ascribe meaning to events in relation to a larger context.	Provides knowledge of transfactual conditions, structures and mechanisms that cannot be directly observed in the domain of empirical and actual.
Limitations	Deduction does not say anything new about reality beyond what is strictly analytical.	Inductive inference can never be either analytically or empirically certain - the internal limitations of induction. Induction is restricted to conclusions at the empirical level - the external limitations of induction.	There are no fixed criteria from which it is possible to assess in a definite way the validity of an abductive conclusion.	There are no fixed criteria from which it would be possible to assess in a definite way the validity of a retroductive conclusion.

In this study, I mainly worked with inductive, abductive and retroductive modes of inferences. The use of the three modes of inferences overlapped across chapters. In some

cases, I found myself falling back on deduction in probing some phases of the study, for example where I used abductive mode of inference (Chapter 5, 6 and 7). Table 4.8 provides a summary of where and how the three modes of inferences were used in the study. Details are discussed in the sections that follow.

Table 4.8 Summary of how and where the three modes of inferences were used in the study

Mode of inference	Where used in the study	How it was used
Induction	Chapters 5, 6, 7 and 8	Initial data analysis of interviews, email and field notes. This was done by means of the NVivo computer software (see section 4.5.2).
Abduction	Chapters 5,6, and 7	<p>I used ANT as a conceptual and analytical framework to recontextualise the ENSI, SEEPS and CDN case studies. This helped to probe causal mechanisms of the three networks (see section 4.7 for details of this process)</p> <p>I also used abduction in chapter 7 to probe professional development. In this case, I drew on COP as the conceptual and analytical framework.</p> <p>Although I used conceptual frameworks (i.e. ANT COP) for the purpose of drawing adductive inferences, I also used deductive inferences to abstract issues associated with networking, professional development and institutionalisation informed by the two conceptual frameworks.</p>
Retrodution	Chapters 5, 8, 9 and 10	<p>By means of retroductive inferences the recontextualised cases studies (see above) were subjected to more rigorous examination. The use of retroductive inference was aimed at 'unearthing' the necessary and contingent mechanisms that presupposed the networks to function the way they did.</p> <p>Retroductive inferences in all the four chapters were mainly by means of counterfactual thinking and studies of extreme cases as explained in chapter 9.</p>

4.6 LITERATURE REVIEW

During the process of literature review for the purpose of establishing the context of the study as well as explaining the key concepts used in this research in chapter 1 and 2 respectively²⁷, I took copious notes on the key readings I came across. By the end of this study, I filled in two and half 200 paged spiral A4 notebooks. At the time of reading I took careful notes around key issues of that underpin this study. In realist terms, I abstracted relevant ideas (through some form of inductive inference) that I felt fell within the research framework.

4.7 DEVELOPMENT OF CASE STUDIES ON NETWORKING

The development of SEEPS, ENSI (Chapter 5) and CDN (Chapter 6) case studies followed abductive and retroductive methods of data analysis. Danermark et al. (2002) note that in social science we interpret actions by regarding them in relation to different theories of social actions. In this study, I used ANT moments of translation as a conceptual and analytical framework to recontextualise or redescribe the case studies from project document analysis and interviews of members of each of the cases. ANT allows a probing of causation by starting from an assumption that all actors in a network are equal. This provides us with an opportunity to trace how the phenomenon evolved by means of what Latour (1987; 1988) calls moments of translation. Latour's model of translation is made up of four 'moments of translation'. These are problematisation, interessement, enrolment and mobilisation and are discussed in detail in section 3.4.2. By using moments of translation to recontextualise the case studies, I was hoping to provide new meaning to what the ENSI, SEEPS and CDN members already knew about their networks. Danermark et al. (2002) note that social science discoveries are to a large extent associated with recontextualisation. They argue that social scientists do not discover new events *in a scientific sense* (my emphasis) that nobody knew before "... what is discovered is connections and relations, not directly observable, by which we can understand and explain already known occurrences in a novel way ..." (*ibid*: 91). By

²⁷ To a greater extent, this applied to other chapters as the literature review was ongoing and cut across the thesis.

means of moments of translation (which in many aspects is a theory about how networks evolve and function around an identified purpose), I was aiming at gaining a deeper knowledge of the meaning of networking, the structures and mechanisms that may shape such networks. Drawing on Danermark et al.'s (2002) argument, ANT helped me build up knowledge on networking that could not be reduced to empirical facts and thus could not be tested in line with the same logic as the testing of empirical predictions. Danermark et al. (*ibid*) raise a question about how one knows if redescriptions or recontextualisation, through abduction, provide better knowledge about the object of study. This question is based on the fact that abductive knowledge applied in social science seldom leads to definitive 'truth' as knowledge in social science is always fallible. In the case of this study, recontextualised draft case studies of ENSI, SEEPS and CDN were shared with network members in each case study for corroboration. Among other things, network members helped to refine the case studies and validate the information. In a way, this was to validate the case studies through member checking as well as to develop them further.

Although not many members responded, the few that commented on the draft documents improved the case studies. Though I used the moments of translation as a theoretical framework to contextualise the case studies, I drew a lot on deductive and inductive processes. For example, even within the moments of translation framework, I used deductive inference to abstract issues related to networking, professional development and institutionalisation as informed by the conceptual framework of this study.

The analysis of interview scripts for the purpose of developing the three case studies followed mainly an inductive approach as I formed concepts (directly from the data) which were categorized and arranged into themes that fed into the different levels of moments of translation. I was, however, aware of the fact that the interviewees' responses were influenced by a number of prevailing circumstances which in a way made inductive inferences subject to uncertainty and in need of deeper analysis.

Having developed the three case studies, I sought to explore what was characteristic and constitutive of the structures of each of the case studies. Thus I had to go beyond what is

empirically observable by asking questions about conditions that may allow the events and phenomena under study to exist (Danermark et al., 2002). This approach of making inferences from data is described as retroduction, which is characterized by advancing from one thing (empirical observation of events) and arriving at something different (a conceptualisation of transfactual conditions) (see Table 4.7 and section 9.2). Danermark et al. (2002) observe that in retroductive argumentation, necessary conditions are separated from contingent. Since this argumentation goes beyond the empirical, it is also called transfactual argumentation (*ibid*).

By means of retroduction the drafts of case studies were subjected to further rigorous examination. This was with the desire to identify the conditions (both necessary and contingent) that presupposed the networks to function the way they did. Danermark et al. (2002) argue that there is no universal method for retroduction but they provide five strategies that can be used when drawing retroductive inferences, namely: counterfactual thinking; social experiments; studies of pathological cases; studies of extreme cases; and comparative studies (for more details on these strategies see Danermark et al., 2002:103-106).

For the purpose of data analysis in this study, I mainly drew on counterfactual thinking and studies of extreme cases as means of retroductive inference (see Chapter 9 section 9.2). According to Danermark et al. (2002) the process of counterfactual thinking relies on practitioners' stored experience and knowledge of reality and their ability to abstract. It entails thinking about what is not, but what might be. I used counterfactual thinking to examine results from interviews and recontextualised the ENSI and SEEPS case studies to lift the research results beyond the empirical.

Danermark et al. (2002) observe that the strength of experimentation in natural science is that studies are done in closed systems such as constructed laboratories where certain mechanisms appear in pure forms. They argue that an alternative in social sciences is to study real cases where mechanisms manifest themselves in a purer form than usual. Drawing on the above, I researched ENSI and SEEPS (as extreme cases) not for their

purser form (as suggested by Danermark et al.) but for their experience and longevity as networks that promoted professional development. ENSI has been in existence for more than two decades. SEEPS has existed for close to 10 years. Both case studies transcend countries and are regional in nature, a characteristic shared with the CDN. I was therefore, interested in probing structures and mechanisms that may have allowed these networks to exist.

As much as the CDN was the principle focus of the study, data analysis and subsequent development of SEEPS and ENSI cases studies provided more insights and, hopefully, a balanced perspective of the concept of networking, professional development and institutionalisation of environmental education courses (Sefike & Le Roux, 2004). Sefike and Le Roux (2004) postulate that by examining the trends in similar and related circumstances, one can gain a balanced perspective of the core issue of the research that adds value to the study and emerging pronouncements. Reviewing literature from an international regional grouping such as the European Commission provided foregrounding for data analysis in CDN-based research (Nhamo, 2005a). Further, the European perspective added vigour to data analysis and interpretation as it relates to critical realism. In chapter 9, I draw on the underlying mechanism that emerged in chapter 5 when I discuss ENSI and SEEPS to examine if the same mechanism also characterises the CDN underlying mechanisms.

In summary, I generally drew on the following realist questions (more questions emerged in the process of data analysis) to draw retroductive inferences in response to the research questions:

- *What are the underlying (contingent and necessary) mechanisms that enabled/constrained SEEPS and ENSI to succeed as education networks?*
- *What are the underlying (contingent and necessary) mechanisms that enabled/constrained the formation and success of the CDN as an education network?*
- *What external and internal conditions were necessary for professional development?*
- *What external and internal conditions enabled or constrained institutionalisation of courses?*

4.8 PROFESSIONAL DEVELOPMENT AND INSTITUTIONALISATION OF COURSES

In probing professional development, abductive and inductive methods of inference were used. Abductive inferences were guided by Lave and Wenger's (1991) analytical framework of Community of Practice. In probing institutionalisation of courses, I depended entirely on inductive and retroductive methods as modes of inferences. Danermark et al. (2002) note that a number of frames of interpretation can be used in one study to complement each other and in some cases they can be integrated. It is for this reason that I worked with both the ANT and COP framework to probe different aspects of the study. The main characteristics of Lave and Wenger's notion of Community of Practice used in probing professional development in this study are discussed in detail in section 3.5.

4.9 ETHICAL CONSIDERATIONS

Cohen, Manion and Morrison (2000) observe that developments in social science research in recent years have placed emphasis on moral issues where researchers have an obligation to respect and protect those involved or affected by their research. They explain that ethical concerns in educational research are often complex, subtle and can sometimes place the researcher in a moral predicament that may be irresolvable. They elaborate that ethical issues may arise from any of the following: the context of the research; the procedures to be adopted; methods of data collection; the nature of participants; the type of data collected and what is to be done with the data (Cohen et al., 2000:49).

At the start of this research project, I sought consent from the CDN members to use the network and all materials generated in the process of networking (including field notes, reports, workshop reports and emails) as a focus for this doctoral research. The network members unanimously granted permission on condition that I acknowledged their contribution. This consent is recorded in the Namibian workshop report (WR 3). I also sought consent from the management of the SADC Regional Environmental Education

Programme, under which the CDN fell, which included a representative from the donor organisation funding the network. Cohen et al. (2000) note that achieving goodwill and co-operation is especially important where the research extends over a period of time. The CDN as a funded project ran close to 4 years.

Writing about ethical challenges in the context of interviews, Patton (2002) notes that interviews are interventions as they lay open thoughts, feelings, knowledge, and experience of both the interviewer and interviewee. He observes that the process of interviewing often takes people through a thoughtful reflection on an experience of one's life and can be change inducing. He warns that the purpose of a research interview is to gather data and not to change people. On the issues of informed consent, I ensured that I explained the process and how the data would be used before any interview or discussion. In the case of the use of emails, I only used emails that were associated with networking and course development processes and in such cases the identity of the authors were hidden. Getting consent was much easier with the members of the CDN who were aware of my research intentions. However, assurance for privacy and confidentiality was important when meeting participants for the first time. This was particularly the case when working with members of the two European networks. They insisted on knowing how the information they were giving would be used and whether or not their right to privacy would be maintained.

Despite the fact that I thought I had taken careful consideration of ethical issues in my design and implementation of the research process, I had a rude shock when I was interviewing a group of members of an international network. Before I could start the interview, they demanded to know if I had completed an ethical requirement contract for collecting data. I was advised that interviewees need protection and as such I needed to sign a contract with them explicitly stating how the information they give will be used. They said that it was a requirement for the universities in Australia, Canada and the USA to complete an ethics contract before anything can be done. They, however, accepted to be interviewed. Although this seemed to be a requirement in the USA, Australia and Canada, my university did not enforce such stringent ethical requirements in the form of

signed contracts. Ethical requirements were, however, that students get consent to interview or conduct research using data generated by social subjects and that the purpose of the research be made clear. In most cases this was done either in verbal or written form. The Rhodes University higher degrees committee also scrutinizes ethical dimensions of the process through a stringent proposal approval.

4.10 TRUSTWORTHINESS

Creswell (2003) explains that validity in qualitative research does not carry the same connotations as it does in quantitative research, where issues of examining stability or consistency or generalisability are central. However, he notes that qualitative researchers can use (in some limited ways) reliability to check for consistent patterns of theme development among several investigators on a team. In qualitative research validity is used to determine whether findings are accurate from the standpoint of the researcher, the participant, or the readers of an account (Creswell, 2003). The idea of validity in qualitative research is represented by such terms as 'trustworthiness,' (as used in this study), 'authenticity,' and 'credibility' (*ibid*). Creswell (2003) outlines eight primary strategies that can be used to show the trustworthiness of a study, namely:

- triangulation;
- member-checking;
- use of rich, thick description;
- reflexivity on researcher's role and possible bias;
- negative or discrepant information;
- prolonged time in the field;
- peer debriefing; and
- use of an external auditor.

In this section, I draw on Creswell's (2003) heuristic above and Maxwell (2005) to provide insights into why I feel this study is trustworthy. The strategies directly related to this study are: triangulation; member-checking; use of rich thick description; prolonged time in the field; peer debriefing and self-reflexivity.

4.10.1 Triangulation

In order to avoid 'bias' (Creswell, 2003; Maxwell, 2005), I generated different types of data (see section 4.4) and drew from a variety of sources. I also used a variety of methods to generate data namely interviews, document review, field notes (see section 4.3). According to Maxwell (2005) triangulation increases validity in a research. He cautions that sometimes the methods that are triangulated may have the same biases and sources of invalidity. However, in this study, I used triangulation in data generation and analysis to build a coherent justification for themes (Creswell, 2003). For example, I used inductive mode of inferences to analyse the data and later abductive and retroductive modes of inference, to analyse the same data to provide rigour to the emerging themes. To minimise validity threats, I gathered substantial of evidence on data generated through interviews by triangulating this with data from documents and field notes. For example, one interviewee's opinion over the conceptualisation of the CDN was a lone voice as no other person seemed to have agreed with him. However, triangulation with data from early documents on the network formulation confirmed his claims.

4.10.2 Member checking

Creswell (2003) describes member checking as the practice of taking the final report or part of processed data to participants for them to verify the accuracy. Maxwell (2005) calls this 'respondent validation' which he describes as systematically soliciting feedback about the data and conclusions from the participants. He notes that this is one of the surest ways of ruling out the possibilities of misrepresenting the participants' perceptions and views. In this study, after developing draft chapters of the SEEPS and ENSI case studies from interview data and documents that became available to me, I sent the draft case studies to members of the two networks so that they could corroborate the two cases. This process led to further inputs and clarification of some misrepresentations. As much as this could rule out possibilities of misrepresentations as observed by (Maxwell, 2005), it proved difficult to conclude the case studies due to differences of opinion from members of the two networks. However, further triangulation with the documents and websites helped me to make an informed conclusion. In the case of interviews, scripts

were sent back to interviewees for validation. The response in this process was poor as most people never reported back, despite repeated requests for feedback.

4.10.3 Rich, thick description

Maxwell (2005) observes that both long-term involvement and intensive interviews enables the collection of 'rich' data, data that are detailed and varied enough that they provide a full and revealing picture of what is going on. In this study, I transcribed the data verbatim as explained in section 4.4.1 which helped me to provide rich descriptions of findings in chapters 5, 6, 7 and 8. I am hopeful that these findings provide a clear picture for the reader of what happened in the research (Patton, 2002; Creswell, 2003; Maxwell, 2005). I have also provided direct quotes from the verbatim data (which are presented in italics throughout this study) to provide the voice of the research participants. The interview scripts provided a detailed account of the dialogue between myself as a researcher and the interviewee. This process was given more rigour by working with data interpreted by means of NVivo software.

4.10.4 Prolonged period of data generation

As explained in section 4.3, data generation for this study took over 2 years. Part of the data was generated in southern African countries where the CDN operated and other interviews were carried out in Europe (England and Italy) where I met members of SEEPS and ENSI. Some data such as workshop reports were generated as the CDN unfolded as a funded project. These have helped to provide more evidence to supplement the interview and document data. As I worked with this data for this extended time, I believe that I have been able to develop an indepth understanding of the phenomenon under study (Patton, 2002; Creswell, 2003; Maxwell, 2005). I also had at least two interviews with most of the members of the CDN, which provided me with more insights into the CDN. This is besides the fact that as coordinator of the project, I was always part of the process as a participant observer.

Repeated observations and interviews, as well as the sustained presence of the researcher in the setting studied, can help to rule out spurious associations and premature theories. They also allow a much greater opportunity to develop and test alternative hypotheses during the course of the research (Maxwell, 2005:110).

Outside Creswell's (2003) heuristic, my use of ANT and COP as frames of interpretations (see chapters 5, 6 and 7) provided insights which individual interview data could not provide (Danermark et al., 2002).

4.10.5 Self-reflexivity

Being a researcher and project coordinator, I was always aware of the likelihood of role conflict that would lead to some bias. To avoid bias in this study, the project ran normally based on the project document and planned activities. The research focused on the processes of networking, professional development and institutionalisation of environmental education. Initial data was generated from the CDN activities in the day to day running of the project. The second level of data generation was done by means of interviews which elicited CDN members' experience and reflection on the process. After three years, I stepped down as coordinator of the CDN to concentrate on the research aspect. This is when the project was extended for a further year. My detachment from the project provided an opportunity to reflexively examine the research process as the CDN unfolded without my full participation (see section 10.7).

4.10.6 Validity from the critical realist perspective

The concept of validity in research has been associated with quantitative research for many years (Stenhouse, 1978; Maxwell, 1992; Patton, 2002). It is for this reason that existing categories of validity such as internal and external validity are based on positivist assumptions that underlie quantitative and experimental research designs (Maxwell, 1992). Maxwell (1992) argues that defining validity in terms of procedures (as I have done in section 4.10 above), an approach generally associated with instrumentalist or positivist methodologies is not the only approach available. He proposes a realist conception of validity as an alternative. A realist approach to validity sees the validity of an account as inherent, not in the procedures used to produce and validate it, but in what Maxwell (1992) calls its relationship to those things of which it is intended to be an account.

Maxwell's (1992) notion of validity draws on critical realism that assumes that we can have no direct knowledge of the objects of our accounts and thus no independent entity to which to compare these accounts. He argues that the concept of validity does not depend on the existence of some absolute truth or reality to which an account can be compared, but depends on the fact that there exist ways of assessing accounts that do not depend entirely on features of the account itself. Maxwell (1992) identifies five broad categories of validity in critical realism accounts. These are:

- descriptive validity,
- interpretive validity,
- theoretical validity,
- generalisability and
- evaluative validity.

This study draws on the first three categories of validity as they are directly involved in assessing a qualitative account as it pertains to the actual situation on which the account is based (*ibid*).

Descriptive Validity – According to Maxwell (*ibid*) this category is concerned with factual accuracy of the researcher's account – that is they are not making up or distorting the things they say and heard. This he calls primary descriptive validity. As far as this study is concerned all the interview data is a reflection of what the CDN members actually said. I tried to record interviews and field notes as accurately as possible. In the case of the interviews, these were recorded verbatim. Chances of mis-transcription were reduced by asking the interviewees to corroborate the accuracy of their accounts when I provided them with an opportunity to read through the transcribed scripts. In secondary descriptive validity (validity of accounts that could in principle be observed, but were inferred from other data), I draw on written accounts of the CDN members such as articles and papers about their experience and participation in course development process to infer and explain concepts and themes that emerged in this study. I also drew on similar cases (informed by abduction and reproduction modes of inferences) such as

the ENSI and SEEPS case studies (see chapter 5) to explain networking, professional development and institutionalisation of courses in the context of the CDN.

Interpretive Validity – Maxwell (1992) observes that qualitative researchers are not concerned solely with providing a valid description of the physical objects, events and behaviours in the settings they study, but they are also concerned with what these objects, events and behaviours mean to the people engaged in and with them. In other words researchers are also concerned with the participants' perception. He calls this (understanding of the objects, events and behaviours, and participants' perceptions) interpretation and the type of validity associated with it interpretive validity (*ibid*). He argues that in interpretive validity, the issue is not about the appropriateness of these concepts for the account but more about their accuracy as applied to the perspective of the individuals involved in the research (*ibid*). Maxwell argues that the validity of the accounts of the participants' meanings are never a matter of direct access but are always constructed by the researcher on the basis of participants' accounts and other accounts. In this study the meaning of professional development and factors influencing institutionalisation of environmental education courses were constructed from the interview data (representing CDN members' accounts) and others accounts such as articles written by participants to explain issues associated with course development processes. This process drew on Maxwell's argument that any valid explanation of a social situation must respect the perspectives of the actors in that situation.

Theoretical Validity – The descriptive and interpretive validity discussed earlier have one thing in common: they focus on the accuracy of data used in the study and not meaning. Maxwell (1992) notes that one of the major differences between theoretical understanding and descriptive and interpretive validity is the degree of abstraction of the account in question from the immediate physical and mental phenomena studied. In other words, theoretical validity goes beyond concrete description and interpretation and explicitly addresses the theoretical constructions that the researcher brings to, or develops during the study. An example in this study is the use of abductive and retroductive modes

of inferences. Both abductive and retroductive modes of inferences aided this study to go beyond simple description of participants' perspectives.

Maxwell (1992) postulates that what counts as theoretical validity, rather than descriptive or interpretive validity, depends on whether there is consensus within the community concerned with the research about the terms used to characterize the phenomena. In developing the CDN members' perceptions of professional development and institutionalisation of environmental education courses, I sought the consensus of their participants understanding by examining the themes and categories that emerged from the inductive mode of inference. These were further recontextualised through the abductive and retroductive modes of inferences.

4.11 CONCLUSION

This chapter has discussed the research process that I followed in this study. It explains that the process was shaped by the critical realist ontology which argues for stratified ontology of reality. The critical realist knowledge claim that there is reality outside human consciousness shaped the research design and process in an open social system. I have also discussed details of the modes of inference that guided data analysis, which included induction, abduction and retroduction. The chapter also describes how computer software Nvivo was used to analyse and manage data from interviews. The software facilitated the development of deeper insight into the data and relationships that formed across different data sets.

The chapter also provides details on the sources of data which were mainly documents, interviews with key actors in the three networks under study and field notes. The chapter also discusses ethical procedures that guided practice in this study. I have shared one of the ethical dilemmas that I faced in the process of researching international networks. The chapter ends with a discussion of trustworthiness of the study by providing details of how I went about ensuring that the reader could have faith in this work. As much as I think this study is trustworthy, I am aware of the critical realists' notion of fallibility of

all knowledge (Sayer, 1984; Schostak, 2002; Archer, 2003; Creswell, 2003). I have indicated that although I have used a range of modes of inference in the analysis process, conclusions may well be fallible.

In the next chapter, I look at the two networks I studied whilst in England. The opening of the chapter provides some insight with regards the relevance of the two case studies to this study.

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CHAPTER 5

EDUCATION NETWORKS: THE EUROPEAN EXPERIENCE

5.1 INTRODUCTION

This chapter draws on the notion of networking as used in the European Education sphere. As part of the research process, two cases studies of mainly European-based environmental education networks were collaboratively developed with members of the respective network's input. The two cases studies – Sustainability Education for European Primary Schools (SEEPS) and Environment and School Initiatives (ENSI) are examined in this chapter in terms of how the networks evolved, how members were enrolled (or not) with other actors in order to foster professional development, and institutionalisation (to achieve the overall objectives of the project). The case studies also probe causal mechanisms that enabled or constrained the achievement of the set objectives in each case. The subsequent critical review of the two cases provides insights and hopefully a balanced perspective of the concept of networking (Sefike & Le Roux, 2004). Sefike and Le Roux (2004) postulate that by examining the trends in similar and related circumstances, one could gain a balanced perspective of the core issue of the research that adds value to the study and emerging pronouncements. Reviewing literature from international regional groupings such as the European Commission provided foregrounding for further data analysis in this research (Nhamo, 2005a). Further, the European perspective adds vigour to data analysis and interpretation as it relates to the critical realist philosophy of reality existing outside the human consciousness or experience (Archer, 1982; Sayer, 2000; Archer, 2003).

The chapter starts with a general perspective on the European education network contexts. This is followed by a detailed description of two international case studies i.e. SEEPS and ENSI. SEEPS is mainly a European network that has been financially supported by the European Commission through the Comenius network. It provides a good example of how networks grow from country-based to regional initiatives. On the

other hand ENSI has been running for 20 years (since 1986) as an International Network covering mainly European countries, Australia and Canada. Of importance to this study is its long history in networking, first as a sponsored network and eventually as an independent network. ENSI provides insights into the issues of sustainability of previously sponsored projects. In the last part of this chapter I draw some critical perspectives on the two case studies aimed at laying a foundation of what this study can learn from the two case studies. I need to mention that the two case studies could have been produced in far more depth with a longer period of research and further access to more detailed data. However, the two networks were not the major focus of the research, but were meant only to foreground concepts and issues for interpreting the CDN.

5.2 BACKGROUND TO NETWORKING IN THE EUROPEAN EDUCATION SPHERE

The growing consensus around the need for sustainable change in the education system has given rise to the search for strategies that value professional expertise, that appear to offer opportunities for achieving this change (Jackson, 2004). One such strategy has been the formation of networks of educators who come together to share common aspirations and experiences to improve the education system. These networks exist between schools, within a country or continental sub-regions. For example, the emergence of the 'European education system' is attributed to the development of integration processes based on the flexible and effective use of networks. Hoube' (1998) notes that within the European education system, networks are based on the principle of free cooperation between participants across the European countries. She reports that there are over 5000 higher education centres and more than 11 million students, and that structures of the university type have been the first concerned with and involved in the building of connections through networks. Two networks on education under the SOCRATES programme concerned with this study are the ERASMUS²⁸ and COMENIUS²⁹. Through

²⁸ ERASMUS is an education programme under the European commission devoted to higher education

these programmes, networks act as the cooperation and partnership support process upon which the European education system is being built (Hoube', 1998). In the quest to develop the European education sphere, networks are viewed as a privileged instrument for creating a stable nucleus of partners by enabling the free exchange of ideas, knowledge and skills.

5.2.1 Guiding principles in European education policy

According to Hoube' (1998:153-156) European education policy is based on the use of networks centred around four main guiding principles: the development of mobility; the demand for quality; professional integration and the learning of citizenship.

1. The development of mobility – The primary function of networks is to set up mobility as well as structure and manage it. Mobility is twofold i.e. 1) the physical mobility of students, teachers, researchers and personnel and 2) virtual mobility through which those who cannot be physically mobile will access the outputs of the network. Mobility means widening the range of available training courses. It further reduces the margins between supply and demand as it highlights various reciprocities and partnerships. Mobility also ensures the organised transfer, via the support of networks, of pedagogical innovations in terms of products and methods, and the transfer of knowledge and know-how.

2. The demand for quality – Networks act as catalysts for the creation and use of knowledge on a large scale and allow for improvements in the methods and products offered by collaborating centres and the building of an interdisciplinary base on the other hand. One of the biggest educational challenges faced by the European Union is to find a permanent system for quality assessment which will make use of both the European methodological tools and of the stimulus of European cooperation. Such assessments must provide information regarding strengths and weakness, and promote debates within

²⁹ COMENIUS is an education programme concerned with primary and secondary school education in the European Commission context. SOCRATES, ERASMUS and COMENIUS are not acronyms but names of programmes.

each institution, leading to better results and to adjusting products according to the economic, social and cultural environment.

3. Professional integration – Professional integration is closely linked to quality of education. It is one of the main challenges to be taken up by national education systems so as to satisfy the needs of a globalised economy on the one hand and those of social integration and cohesion on the other hand. In the European programmes professional integration is evident in the emphasis placed on the development of continued education, apprenticeship, language learning, open and distance education or on the development of more efficient ties between the business world and education and training centres.

4. Learning citizenship – Education plays an important role in the dynamics of identity in a multicultural Europe. Within this framework, the European community has endowed education with a political role upon which the development and progress of Europe relies. For this reason, education is envisaged to play a strong part in the learning of citizenship i.e. European cooperation in the field of education aims to contribute to the formation of a European citizenship based on shared values of solidarity, democracy, equal opportunity and mutual respect.

The above guiding principles upon which the networks are used in the European education context are significant to the CDN and this study in particular. The study draws on these principles to examine the southern Africa network (see section 9.3). The fourth principle, though not particularly related to the CDN, opens another dimension of networking which is rarely overtly taken into consideration by those wishing to run networks – the political aspect of networks and networking.

In the context of the United Kingdom's National College for School Leadership, it is argued that it is only possible for schools to find solutions to their problems if they work in partnerships, both with partners and service providers (See Leadbeater cited in Holmes, 2004). Holmes (2004) further observes that networks of schools have the added potential for creating effective practice at the micro-level and for joint problem solving.

Braaksma et al. (2003) explore networks as support structure for quality development in education by analysing (a number of education networks in Austria, Belgium, Greek, Hungary, Netherlands and Switzerland to establish) how the networks can support school development processes and improve the pedagogical process. This approach resonates with this study which researches the CDN and explores how networking can support professional development and institutionalisation of environmental education courses.

The section that follows examines two European case studies - SEEPS and ENSI. By means of sociology of translation which forms the core element of ANT (see section 3.4.2), the section reviews how networks evolved, how actors become enrolled (or not) with other actors in attempts to foster professional development and capacity building in environmental education. The section also probes causal mechanisms that may enable or constrain networking and professional development in Communities of Practice such as SEEPS and ENSI.

5.3 CASE STUDY 1: SEEPS

5.3.1 Introduction

The Sustainability Education for European Primary Schools (SEEPS) project emerged out of a local Scottish initiative – Learning for Life Group in 1996. The actual support for the establishment of the project came from various stakeholders both in and outside Scotland. These were both teachers and non-teachers. SEEPS, therefore, can be said to have grown out of the activities of the Learning for Life Group³⁰. The original agenda of the Learning for Life Group was to explore ways in which teacher education could respond to the Learning for Life strategy which had just been published in Scotland at the time. An environmental education module for initial teacher education funded by Scottish Natural Heritage and six teacher education organizations in Scotland became the

³⁰ The Learning for Life Group was a formally constituted group that consisted of all the initial teacher education HE institutions, Scottish Natural Heritage and the Scottish Office Education Department.

organizing framework which led to the SEEPS initiative. Through consultations, the environmental education module was revised, improved upon and released for use in initial teacher education in Scotland. The Learning for Life Group, on the advice of the late Professor John Smyth who chaired the group that produced the Learning for Life Report, recommended that an application be made to Directorate General XI of the European Commission for funding to develop the Learning for Life Group environmental education module further as a resource for continuing professional development. The first application was unsuccessful because it consisted almost exclusively of Scottish teacher education institutions. A second application which showed representation from other European countries was successful and culminated in the formation of SEEPS.

5.3.2 Evolution of SEEPS

The next section discusses how SEEPS evolved. The interpretation and redescription (see Danermark et al., 2002) of the CDN is done by means of the moments of translations namely problematisation, interessement, enrolment and mobilisation (see details in chapter 3, section 3.4.2).

Problematisation

As discussed in the introduction, SEEPS grew out of a local Scottish initiative – Learning for Life Group in 1996. In trying to establish the project as a network that took a European dimension (which was one of the funding conditions from the European Commission), the key actors had to structure their proposal so that it met the demands of the funding agency. They sought partnerships from Austria, England, Northern Ireland, Slovenia, Scotland, Sweden, Poland and Portugal. All in all, SEEPS was developed by educationalists from 13 European countries, including educators in higher education institutions, teacher educators, inspectors and advisors from ministries and boards of education, education officers from non-governmental organisations (NGOs) and teachers. This range of experience is said to have provided diverse professional, cultural, geographical and contextual perspectives on education for sustainable development and Continuing Professional Development (CPD) (Shallcross et al., 006).

Changing or rather adapting the proposal to meet the interests of the European Commission provides a good example of how funding agencies are able to determine the course of projects. More often, projects have to structure their activities and composition to meet the demands of the funding agencies. Tony Shallcross, the project coordinator and one of the key founder members of SEEPS project, observes that one of the issues of European Commission funding is, to a certain degree, like playing a game in which the Commission sets up some conditions and foci for funding such as gender equity or strengthening the European dimension. He explains that in such cases part of the objectives at the proposal stage is to ensure that certain targets that the Commission wants are met (Shallcross, 2004).

As to whether or not SEEPS deviated from its initial objectives in trying to meet the demands of the funding agency he argues thus:

My interpretation was that the project did not deviate from its original objectives because of funding agency demands; rather features were added to these objectives to make the project more attractive to the funding agency. Any changes to the project such as the removal of one unit title from the project in phase three and the addition of another were in response to internal concerns rather than funding agency demands (Interviewee #19).

Another member of SEEPS observes that "... an essential skill of a project co-ordinator is that of identifying what is the 'current fashion' at the funding agency and writing the proposal in a way that addresses this 'fashion' ..." (interviewee #25). Interviewee #25 notes that despite the fact that SEEPS focused on In-Service Education and Training (INSET) with environmental education in mind, it became clear that the only way environmental education could establish itself in schools was through the whole school development approach. This coincided with the European Commission's favour towards Continuing Professional Development (CPD) programmes. SEEPS had to expand its original materials pack and restructure some previous topics accordingly. In short SEEPS had to adapt its materials and focus to adapt to funding agency demands. One member argues that SEEPS had to reformulate its materials in a way that they improve "... saleability of the project to the Commission" (Interviewee #25).

In its final conceptualisation and shaped by the contextual profiling undertaken prior to the start of the project which showed schools and project developers' commitment to the concept of whole school development (Shallcross et al., 2006), SEEPS was set up as a CPD project designed to assist teachers to develop their schools by promoting whole school approaches through education for sustainable development (Figure 5.1).

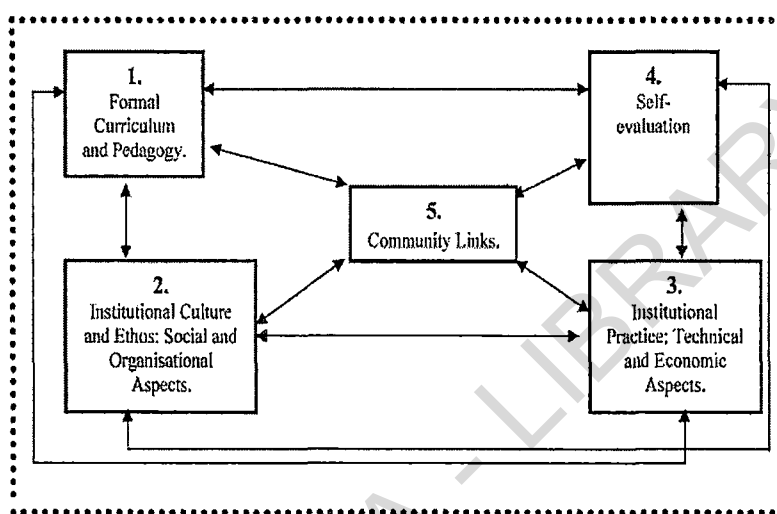


Figure 5.1. The five strands of a whole school approach to environmental education (source: Shallcross et al., 2006)

The project promoted a school focused approach to CPD by providing teachers with the support materials to help to develop CPD programmes in and for their own schools, after a member of staff has been trained in the use of the SEEPS materials. SEEPS is founded on a number of broadly liberal assumptions about education for sustainable development, whole school approaches, ideologies of pupils and teachers and CPD (Shallcross et al., 2006).

From the literature review, interviews, document analysis and collaboration with selected members of the network who commented on the initial draft copy of this case study, the overall aim of the project was established to be the enhancement of INSET support for whole school approaches to sustainability education (SE). Table 5.1 provides the specific objectives of the project which addressed COMENIUS priorities, the basis upon which the project was funded.

Table 5.1 **A summary of SEEPS specific objectives**

- To review the extent to which different priorities and approaches to practical environmental management, institutional change and self-evaluation are evident in a sample of European countries;
- To produce new and revise existing SEEPS materials and to evaluate and disseminate these;
- To adapt the materials produced for objective 2 to support initial teacher education (ITE) and the postgraduate individual professional development of teachers by adding these materials, with a revised study guide, to the educating for sustainable futures website;
- To develop the European dimension and equal opportunities in schools and teacher education;
- To share European postgraduate qualifications in ESD;
- To develop collaboration and co-operation between project partners and schools in the education of teachers, through the exchange of information and experience;
- To develop a collaborative and critically constructive approach to project development which will maximize the contribution to the project of those working in English as a second language.
- To develop a COMENIUS 3 network based around school development in ESD.³¹

Source: SEEPS final report, 2004.

Drawing on the work of the Learning for Life Group and in a bid to meet the demands of COMENIUS for funding purposes, key actors of the SEEPS with the support of the eventual project director started the process of identifying natural actors who would be interested in being part of the Network. They were equipped with the initial Learning for Life Group initial teacher education environmental education module. This was used for consultations, promotion and building partnerships. The module was used as a marketing tool for the SEEPS project.

Interessement

Materials produced in the process of project implementation were used by teachers to develop in-service education programmes in their own schools. As part of the CPD course, participants conducted in-service education and training (INSET) that was based on the 'training the trainers' model which was supported by the project materials. This was based on the following assumption:

³¹ There were two existing COMENIUS networks in the field of ESD and environmental education. Members of SEEPS decided to open discussions with members of these networks to use their existing networks to disseminate the project and forge stronger European links in ESD.

The most effective SE (sustainability education) occurs in the schools that promote and maintain sustainable practices through the participation of pupils in collaborative school cultures. What matters is process; how we educate, if we want education to contribute to the development of active global citizens who will practise sustainable lifestyles. (<http://www.education.ed.ac.uk/esf/project-info/index.html>).

Through the process of collaborative consultation, the initial teacher education module formed the platform for the development of a school-focused professional development resource, which would address whole school approaches through continued professional development. The professional development model adopted in the network focused on the fusion between three dimensions of knowledge. These are: theoretical (substantive knowledge); conceptual (case study knowledge) and personal (experience knowledge). The first two tended to be addressed through the resources provided in SEEPS. The activities in the project required teachers and trainees to address theory and context through the filter of their personal experience. Teachers using the materials reflect on these three dimensions of knowledge in the context of their institutions. This process interested a number of people in the project as is evident in the comment "... the project partners had different institutional contexts but we all shared the same interests in the approach suggested by the project ..." (Interviewee #25).

Enrolment

In order to meet its funding demands, one of the early tasks of the key actors of the project was to forge partnerships and alliances with other educators across Europe as explained earlier. Since the European Commission required a project to be funded under the COMENIUS programme to have a minimum of three partners drawn from different European countries or European Union associate countries, SEEPS key actors had to 'sell' the project idea and enroll people from other countries who were willing to participate in the network.

Conventional wisdom in networking or project development processes would have expected the SEEPS project to carry out a baseline study, to identify those who were willing to participate in the network. Instead, SEEPS enrolment was mainly through

personal connections. Learning for Life Group members who were the pioneers of the SEEPS Project carried out a head hunt for suitable members. A SEEPS member notes that this approach was the best considering the prevailing circumstances and funding demands:

Although it is possible to change membership of a project, members have to be identified at the application stage. Thus any baseline survey would have to be organized by the proposed coordinating partner independently and unfunded. [In the light of this] This said and given the tight bureaucratic framework in which these projects operate, and the risks of non-delivery from partners with whom you may be unfamiliar, I would still support the more 'personal' strategy outlined here (Interviewee #19).

Though it was not clear from the project documentation, there seems to have been no set criteria for the enrolment process. However, one project member who had an opportunity to read the first draft of this case study clarifies the assumption that there were no set criteria in the selection process:

This may appear to be the case from the project documentation because this is an area that the project documentation did not require a report about. However there were very clear criteria used in the selection process, firstly an interest in and experience in EE in teacher education, secondly an interest in whole school development as a vehicle for SE, thirdly a reasonable proficiency in English, fourthly an ability to work in a collaborative team, fifthly reliability in meeting deadlines at the right qualitative level, these are what I would refer to as the personal criteria. In addition there were project level criteria, a geographical balance of countries, representation of HE [Higher Education], NGOs and ministries or departments of education, some degree of gender balance and representation of some minority languages (Interviewee #25).

Some members of SEEPS argue that although 'head hunting' could be attributed to the success of the enrolment process, the basic contributing factor of success was that partners could work together and they had an interest in the environmental education and were reliable in delivering tasks set (P. Pace, personal communication, January 29, 2006). Pace (2006) observes that at times a project can have a team made up of very competent people but whose interpersonal skills are not well developed, and a project that is built on a foundation of participation, collaboration and team work may fail.

Mobilisation

Although the enrolment phase generally went well, there were a few organisational challenges in situations where the enrolled members withdrew their membership. It

meant that a new member had to be found as a replacement since most of the work was done in small groups. This led to situations where new members entered the project half way through and they had to learn the culture of the network. For example, when one member withdrew in phase 3 and her organisation could not find a replacement, Finland had to become a member of the network. Generally the 14 European countries that made up the network were mobilized at different times. Members joined the SEEPS at different phases. Some countries were represented by different organisations in different phases of the project. All these posed problems of maintaining the stability of the network and enhancing the process of shared meaning of the intent and practice of the network (Shallcross et al., 2006). The project final report provides a good example of the instability of the project and the need for continuous mobilisation from the following quotation:

The Malmo Hogskola had to withdraw from the project because of health problems in the immediate family of their nominated representative. The University of Joensuu, Savonlinna Department of Teacher Education in Finland replaced the Malmo Hogskola (SEEPS, 2004).

5.3.3 Organisation and management

In terms of organization and management, the structure of the network can be clarified by Urry (2003) and Eade's (1997) models of networks (see section 2.9.1). Urry's star or hub, and Eade's spiders' web networks, illustrate some form of central coordination. In this case, Manchester Metropolitan University (MMU) provided the coordination role. The university oversaw the day to day running of the project in terms of administration such as financial management, coordination of funds for the translation processes of materials into languages other than English. It also handled the publishing side of the project. This was in line with the COMENIUS regulations, which require that one member of the partnership coordinates, the project. So there was centralised control of the budget that seemed essential given the Commission's stringent financial control and auditing measures.

Pace (personal communication, January 29, 2006) notes that having one partner coordinating the project ensured that the focus on the project's objectives was maintained throughout. It is also said to have provided other partners with 'on-the-spot' help on administrative issues that SEEPS had to deal with (Interviewee #24). Pace (personal communication, January 29, 2006) points out that one possible disadvantage of this approach could have been overloading the coordinator with work which might have kept him away from engaging in project work other than administration.

The general working framework was that network members worked in two groups to develop materials on leadership and management of change and on school self-evaluation. Each sub-group had a coordinator who reported the progress and output of the group to the project director at MMU. Sub-group coordinators were selected on the basis of their proficiency in English, geographical proximity in case of the need for an emergency meeting and their willingness to do the job. This meant that in phases 1 and 2, three coordinators were from Scotland and one from England, in phase 3 one was from England and one from the Netherlands. In phases 1 and 2 Tony Shallcross from MMU acted as both project director and sub-group coordinator.

5.3.4 Networking focus

As a starting point for the resource development process, network partners shared their own stories of how they taught environmental education in their countries in the first meeting. Through the process that followed they produced a resource – a school-focused model of professional development. The network encouraged and supported teachers' workshops on how to use the resource in the member countries. The group came up with a four unit strategy for the project.

For working purposes, the network was divided into four groups. The division of participants was determined by the following aspects: geographical location, gender, and competences spread across all the four groups. The four groups met individually to plan what would be included in the particular unit they were working on as well as decide the

working strategies. In a plenary meeting, after six months, all the groups came together to share their final versions of their units.

It was envisaged that working in two small groups during network meetings maximized the contribution from everyone, especially for those whom English was not a first language:

Working in two small groups during network meetings maximized the contributions from those partners for whom English is not a first language. The sub-group coordinators were aware of the need to involve all their sub-group members in these discussions. The project Director contributed to and monitored discussions in both groups. During their separate meetings each sub-group developed action plans and evaluated, moderated and modified materials. Between network meetings, sub-groups communicated by e-mails (SEEPS 2004:1-2).

Materials production followed a participatory process in which drafts were piloted in schools as a way of extending participation checks for accuracy and factual representations in the different contexts. The project advocated inclusive, holistic pedagogies based on whole school development approaches to ES. The main pedagogical approach to the project development was collaborative and based on critical social constructivism (SEEPS, 2004). According to the final report (SEEPS, 2004), the INSET was based on a train the trainers' model supported by the project materials. While the project website placed emphasis on individual learning, it contained activities that promoted group learning and constructivist pedagogy. The project employed a synergistic pedagogy that aims to synthesise theory, models and principles with practical case studies and personal experience. The report further notes that the pedagogical approach advocated in schools was based on active learning through participatory approaches to transformatory education within the ethos that promoted collaborative school cultures (SEEPS, 2004).

5.3.5 Project outputs

The project is said to have established several innovations. For example, it established a continuum in ESD from Initial Teacher Education (ITE) through postgraduate study to school focused INSET. It has also promoted socially and environmentally secure schools

through its advocacy of whole school approaches to ESD. It also developed collective evaluative action research techniques and strategies to enable schools to analyse their own needs and monitor and review their own progress through the involvement of pupils and teachers as researchers. The project final report records the following as the outputs of SEEPS (SEEPS, 2004:3):

1. The CDROM which has been very well received by those who have seen it both for its content and production style;
2. The website which was at one stage the second most popular on the Edinburgh University server and has attracted 40 000 hits during the life of the project.;
3. Video vignettes that have been included on the CD and will be included on the website to support the case studies in the project;
4. Course materials have been adopted for ITE (Initial Teacher Education) teacher and school manager courses across Europe;
5. Reports for bulletins and EE association publications;
6. Conference, journal papers, chapters in books and possibly two books linked to the project;
7. A self-funded ethnographic research project involving most of the partners that will be ongoing in 2004 and provide materials for a book.

5.4 CASE STUDY 2: ENSI

5.4.1 Introduction

The Environment and School Initiatives (ENSI) group was formed in 1986 under the aegis of the Organisation for Economic and Cooperative Development - Centre for Educational Research and Innovation (OECD-CERI)³². OECD is a forum where the governments of 30 market economies work together to address the economic, social and governance challenges of globalization as well as to exploit its opportunities. The organisation provides opportunities where governments compare policy experiences, seek answers to common problems, identify good practice and co-ordinate domestic and international policies (OECD, 2005). The organisation is structured according to the following directorates: development; economics; education; employment and social cohesion; food and agriculture and fisheries; entrepreneurship and local development; and energy among others. The Directorate of Education supports member countries to

³² In 2004 ENSI became independent of OECD. It was no longer a project of OECD and has since depended on member countries' contributions for running costs.

achieve high-quality learning that is envisaged to contribute to personal development, sustainable economic growth and social cohesion.

In its early years, ENSI was predominantly made up of members from the Western European countries who were concerned about environmental developments and environmental education in their individual countries. The network now includes members from outside Western Europe such as Australia, North America and Asia Pacific. It brings together school initiatives, school authorities, teacher training and educational research institutions and other stakeholders in countries primarily across the OECD area (Europe, Asia-Pacific and North America). ENSI's main partners are pilot schools with teachers and pupils, researchers, teacher educators and their students, and governments wishing to improve their national environmental education policy. In practical terms, ENSI is a learning organisation whose approach is based on a systematic reflection on practice and well-researched learning processes. It views school as the sites for learning that ultimately influence their communities in creating sustainable communities.

5.4.2 Evolution of ENSI

Problematisation

ENSI started as a school-based project and was pioneered by Peter Posch from Austria (who developed the proposal) and John Elliot from the University of East Anglia in the UK. Peter Posch is said to have conceptualised the view of professional development in environmental education (Interviewee #17). He was also influential in shaping the study guide for curriculum development. Being a former representative for Austria in OECD CERI, he understood the structure of OECD and so "... he knew how to come in with new ideas, how to bring in a new project ... he was encouraged to bring special ideas into this innovation ..." recalls one member (Interviewee #17). On the other hand, John Elliot is said to have been influential in conceptualizing the process of professional development in ENSI. Basically the two are said to have been behind the conceptualization of ENSI as a project. This claim is supported by the fact that Peter Posch developed a project proposal entitled "Conceptual sketch on environmental

education” Adolf Heinz Malinsky’s keynote paper *Economy – Ecology* formed the basis for ENSI project proposal of the Austrian Federal Ministry of Education to OECD in January 1985 (G. Pfaffenwimmer, personal communication, April 26, 2006). It seems like most of the initial activities were done in Austria between academics and Ministry of Education officials. For example the initial proposal for the ENSI was developed and submitted to the OECD CERI governing board by the Austrian Authorities. The proposal read in part:

The Austrian Authorities, after initial consultation with a number of Member countries, have proposed the inclusion of a co-operative project on Environment and School Initiatives under the Innovation Exchange activities of the CERI programme. Strong Austrian interest in this issue was expressed by the Austrian Ministry at the November 1985 meeting of the Education Committee at ministerial level and it was included in the areas calling for further work agreed upon by the Ministers (Republic of Austria, 1986).

Although ENSI is perceived as a European network, given the number of European countries involved, it is argued that Australia also played a key role in the formulation and functioning of ENSI (Interviewee #23). There were a number of key actors from Australia who played pivotal roles in the growth of ENSI. Notable among these is Ian Robottom who is said to have played a critical role in grounding ENSI’s thinking about professional development for teachers in environmental education (Interviewees #23 and #5). It is further argued that his focus on action research enhanced some of the ideas which Peter Posch and others brought to the network. Other key Australian actors who influenced ENSI’s agenda include Kim Walker who promoted the concept of projects for ENSI and Syd Smith who works in Sustainable Schools, was very instrumental in shaping the learnerscapes programme at ENSI. The list of key actors from Australia includes others and proves the point that the Australians (just like their European counterparts) played an influential role since ENSI started. It must be noted, however, that Australia was only actively involved in the project in the second phase of implementation (see Table 5.2 below).

The general aim of the project is the promotion of environmental awareness and the promotion of dynamic qualities such as initiative, autonomy and individual responsibility. This was driven by the understanding that the environment offers a unique context for

achieving a broader and more integrated development of human creativity, initiative and organisational skills and qualities that will be indispensable prerequisites for achieving a sustainable society (Smith, 2004). The operational aims of ENSI include the following:

- Create stable learning networks, which link schools, families, community and workplaces;
- Generate local knowledge and meaningful discourses concerning sustainable development to meet personal, social and economic needs within communities; and
- Foster the democratic participation of students as active citizens in shaping the environmental conditions of their life and work (Smith, 2004:3-4).

Smith (2004) observes that ENSI has adopted a number of principles for procedure in a number of areas. These include: teaching and learning areas, area of school-community relations, and using research as an integral part of development as exemplified in Table 5.2.

Table 5.2 Principles and focal areas for ENSI

<p>In teaching and learning areas, ENSI endorses:</p> <ul style="list-style-type: none"> • students increasing their control in determining the nature and content of their learning experiences, • the shift from authority based to negotiated experiences, • the use of content (knowledge or ideas) as resources for reflecting about personal experiences of the environment and for undertaking intelligent and responsible action towards it, and • the shift from institutionally based monitoring / assessment of learning experiences to personal self-monitoring or assessment on reflection and feedback from the community. <p>In the area of school–community relations, ENSI supports the:</p> <ul style="list-style-type: none"> • shift away from the classroom as a learning site towards the community as learning site, • use of the school as a learning resource for the community, and the community as a learning resource for the school, • development of a flexible and dynamic curriculum for all students which focuses on sustainable development in the local environment, and is responsive both to the need for students to make sense of their personal experience in the world outside school and to the social and economic needs being voiced within the local community. <p>In using research as an integral part of development, ENSI:</p> <ul style="list-style-type: none"> • treats development activities as experiments to be tested through gathering the perspectives of a range and variety of participants involved in the development process within the community (comprising students, teachers, parents, community representatives, employers), • addresses research questions initiated by the parties involved in the development process, • involves the participants in constructing public accounts of their work at the local level, • constructs reflective accounts of the development process as it operates, metaphorically, in the swampy lowlands and which refrains from adopting a helicopter perspective, and • participates in the production of comparative studies of the development process in different local and national contexts, as a means of stimulating public debate.
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Source: Adapted from Smith (2004:4)

ENSI's activities include:

- Fostering action research and external evaluation of projects;
- Sharing research and school development strategies and tools;
- Disseminating approved results from research and implementation;
- Organising international workshops, seminars and conferences; and
- Distributing case studies, evaluation reports and publications.

The above activities are achieved through a number of projects such as Eco-Schools, Learnsapes, Teacher Education, Mainstreaming Environmental Education in National Education Systems, and Quality Criteria for Eco-School development. Beyond the school development and professional development, ENSI influences member government agencies in the development and implementation of environmental education policies by developing links between research groups and school authorities.

Historically, ENSI has moved from being a project under the OCED-CERI to an independent network forming a number of alliances and coalitions with international organisations. Despite the challenges of transforming from being a sponsored project to an 'Independent Project', ENSI did not deviate from its objectives and principles but had to establish its own secretariat which now rotates amongst members. Table 5.3 provides an overview of the how the network has evolved.

Table 5.3 Timeline of the evolution of ENSI (1985 – 2006).

1985	Prof. Peter Posch and colleagues at the Austrian Ministry of Education develop a proposal and submit it to the OCED/CERI governing board. It is accepted as an Innovative Exchange Programme.
1986	First phase of ENSI. The network has 12 members from OECD countries; Austria, Belgium, Germany, Italy, Denmark, Sweden, Norway, Finland, Portugal, Switzerland, Netherlands, Canada and Britain. OECD/CERI provided the secretariat and hub of the network.
1988	End of phase 1. The end is punctuated with a huge conference in Austria.
1989	CERI governing body defines ENSI as a full project for the period 1989 to 1994. Other OECD countries join. They include: Australia; USA; Japan; France; Ireland; Northern Ireland; Scotland; Hungary; Slovenia; and Spain.
1994	ENSI ends as a project under CERI. Members agreed to run ENSI as an independent network under the OECD/CERI. CERI ceased to be the hub and providing the secretariat function. Some members leave ENSI. These include: Canada; England; Ireland; Northern Ireland, France, Spain and Australia.

1995	Country coordinators convene in Vienna/Austria and define the focus of the network as: teacher education; eco-schools; quality indicators, and networking. Scotland became the first ENSI secretariat outside CERI support. Scotland organises one country coordinators' meeting per year and a membership is decided upon.
1997	Australia rejoins ENSI.
1998	Austria takes over the secretariat (1988-2002).
1999	CERI invites ENSI to be part of the CERI project "Schooling for Tomorrow." During an international conference in Austria ENSI country coordinators elect a president and executive committee following the suggestions of the CERI representatives. A constitution, membership structure, annual reporting, and clear process of developing internal projects and the building up of the ENSI website are discussed and adopted.
2001	Tom Alexander, director of CERI encourages ENSI to seek partners beyond the OECD. ENSI decide to develop a "Thematic network project" in the European Union Comenius 3 scheme.
2002	The thematic network project proposal leads to the formation of the SEED project 2002 -2005 (see www.seed-eu.net). This leads to stable working conditions in Korea, New Zealand and Canada.
2002	Germany becomes the secretariat.
2004	Switzerland takes over the secretariat. OECD/CERI ceases playing its umbrella function for ENSI. ENSI seeks UNESCO patronage and it is welcomed by the UNESCO Director General Matsuura.
2005	ENSI becomes a partner of UNECE and UNEP/Carpathian convention.

Source: Developed from E-mail communication with Günther Franz Pfaffenwimmer, the current President of ENSI (Pfaffenwimmer, 2006)

Interessement

Since 1986 ENSI has promoted international research and innovation in environmental education. It has also introduced active approaches to teaching and learning. With the dawn of the United Nations Decade of Education for Sustainable Development in 2005, ENSI also undertook to promote sustainable development in schools and their communities. Currently ENSI has a membership of 25 countries. These include: Austria, Australia, Belgium, Canada, Denmark, Finland, France, Germany, Hungary, Ireland, Italy, Japan, Luxembourg, Mexico, Netherlands, New Zealand, Northern Ireland, Norway, Portugal, Scotland, Slovenia, Spain, Sweden, Switzerland and USA. Each of these member countries is represented by a national coordinator and a pedagogical research expert who work closely with a network of schools. As an independent membership organisation, member countries pay annual subscription fees that supplement the running of the secretariat.

As stated in the introduction, the main concern of member countries was the environmental concerns in member countries. Country representatives are said to have

been very worried about environmental developments in their countries and about environmental education. To a larger extent ENSI representatives were motivated by personal interests and their own backgrounds in environmental education. Their personal interests, national concerns and professional backgrounds influenced their willingness to work with others in the ENSI network as exemplified by the following interview excerpts:

... I have been involved in environmental education for most of my professional life and my teaching and research interest is in that field. In particular, I have research interest [that lies] between research and environmental education. And my involvement in ENSI, the project ENSI is really reflective ... it focuses on an explicit position on the relationship between environmental education on one hand and educational research on the other and it has taken a deliberative position on the relationship by overtly choosing to adopt an action research perspective, so I have gained a lot from being involved in the ENSI network over a number of years. And as I said, just to conclude for me being in the project really is reflective of a lot of my professional interest in the field (Interviewee #17).

I have always been interested in the ENSI process; I remember reading a book by John Elliot and Peter Posch, it was published in about 1991. And the thing that intrigued me was the use of case studies and the involvement of participants in writing those cases as an evaluation part of the process and also the process of having teachers come together in conferences and reflect on their experiences with colleagues. That to me is the action research part of the whole ENSI process. Then, I guess what intrigued me were the actual stories that teachers have to tell about their experiences rather than, as I said this morning, the measurement side of attempting to assess environmental education ... I have been invited, because of my interest I guess, to attend certain conferences and participate ... I have been professionally involved solidly in environmental education for 25 years now - as a graduate student and undergraduate student. I saw it [ENSI] in line with my interest (Interviewee #5).

I started very early with environmental education when I was a teacher, biology teacher, that was around 1970 - 72. Looking back now, I think that I have worked within action research approach in that time in my own teaching in environmental education, ecology education we called it then - not knowing anything about this action research approach but I used it in a way because I was interested in reflexive practice because I wanted to find out what was going on in my class, what I could do with environmental education and so on (Interviewee #15).

In a sense, members were driven by the desire to work with others in similar circumstances or of similar professional standing. They wanted to avoid working in a void in their own countries. Members find it valuable to discuss, reflect, debate (with others) on some of the core issues that they were working on at an individual level. Through the network, they have been able to work on common research projects and

identify priority areas that would respond to their environmental and pedagogical needs in their own countries. Professionals have been interested in international involvements and sharing of experiences with others from different countries.

Enrolment

It is clear from the interviews, personal communications via email and documentary review that governments of participating countries played an important role in the recruitment process of ENSI members at a higher level. In some instances members nominated by national governments were seen as representatives of the nominating countries on ENSI. One member recalls how she was recruited: "... from the federal office I was asked to join this ENSI project" (Interviewee #15). She recalls that she was just told that the federal government had an invitation from OECD to nominate one person to attend an ENSI meeting which was taking place in Paris. "... I went to Paris to just understand what they were talking about. And it went on quite well ..." (Interviewee #15).

Another member explains how the governments were involved in the recruitment process: "... each country had a government representative on the OECD which provided channels to appointing the various country representatives ..." (Interviewee #17). It seems that at the time ENSI was fully supported by OECD, governments set the process of recruitment since each country had a representative on the OECD.

However, Pfaffenwimmer (personal communication, April 26, 2006) observes that it proved difficult to engage governments to become members of ENSI. He also points out that formal approaches to governments do not do as well as expected. He explains that government/administrations need to have committed persons who see the benefit for their work and then promote and support ENSI. He further notes that the main chance to develop co-operation that led to membership in many cases was through personal contacts and cooperation around concrete projects. He observes that as far as government involvement in the enrolments were concerned, Australia was doing well. This was echoed by Tilbury (personal communication, June 29, 2006) who notes that Australian

representatives to ENSI are selected through a ministerial committee which brings ministers from across the states in Australia. Smith (personal communication, September 11, 2006) explains the process:

In Australia the conference of directors-general or the senior executive in each State and Territory Education Department nominate a government employed senior officer to represent the nation at ENSI. Usually states and territories take turns in nominating a representative. For example from 1988 to 1997 the state of Victoria nominated the Australian ENSI representative and from 1998 to 1993 it was New South Wales. A Queensland officer is the current representative for Australia. The pedagogic representative is usually selected from the same state as well. This is usually proposed by the systems representative and approved by the conference of directors-general and senior executives in Education Departments. At present Australia has a Queensland systems representative and a New South Wales pedagogic representative. The nominated systems representative liaises with all the other states and territories and arranges for the payment of the country's annual subscription fee to ENSI (Interviewee #26).

Other evidence of government involvement in the recruitment of members can be found in this excerpt from the minutes of the AGM of 2004:

Mr. Syd Smith will retire and thus will neither be available for the position of the treasurer nor as the country coordinator. Thus the Government of the State of Queensland has appointed Mr. Cameron Mackenzie as the new country co-coordinator for Australia within the ENSI Network (ENSI/SEED, 2004).

With ENSI becoming an independent network, the recruitment process through government mechanism must have been affected and so recruitment became more vigorous and new ways of enrolling new members evolved. The minutes of the Annual General Meeting of March 2004 indicates that ENSI Secretariat was on a recruitment drive whose focus was the expansion of ENSI's contacts and membership (ENSI/SEED, 2004). The meeting heard that a letter with a detailed description of ENSI was prepared. This letter together with an invitation to join the AGM of 2004 was sent to ministries or departments of education primarily in non European Union regions and in European Union accession countries in order to establish contacts on a government-based level (ENSI/SEED, 2004). Apart from these formalised recruitment processes, interview data reveal that recruitment of new members became quite informal in some instances. ENSI members invited people they felt they could work with; those they knew shared the same interest in either environmental education and/or action research. Often these were met at

conferences and international meetings. Some members feel uncomfortable with this way of recruiting new members as expressed in this comment:

I think that maybe there is too much reliance on the individuals meeting people at the conferences and getting on well. It is all very informal and very charming but I think you need to have a much more structured and strategic approach to attract new members. We found, for example, with France. France wants to become a member again. And that is taking lot of strategic work, correspondence to host personal meetings in France. I think that is the way forward. We cannot rely on meeting somebody in a conference and saying oh yes, we will be grateful if our country was a member of ENSI and signing of a letter, sending off a letter. We must be much more active, proactive about it. We cannot expect it to happen through a letter and a little bit of a good will (Interviewee #2).

One member of the network, expressing a personal opinion thought that the problem of selection and enrolments has been marred with power struggles (though subtle) with regards to who is in charge in each country and who can make the decision to be involved in ENSI and who is the most appropriate person to be nominated. The member suggests that ENSI must continue to lift its global profile if it is to attract membership from countries without being asked (Interviewee #2).

Mobilisation

Although ENSI has existed for over 20 years, its existence as a network appears still to be unstable as members keep on withdrawing and rejoining as the case has been with Australia which withdrew its membership in 1994 only to rejoin in 1997 (see Table 5.3). France which also left the network in 1994, was at the time of this research applying to rejoin the network. It is also clear that instability at individual level is high, where some members' participation is not constant. To keep the members' interests in the network, the secretariat has been keeping personal contact as well as telephone and internet contact. The network meets twice a year – through an annual general meeting and an executive meeting. There are also a number of seminar and workshop meetings for individual groups within the network. Regular meetings are held to try and keep the network members on board. Although ENSI seems to operate much more at a distance due to the geographical location of its membership, the distance is covered by constant communication between members at individual level as well as through the secretariat.

On average and in more recent years, once every two weeks, the secretariat sends out a mailing that gives members an overview of what is happening in the network. Sometimes documents are sent to members for review and for their input. Through regular communication members are also kept abreast with the network activities.

Technologically, ENSI has been advancing and the mobilization of resources has kept it afloat. The current (2006) president of ENSI, Günther Franz Pfaffenwimmer, has been a member of the network for over 20 years. He recollects the technical advancements and notes that from 1986 to the early 1990s the network had only an electric typewriter, telephone and fax machine. It acquired a computer in 1994 and had e-mail connection around the same year. The network now has a website that provides a medium through which members are able to share their work. In order to facilitate this process all members are encouraged to upload their work on the ENSI website.

The website is also used for the purpose of sharing its outputs internationally and at the national level within the member countries. This will further keep members interested and provide a platform for information and knowledge exchange as expressed in the minutes of the Annual General Meeting of 2004:

ENSI website should provide a platform for member countries as a government based "Community of Practice" for research, development and innovation exchange in the field of environmental education and education for sustainable development (ENSI/SEED 2004).

In addition, ENSI runs an electronic newsletter, which has proved to be a good internal communication tool. The newsletter has been used to reach out to non-members. Used in this way it becomes a tool to mobilize more members and resources for the network.

5.4.3 Organisation and management

In terms of organization and management, the network structure can be explained by Urry's (2003) and Eade's (1997) models of networks (see section 2.9.1). Urry's star or hub, and Eade's spiders' web networks, illustrate some form of central coordination. In

the case of ENSI, the secretariat provides the coordination role. It oversees the day to day running of the project in terms of administration including financial management, coordination of funds and internal and external correspondence. The secretariat is headed by one person who is supported by the president, vice president and treasurer who form the core committee of the secretariat. They meet once a year to look at the management of the network. The committee acts as the governing structure of the network. The national coordinators also provide coordination roles in the member countries. All the internal and external communication with regard to ENSI activities passes through the secretariat. The head of the secretariat keeps the communication going by being in constant contact with the members during and between major meetings such as the AGM, the annual executive meeting, seminars and workshops. She also posts innovations on the network website with the help of a website designer. Other materials such as publications and documents are passed through the secretariat to the rest of the members.

One of the challenges of the secretariat, of course with the support of the executive committee, is to ensure that both old and new members feel valuable to the process. As a result of the long history of the network, some people have been members for over ten years while others have been members for less than two years. The challenge for the secretariat and executive committee is to find a niche that each of the members, old and new, can identify with and that links in with their motivation and commitment and ability to be active members.

5.4.4 Professional development

Professional development under ENSI is enabled through action research projects that members carry out in their own countries and as an international network. ENSI's professional development model is philosophically located strongly in teaching and sharing of case studies of individual members' experiences of working with ENSI ideas. The professional development approaches of ENSI emphasise the idea of a reflexive

practitioner, where members continuously reflect on their practice through action research as explained by one member:

ENSI is being distinguished by emphasis on that approach to professional development. The professional development that celebrates a reflexive practitioner which in turn is informed by the body of research which is known as action research ... Naturally research in environmental education is a different type of research, it is more than statistics based research called science experimental kind of research. By this ENSI was going against the grain, to the extent of when it gets back to the grain, by definition it was an innovation. So it was not a coincidence that it was located in the Centre of Education Research Innovation in OECD. It was an innovation, at least in part, by virtue of its distinctive professional development grounded in the idea of action research (Interviewee #17).

The Action Research approach to professional development allows a cross section of environmental education practitioners to get involved in ENSI. Teachers work with their schools and to some extent meet student teachers in the school context. Some members of ENSI work with the teacher education strand where they focus on teacher education with senior teachers and teacher educators. These, in many cases, also have their programmes with schools. The longevity of the ENSI network which spans two decades has helped it achieve legitimacy. As a result of being in existence for this long period of time, ENSI establishes a certain kind of legitimacy or credibility and authority in people's minds as a professional network.

5.4.5 Project outputs

ENSI provides a good example of an international network that has a long history of existence first as a sponsored project and later as an independent network. It has provided a number of benefits to individual members and at institutional level. In Australia ENSI has a lot of influence. It does not have the same high profile as it has in Europe but it has had a strong influence on developments in environmental education and ESD for example Eco-Schools have become the Australian Sustainable Schools Initiative which has been promoted successfully in all states and territories by the Australian Department of Environment and Heritage (S. Smith, personal communication, September 11, 2006).

I have been in ENSI since 1986 when I was invited (rather by chance) to become the Austrian ENSI country coordinator (I was a Biology teacher then). Over the years I learnt

a lot: Action research; team building; organising conferences etc. (G. Pfaffenwimmer, personal communication, April 26, 2006).

Pfaffenwimmer further notes that the main structure of ENSI in Austria is the teacher team as a working and advisory group to the Austrian Federal Ministry of Education. Professor Peter Posch is the scientific-pedagogical adviser.

5.5 LESSONS FOR THE CDN FROM THE TWO CASE STUDIES

In this section, I attempt to draw lessons from the two networks that could be significant to the overall research question of this study. The lessons are also meant to foreground ideas for recommendations in chapter 9. To abstract the lessons, I draw on the critical realist idea of causation and casual analysis (see chapter 3). Causation and causal analysis is conducted through a retroductive mode of inference analysis as introduced in chapter 4. My interest is to discover the underlying mechanisms that enabled or constrained SEEPS and ENSI to succeed as education networks. The analysis is done by means of realist questions as articulated by Sayer (see chapter 3). In particular, I respond to the question: *What are the underlying (contingent and necessary) mechanisms that enabled/constrained SEEPS and ENSI to succeed as education networks?* The discussions in response to this question are presented under two broad headings i.e. contingent (external) factors and necessary (internal) factors.

5.5.1 Contingent (external) factors

Both SEEPS and ENSI enjoyed government and institutional support and political will. Governments and institutions supported the two networks by allowing their citizens and staff members to participate in the activities of the two networks. Without government or institutional support, the two networks would not have realised the many outputs achieved and the impact they have had in the various countries.

Government support: ENSI seemed to have had a great influence on the institutionalisation of environmental education in, for example, Austria and Australia. This was only possible because the two governments created conducive atmospheres for

the network to realise its set objectives. The governments provided funding for its citizens to participate in educational projects such as ENSI. Further, the governments (especially the Austrian government) were involved in the initial conceptualisation of the project and the development of a funding proposal that was submitted to OECD-CERI. This support was a necessary condition which could have given credence to the application. Since each country had a representative on the OECD, it provided channels of appointing country national coordinators who were almost always a government person in nearly all the member countries.

In the case of Austria, the Ministry of Education has continued to support ENSI activities for over twenty years after the first proposal was approved. The founder members of ENSI (such as Peter Posch who is a pedagogical adviser in Austria) have continued to play key roles in the running of the network in their countries. This provides the institutional memory and help to steer the network through obstacles and challenges (such as loss of sponsorship from OECD-CERI).

In Australia, the involvement of a ministerial committee in the selection processes of ENSI representatives gives authority to the network. Those who are chosen to represent the country seem to take the responsibility seriously. They see themselves more like ambassadors of their countries and they know the national pride is at stake. Involvement of government in the selection of ENSI representatives adds a sense of responsibility to the process more so than, perhaps, in other member countries of the network.

I have only provided the two as examples above and recognise that there many other countries (such as Norway, Finland etc.) that enjoy government support to participate in ENSI. A number of governments are still supportive and commit funds to ENSI by sponsoring their own educators and ENSI country activities. However, this study also reveals that some ENSI members have had difficulties being involved in ENSI on a full membership basis as their governments do not provide funding for such educational projects. For example, in countries like Canada, membership had to be stopped because the Federal Government could not nominate and support national government

representatives, among other reasons. Educators from such countries have attended ENSI workshops and conferences with support from their own institutions or other funding sources within their countries.

Institutional Support: SEEPS and ENSI have been supported by member institutions that have hosted the secretariat to ensure the smooth running of the network activities. It seems SEEPS received considerable support from Manchester Metropolitan University (MMU) which helped with the administration, coordination and learning support materials development. For example the final project report had to be checked and signed by the Pro-Vice Chancellor under the declaration of the beneficiary section (SEEPS, 2004). Edinburgh University, on the other hand, despite the fact that the coordinator had left the institution to join MMU, continued to support the network by hosting the project's website. In the case of ENSI, the rotating secretariat ensures that no one partner institution is overburdened with the role of coordinating, as it is shared. In fact this could be creating some positive 'competition' as each member would strive to out-do the preceding ones in terms of running the secretariat efficiently.

Of course, hosting of the secretariat by partner institutions could have its own disadvantages especially in situations where the network is independent i.e. operating without an umbrella organisation as in the case of ENSI and to some extent SEEPS after the end of funding from the European Commission. In such circumstances, it means that the network members have to raise funds to run the secretariat as some hosting countries have no resources to support the project. The network then depends on membership fees (which are usually insufficient) to run the secretariat. Often if the fees are high, some members cannot afford to pay, resulting in loss of membership. From the ENSI, experience, it would appear that membership fees are often not sufficient to sustain the running of the secretariat by the hosting government.

Seed funding: Initial funding by the regional organisation, OECD-CERI and European Commission in the case of ENSI and SEEPS respectively, was a great boost for the establishment of the two networks. The financial support was used sparingly to ensure

that the project objectives were realised. Despite the fact that ENSI was run through a host institution in the early years, both networks eventually had to stand on their own and looked to partner institutions for logistical and management support especially with regards to the hosting of the secretariat. Although the study did not probe whether or not the administrators of the partner institutions were consulted on the hosting of the secretariat, it is a forgone conclusion that this could not have happened without the blessings of the heads of the institutions. Both networks proved a point that where there is dedication and hard work, a network can exist on its own, not necessarily under the management and direct control of the funding agency. As much as funding was significant to the development and running of the two networks, sometimes the demands and conditionalities that came with funding might have hampered progress especially on the part of the coordinators who had to spent time (in the case of SEEPS) working with elaborate technical reports. In such circumstances it would be a good idea to employ a person who would run the secretariat as the case was with ENSI.

Interest in international experience: One contributing factor for the networks' success could have been that most participating educators are interested in international involvement and experiences. Even in countries where the governments cannot support individuals, for instance to attend ENSI conferences and workshops, educators find alternative funding to enable them to participate in international forums. Their major interest is to learn from others and share experiences. It is for this reason that ENSI, for example, has individual members despite their countries not being members. This can affect the network continuity (in terms of activities and programmes) negatively or positively depending on whether or not the 'self-sponsored' members of the network are able to get funding for participation, especially if they take key roles in the network programmes that would need their presence.

Changing environmental field: The rise of the Education for Sustainable Development or Sustainability Education versus Environmental Education discourse and debates has an effect on the running and funding of education projects such as ENSI and SEEPS. ENSI has been established as an environmental education network with, among others, a

focused approach to professional development through action research for over 20 years. The United Nations declaration of a Decade of ESD means that there may be a conflict of interest between those in support of environmental education and those for the ESD. Due to the political currency developing around ESD, governments are moving towards implementing or being seen to participate in the DESD. Hence, they could be under pressure to appoint people who are inclined to champion ESD into ENSI which has been a successful, stable, highly visible and reputable environmental education network. Interview data reveal some subtle tensions as those who have spent years developing environmental education in the network feel insecure that their ideas and ideals would be taken over by an international phenomenon such as ESD which is attempting to make rapid progress and achieve a lot in a period of 10 years. Some appointments to ENSI of individuals who are perceived to be attempting to develop their careers in ESD or Education for Sustainability could jeopardise the smooth running of the network. Funding for ESD seems to be readily available and as a member of ENSI observed, most funders (especially NGOs) are trying hard to adapt the language for the grand application of sustainability in order to continue with the same kind of work they have been doing. Most ENSI members I interacted with in the course of this study, it would seem, would like to maintain the *status quo* of environmental education. This was also evident during the World Environmental Education Congress in Italy in 2005 where there was a protracted debate on whether or not the congress should orientate itself around ESD. A member of the ENSI executive committee made the following observation in an interview:

Some organisations and some individuals within ENSI would like the organisation to focus primarily or explicitly on environmental education. And others are very keen to embrace the broader ESD agenda. And that is sometimes quite difficult and clearly our area of expertise is environmental education. But we are also looking at ESD very clearly and very definitely perhaps through the lens of environmental education (Interviewee #2).

SEEPS partners also recognise the problems associated with definitions of environmental education, ESD, SE and the politics that come with the debates around these terms. They have, however, consciously set out to explore shared meanings, rather than ambiguities or tensions. They emphasise that shared meanings are not intended to create the illusion of generic, universal descriptions of complex socially and culturally constructed terms but

rather to identify common cross-cultural denotations (Shallcross et al., 2006). Perhaps it is for this reason that they use the three terms interchangeably. The early project documents used sustainability education and environmental education. In later years, as can be seen in the project final report (SEEPS, 2004), the term used throughout is Education for Sustainable Development.

5.5.2 Necessary (Internal) factors

Commitment and expertise: Commitment and expertise can be identified as factors contributing to the success of both networks. Members have been committed to the networks for a long time and they are keen to work with others. Some have been founder members and researchers who started the projects but continue to support the networks. In the case of SEEPS, members who worked under the Scottish initiative – Learning for Life Group in the 1980s are still with the project. Similarly, ENSI founder members continue to support the network as pedagogical advisers, researchers or coordinators. These play the role of mentors to the newcomers in the network. The founders are still very enthusiastic about ENSI and they put a lot of personal power and effort into the network. So their commitment and expertise are two important gifts they bring to the network. In addition, nearly all the founder members command a lot of respect in the field of environmental education. This was evident during interviews with members of the two networks where certain names of key role players were mentioned as people who inspired individuals to get involved in the projects. So there are big names behind each of the networks who motivate, and drive the original idea upon which the networks were founded.

Family symbol: After existing for many years (10 years for SEEPS and over 20 years for ENSI) both networks have become almost like families. In fact some of the interviewees referred to them as such. Members feel more like family members because they have been together for all these years. They meet together a number of times in a year and a strong tradition of warmth has grown among individual members. This family-like membership can sometimes be constraining where members fail to acknowledge and

define the boundaries of time for professional work. In some cases a culture of 'ownership' develops to the extent that newcomers have difficulties to advance new ideas into the networks.

Longevity and Legitimacy: Due to their longevity, the networks have achieved legitimacy which enabled them to be easily accepted by donors and new members. For example, ENSI members believe that since the project has existed for over 20 years and since it has sustained itself throughout these years, it has established some legitimacy, credibility and authority in the minds of people active in the field. As a result, many people are attracted to the network as it is seen as one which has integrity and a high level of professionalism. Integrity is further built by country level structures that exist under ENSI. Countries with effective structures such as Austria, Australia, Finland and Norway which bring together government officials, researchers, school networks and teacher educators and make a very effective structure at national level have helped to strengthen the network. The same can be said about SEEPS as it brings together educators at different levels in each of the partner member countries through its resource materials development and use.

Membership: Both networks faced challenges of membership which did not seem to be very stable; members joined and withdrew from the networks at different stages of the project implementation process. Although interviewee data did not bring this out, data from document reviews showed that country membership was very unstable in the case of ENSI (see the timeline – Table 5.3). In SEEPS, membership movement caused many administrative challenges as new people had to replace those who withdrew. It would seem the membership movements (in and out of the network) caused administrative challenges as well as breaks in network activities. In both cases, membership enrolment was ongoing to the extent that those who had been in the network for many years found themselves in situations where they spent a lot of time supporting newcomers. This can cause some subtle tensions if not well managed as some power gradients emerge between those who know much and those who know little. This was clear in the interview data.

Inclusive approaches: SEEPS and ENSI work with educational approaches that are inclusive and are appealing to a number of educators. They both focus on action research and school based approaches such as whole school development (SEEPS), Eco Schools and Learnscape (ENSI). These approaches appeal to many educators and government policies as they are seen to have potential to promote sustainable lifestyles. They also embrace collaboration and participation by prioritising cultural socialisation and transformation of education systems. These approaches are deemed democratic as they bring together teachers, pupils, teacher educators and communities. Shallcross et al. (2006) postulates that a whole school ethos promotes action through a collaborative culture of communication and decision-making between adults, children and young people based on mutual recognition and respect. Collaborative cultures are said to be built on the belief that both individuals and groups should be valued because individuals are inseparable from groups; in this way diversity can be fostered while building trust and promoting values through openness and a sense of mutual security (Shallcross et al., 2006). These inclusive approaches support teacher collaboration and shared decision-making and have structures that cater for caring and serious learning which seem to attract a number of educators to these networks. The core of the approaches is a democratic and participatory ethos that underpins the organisation and governance of the school or faculty (Shallcross et al., 2006). Furthermore, the inclusive approaches appeal to most educators due to their relational nature where (in the case of ENSI), the teachers work with their schools, then they meet student teachers and other teachers at another level. The philosophical orientation of these approaches is forward looking and seems to be attractive to many people.

Communication: Communication is one factor that can make networks achieve their objectives. However, it appears that communication in the later years of ENSI has become difficult as most of it has been through emails, internet, telephone and faxes. As explained in the case study above, ENSI membership meets twice a year as a general membership, and once during an annual conference. Workshops and seminars for groups of individuals are also held. However, some members interviewed feel that the network members should meet more often. They observe that the communication through internet

and telephone does not offer the same benefits as meeting face to face. At the same time, it is clear that all the members have other commitments that would not allow them to meet that often. They may not have the time and resources to contribute to the networks in addition to other work loads. In the case of SEEPS, the issue of communication did not come up from interviews but there was evidence that since most members were not first language English speakers, a lot of money and time was invested in the translations and interpretation of resource materials. The issue of language also determined the composition of working groups, where each group had to have an English language speaker as coordinator. This in a way denied other non-English speakers their democratic rights to become coordinators especially since the project championed the principle of inclusiveness.

5.6 CONCLUSION

This chapter has provided insights into the use of networks as strategies for improving education systems in the European context. The chapter demonstrates that the European Commission has invested much in the idea of networking not only as a strategy for educational improvement but as a political tool to unite and encourage collaboration among European countries. The chapter provided two case studies of international environmental education networks. The SEEPS is predominantly a European network under the European Commission funding while ENSI, though it draws the majority of its members from Europe, is more of an international network as it includes non-European countries such as Australia, and Canada. By redescribing and recontextualising (see chapter 4) the SEEPS and ENSI networks by means of ANT's moments of translation, I was able to gain insights and confidence in how to go about tracing the evolution of CDN as presented in the next chapter. This chapter has also examined the underlying mechanisms that enabled or constrained the two networks. These mechanisms are presented to inform the CDN in particular, and the SADC REEP can draw on these insights in its quest to enable professional development and institutionalisation of environmental education courses through networking. These lessons have also foregrounded ideas that inform some of the recommendations that I have presented in Chapter 10.

CHAPTER 6

EVOLUTION OF THE COURSE DEVELOPMENT NETWORK

6.1 INTRODUCTION

This chapter describes the CDN. Rather than providing a genealogy or plain account of what happened, I draw on ANT's moments of translations to provide a more critical perspective on how the CDN evolved in southern Africa (Callon, 1986; Latour, 1987). This approach has been informed by Danermark et al.'s (2002) notion of abduction as mode of inference (see chapter 4). I also draw on the themes that emerged from an inductive analysis by means of Nvivo computer software (see section 4.5.2). The chapter also looks at the historical and underlying assumptions that shaped the formation of the CDN, providing a platform for retroductive inferences made in chapter 9. The five underlying assumptions are drawn from interviews with founders, key actors of the CDN and project documentation. The assumptions represent the shared vision, values and beliefs of the founders, funders and the key actors about how the course development network could strengthen institutional capacity and individual capabilities in environmental education course development processes in southern Africa. In chapter 9, I draw on these assumptions as I discuss the findings of this study with regard to professional development (Chapter 7) and institutionalisation of environmental education courses (Chapter 8). The chapter further examines the key outcomes of the CDN.

6.2 BACKGROUND TO NETWORKING IN COURSE DEVELOPMENT IN THE SADC REEP

The history of networking in environmental education courses in SADC REEP can be traced to Gold Fields Participatory Course in Environmental Education in the early 1990s. This course was initiated by the Gold Fields, a prominent gold mining company, to support education staff professional development in field centres in South Africa in 1991 (Janse van Rensburg & Le Roux, 1998). The course was informed by a critical orientation as was dominant in environmental education at the time (see section 2.7).

Introduced at the time when it was becoming apparent that *apartheid* in South Africa was coming to an end, the course was developed on the premise that it would be accessible to practitioners in South Africa in ways that were not constrained by the legacies of colonial and *apartheid* institutional structures and exclusionary practices (see section 2.2.1). It encouraged educators to research the root causes of environmental issues and risks, and the institutional and often behaviourist roots of many educational orientations and approaches (O' Donoghue & Lotz-Sisitka, 2002; Lotz-Sisitka & Raven, 2004). It strived to be responsive to learners in context, and took a flexible curriculum framework approach which allowed for an open-entry, open-exit system to enhance inclusivity (Lotz, 1999).

In 1992 the Murray & Roberts Chair of Environmental Education in Rhodes University's Environmental Education Unit (now called the Environmental Education and Sustainability Unit), in collaboration with some members of EEASA (see section 2.9), identified the need for a community capacity-building programme. This was meant to assist educators to respond to environmental issues and risks and to improve their practice. Drawing on the initial ideas of the Gold Fields course which ran for the first time in 1991, the two institutions developed a comprehensive professional development programme. What was initially an informal network of environmental education courses started to expand when Rhodes University agreed (following requests from learners on the courses) to provide certificates of attendance to participants in 1995 (Lotz-Sisitka, 2000). Following a number of presentations of the Gold Fields Participatory Environmental Education Course at EEASA conferences, there was a growing demand by people outside South Africa to adapt the course materials and run them in their own countries. For example, in 1995, the course was run for the first time outside South Africa in Zanzibar. In 1996 it was adapted and offered by SPECISS College in Zimbabwe for the first time³³. Table 6.1 shows the different countries in which the course has been run. It is important to note that the course has also been adapted and run as part of the formal teacher education qualifications at Natal University (B.Ed module); Natal College of

³³ SPECISS College has since continued running the course annually (sometimes twice a year), and has been refined over the years.

Education EE Course; Stellenbosch University (B.Ed Course); and Rhodes University (Further Diploma in Education).

Table 6.1 Southern African countries that have adapted the Gold Fields Course.

Year	Country	Name of course
1995	South Africa	Rhodes University WWF International Certificate Course in Environmental Education.
1995	Zanzibar	Zanzibar National Course.
1995	South Africa	KwaZulu Natal Conservation Services Course (run again in 2001).
1996	Zimbabwe	The Zimbabwe National Course (SPECISS College – run every year since).
1997	South Africa	Eastern Cape & Gauteng Teachers Course (run twice).
1997	South Africa	Industry and Local Government Course (run three times).
1997	Namibia	Namibian Environmental Education Course (run every year since).
1998	South Africa	RU/WWF Course becomes RU/SADC International Certificate Course (run every year since).
1999	Malawi	Malawi Industry Course (run twice).
2000	Swaziland	Swaziland National Course (run every year since).
2001	Zambia	WWF Zambia Course (run every year since).

In 1995 WWF International identified the need for university-based environmental education and training opportunities in Africa similar to those previously offered at the Jordanhill campus of Strathclyde University in Scotland. This followed one of the WWF course organiser's (Alistair Scott) attendance of the EEASA conference in 1995 where he attended a workshop on the Gold Fields Course. He approached Eureka Janse van Rensburg who was at the time the Murray and Roberts Chair of Environmental Education at Rhodes University about the possibility of running the WWF international course in Africa.

Subsequently, the Rhodes University/ WWF International Certificate Course in Environmental Education (RU/WWF) was developed by the Murray and Roberts Chair of Environmental Education with financial assistance from WWF International, WWF South Africa and First National Bank. The course drew on the underlying principles and materials of the Gold Fields Course (Raven, 2005). The RU/WWF course was first run in 1995 and again in 1997, for which 15 and 13 students were selected from the southern

and eastern African regions for the first and second courses respectively. In 1997, the SADC Regional Environmental Education Programme (REEP) was established (see section 1.4). Following discussions in the region, especially during EEASA conferences, SADC REEP entered into a more formal partnership with Rhodes University to run the two months WWF/Rhodes University International Certificate Course in Environmental Education as the Rhodes University/SADC International Certificate in Environmental Education Course.

Rhodes University and SADC REEP appointed a member of staff each to work on these courses. Rhodes University also appointed a Director to the Gold Fields Environmental Education Service Centre (GFEESC) in 1997, who was tasked with support for and expansion of the Gold Fields Courses. This was in response to the growing demand for Gold Field Courses in the years prior to the establishment of GFEESC. Rhodes University, therefore, had dedicated capacity committed to the task of course development. The two Rhodes University and SADC REEP staff members were designated to run what was then called the Rhodes University/SADC International Certificate Course in Environmental Education (RU/SADC). However, as more course developers formed informal partnerships and collaborated on course development initiatives within the region, demand for Rhodes University and the SADC REEP to support emerging environmental education courses in different countries of the region increased. The two partner institutions were overwhelmed by these demands as one of the course tutors recalls:

[we] started working together on the [RU]/SADC Course and then there were more and more similar courses that started to come up. And then we ended up with a lot of stress in responding to the courses. It was very difficult to respond to Zimbabwe, Swaziland and Namibia who wanted to run the course in those early days. The SADC course and the South African Gold Fields course [were demanding] and there were many more demands for customization of the course for teachers and industries (Interviewee # 9).

In response to these demands, the need for a more formal regional network of environmental education course developers was mooted in 2001 (Price, 2002b). With financial support from Danida, the Regional Environmental Education Support Project

(REES) - Course Development Network (CDN) was established, under the aegis of the SADC Regional Environmental Education Programme, in 2002 (see section 1.2).

6.3 UNDERLYING ASSUMPTIONS SHAPING THE FORMATION OF THE CDN

As already stated in the introductory part of this chapter, the underlying assumptions in this study refer to the visions, values, intentions and beliefs of the founder members, funders, and key actors of the network. In many cases these were not explicitly stated as assumptions in the project documentation but appeared variously as outputs, indicators, statements of intent, purpose or vision of network. Further, these assumptions have been built from interviews with members of the CDN and key actors. They have been constructed in line with the research focus on networking, professional development and institutionalisation of courses. I discuss them here to provide a means of examining change and how the CDN played out in the light of the basic values and beliefs of the founders as recorded in the interviews and project documentation as well as interviews (Nyambe, 2005). I have reviewed these assumptions in the light of the results of this study (see section 9.2). In the next section, I discuss each of the assumptions, namely: participating countries; development of a toolkit; accreditation of courses; institutionalisation of courses and assessment of professional development. Details are discussed below.

6.3.1 Assumption 1: Participating countries

The aim of setting up the Course Development Network was to broaden and strengthen environmental education capacity and professional development in the region. The course development process involved nine networking institutions meeting at course development workshops twice a year over a period of thirty months. Through these regional workshops, network members were to share skills, experiences and resources in order to enable the development of environmental education courses in their own institutions, drawing on their local context. Identification of suitable organisations would

be from five selected SADC countries, defined by the five DANCED³⁴ funded countries in SADC.

6.3.2 Assumption 2: Development of a course developers' toolkit

For the network to develop with suitable structure and coherence it was proposed (first meeting, July 2002) that all participants contribute to the development of a course developer's toolkit. This would be a collection of course development materials, cases stories from members and partner institutions. A resource such as this would be managed by the coordinator and would enable the developing work of the network to unfold as a coherent capacity-building programme.

6.3.3 Assumption 3: Accreditation of courses

Concurrently with the development of the courses and materials, the network would also be developing processes for accreditation. It was anticipated that a consortium of three universities would provide accreditation to the wider network of courses and thereby would develop a common vision of course development standards in the participating institutions.

6.3.4 Assumption 4: Assessment of professional development

The individual members of the network would themselves compile a portfolio of work, including reports, curriculum and assessment frameworks, and draft materials, which would form the basis for assessment of professional development for the course developer. Thus, the work of the individual representatives would be available for

³⁴ DANCED – the Danish Cooperation for Environment and Development only worked in five countries in southern Africa. These were Botswana, Namibia, South Africa, Lesotho and Swaziland. Before the REES project could be implemented, DANCED was transferred from the Danish Ministry of Environment to the Danish Ministry of Foreign Affairs and absorbed into DANIDA. Although the REES project was started under DANIDA (the historical development and management procedures still followed that of DANCED) the changes meant that the implementation of the project was done by DANIDA. This change came with some latitude of flexibility in terms of the countries to work with as Danida had no restrictions. However, the available funding was only meant to cover the institutions in the initial five countries.

assessment and successful participants will be awarded certificates of professional development.

6.3.5 Assumption 5: Institutionalisation of courses

The emphasis on strengthening environmental education in southern Africa was seen as closely linked to institutionalisation. This would enhance sustainability, in that institutional partners represented by individuals constituted the network. The process of institutionalisation of environmental education courses in the partner organisations was to start at the level of proposal writing. Proposals would articulate broader context, issues of national policy on environmental education, national standards, qualifications and accreditation procedures that would articulate with the proposed courses. It was envisioned that through this process, the courses would be developed and run within institutional frameworks that would be sustainable in the long term. The course development process would also be institutionalised within the SADC-REEP framework of supporting courses in the region.

With these assumptions in mind, the next section examines how the CDN evolved by means of moments of translation as interpretation framework (see chapter 3). The section provides further insights into the underlying assumptions above, as do chapters 7 and 8.

6.4 EVOLUTION OF THE CDN

This section reviews how the CDN evolved, how actors were enrolled (or not) with other actors in attempt to foster professional development and institutionalisation of environmental education course development processes in the southern African region. The interpretation and redescription (see Danermark et al., 2002) of the CDN is structured by ANT's moments of translation, namely problematisation, interesement, enrolment and mobilisation.

6.4.1 Problematisation

Environmental education has since the early 1970s been viewed as an important response to emerging environmental issues the world over (Greenall, 1987; SADC ELMS, 1996; Barrow, 1999; Martinez-Alier, 2002; Dresner, 2002) (see section 2.5). In SADC member states, environmental education is seen as a major strategic activity for the region's environment and sustainable development programme. SADC REEP's overall objective, as outlined in section 2.4.1, is to enable environmental education practitioners in SADC member states to strengthen environmental education processes for equitable and sustainable environmental management choices. Environmental education course developers in southern Africa have been networking and sharing ideas and resources around course development processes since the early 1990s. This type of networking has been largely informal, where environmental education practitioners meet at conferences such as EEASA (see section 2.9) and agree to share ideas, skills and resources. As explained in section 6.2, SADC REEP and its partner – Rhodes University (Environmental Education and Sustainability Unit) were overstretched by the late 1990's to respond adequately to demands for support for environmental education courses across the southern Africa region. The interest in networking around environmental education course development processes is best described in the following quotation:

There were little pockets of people doing environmental education work and one of those little pockets was, of course, some of the work that was happening in South Africa and the development of the Gold Fields Course with the particular orientation that was copy right free and supportive of other people to develop a similar course rather than trying to say that we run this course and it is kind of copy righted to ourselves. So that, through supportive orientation work ... opened up a number of courses and opened up particularly when that course became a WWF international course which later became the Rhodes /SADC course. And we started to work with people from all over the region who then started to pick up on the core materials to run courses in their own countries ... It just became overwhelming, actually, and the kind of crux of it was when some people in the region started to feel that we were actually gate keeping because we weren't kind of being able to support enough courses ... I think it was out of that that the notion of a course development network started - to try and support many areas that would then support course development in the region (Interviewee # 23).

It was against this background that a relatively formal course development network was formed as a project to broaden and strengthen environmental education capacity and

professional development in the region (see assumption 1). The CDN was formed as a sub-project under REES within the SADC REEP (see section 1.2 for more details). It appears pressure on SADC REEP and Rhodes University for support in environmental education started building up in the late 1990's early 2000s when a number of countries and institutions in southern Africa drew on the Rhodes/Gold Fields Course in Environmental Education to develop their own courses. This is evident by the number of publications and consultations done through meetings around this period (Lotz-Sisitka, 2000; Lotz-Sisitka, 2000; RU/SADC REEP, 2001) and presentations at EEASA conferences. Staff at Rhodes University (Environmental Education and Sustainability Unit) (RUEESU) and SADC REEP started to explore ways of supporting the expansion of courses in the region. They also started to identify the actors who were interested in course development processes and who could be part of the network. In 2000 Dr. Heila Lotz-Sisitka who was then director of the Gold Fields Environmental Education Service Centre at RUEESU wrote up a discussion paper entitled "*The Rhodes University/Gold Fields Participatory Course in Environmental Education – New Directions and Changing Times*" (Lotz-Sisitka, 2000). The paper, which incorporated the main findings from previous research done on the Gold Fields Course (for example, Janse van Rensburg & Le Roux, 1998), aimed to explore the following (see Table 6.2 for more details):

- Evaluate the contributions of the Gold Fields course to the development of environmental education in the region as it was adapted in a number of countries and disciplines (see section 6.2).
- Articulate key issues associated with the conceptualisation, management and expansion of the course/s in order to inform decision making in the Gold Fields Course.

Table 6.2 Extract from Dr. Heila Lotz-Sisitka's discussion paper on the future of the Gold Fields Course.

<p>Recommendation 7.2 Regional adaptations of the course</p> <p>The partnership established between Rhodes University and the SADC REEP, EEASA, IUCN and other organisations to support regional adaptations of the course should be further developed – to avoid duplication and overlap, unnecessary fundraising etc. The extent of support required to adapt or re-develop a course in other countries should not be overestimated, and this process should be carefully documented in the case of Swaziland and Malawi course development initiatives that are currently taking place.</p> <p>Recommendation 7.5 Development of a certificate course programme in partnership with SADC REEP/WESSA</p> <p>To better co-ordinate and sustain the course developments, innovations, adaptations and the range of related activities, it would seem to be important to 'firm up' the partnership we have established with the SADC REEP and WESSA, and conceptualise how best to support the work we are doing with courses and course development in the region. The possibility exists to establish a COURSE DEVELOPMENT PROGRAMME with key components:</p> <ul style="list-style-type: none">• Curriculum Development• Materials Development• Tutor Development Support• Research, Innovation and Evaluation• Assessment, Accreditation and Institutionalisation <p>These key components will feed into, and draw experience from a range of individual courses. Key partners in the programme would be RU/SADC REEP/EEASA, while individual courses and their particular partners will affiliate/be part of the broader programme.</p>

Although the paper was written in order to inform decision making with regard to the future directions of Rhodes University /Gold Fields Participatory Certificate Course in Environmental Education, and the various adaptations of the course in different contexts, it gave impetus to the whole issue of supporting course developers who were working with the course. The paper also provided support for broader environmental education courses under the SADC REEP in southern Africa. For example, two out of the six recommendations under the heading "... the new directions/priorities for the next two-three years" (Lotz-Sisitka, 2000:7) had an influence on the formation of the CDN.

As can be seen from Table 6.2, the early social and natural actors whose interests were bound to environmental education in the region were identified long before the CDN was formed. A follow up to this document was a series of workshops and meetings aimed at defining the way forward in the quest to support the growing need for environmental education in the southern African region. The process of problem formulation also

focused on identifying more actors in the field of environmental education course development to find a way of supporting each other and working together. It was during this process that actants such as financial resources were being mobilised through eliciting support of possible funders.

Among the early meetings was the workshop to develop an Industry Course for Swaziland in 1999. On the 9th October 2000, Dr. Lotz-Sisitka sent out an email inviting potential course developers interested in deliberating issues associated with developing and running courses (Lotz-Sisitka, 2000). I have selected some of the key discussion issues (see Table 6.3) flagged in her invitation letter which seems to have been relevant in shaping the formation of the CDN as follows:

Table 6.3 Excerpts (from Dr. Lotz-Sisitka's email) of issues that shaped the formation of the CDN.

Expansion of the courses in the region (e.g. Swaziland, Namibia, Zimbabwe, Malawi, East Africa etc). How do we interact with this process in more meaningful and sustainable ways?

Management of courses. How can we improve our co-operative approach to doing this in a way that will be sustained, and keep the rigor of the course development process going – noting here that management of the courses does not just involve logistics and administration, but ongoing reflexive reviewing of tutoring processes, funding, fundraising etc. Here we need to consider interest DANCED is showing in the certificate course programme in particular, and how we can best interact with this so that it enables us to support courses better.

I have attached a discussion document that I started working on a while ago, as Mike [Mike Ward: Manager of SADC REEP] and I tried to 'map out' what was happening with different courses, and what the challenges of working with these courses might be.

We have started redevelopment of the Industry course to enable EE processes in industry to be more 'integrated' to environmental management processes (initially for Malawi, but hopefully this process can be drawn on for the SA course and the Zimbabwe industry course) ...

Mike has been working on the Swaziland course and is about to develop the materials for this course with Alistair and Sanele's support & Alistair has started work on a teacher's course for wider application in the SADC region.

The DANCED support for SADC REEP is starting to be conceptualised – which will more than likely include support for the short courses programme – particular the aspects of working with course developers, materials development, establishing of short course processes etc.

The DANCED initiative mentioned in Table 6.3 above culminated in the development of a proposal leading to the establishment of the REES. Prior to this a number of discussions and consultations took place between SADC REEP and DANCED. For example, during the EEASA 2000 Annual Conference that was held in Swaziland, DANCED ran an open discussion and workshop (facilitated by Erwin van den Eede and Jackie Fredendal) about regional environmental education needs as well as what areas required support. This was followed by further discussions in Howick in November/December 2000. One of the highlights of these consultations was the development of the *Strategic options for the Danish assistance to the regional environmental education initiatives and strategic action plan in southern Africa* (RU/SADC REEP, 2001) discussion paper. The paper identified (from DANCED's operational portfolio) five countries in southern Africa as DANCED cooperating countries through a process of missions and consultations with cooperation partners. The five countries were: Swaziland, South Africa, Lesotho, Namibia and Botswana. The initial project document focused on these countries. Only citizens of the five countries were supposed to be members of the CDN. Identification and definitions of actors in this way was problematic for the SADC REEP whose mandate went beyond the five countries. This posed a substantial challenge to the Programme that was supposed to reach out to 14 countries. The programme staff acknowledged these challenges as the following statement suggests:

... There were certainly challenges around the development of the whole Danida REES project, in the design of it. I will say that this area, though um ..., Heila was particularly affected ... How on earth in the SADC programme do you identify four or five countries? I think that was awkward and that was definitely something around the funding requirements. It led to big challenge on how you take this work almost like a pilot project and take it to scale in the region. I mean there were courses in Tanzania that I think definitely needed support at this time. And we tried to support them in other ways but not through this particular network (Interviewee #23).

To overcome challenges created by the DANCED funding requirements, funding was sought from other budget lines within the SADC REEP funding framework to support course developers outside the five countries. For example, courses from Zambia, Malawi and Mauritius were funded through Sida seed funding and later other REES sub-projects such as Policy (see section 1.2 for the sub-projects). Some members such as those from

Support for Environmental Education in Namibia (SEEN) and additional participants from the Polytechnic of Namibia sponsored themselves (through their organisations) to participate in the network.

Despite the funding requirements and challenges, the formulation of the REES project document grew out of widespread consultation and participatory processes in the region. These consultations involved SADC ELMS and the proposed implementing agency, the Wildlife and Environment Association of South Africa (WESSA). A follow up meeting between SADC REEP members and the DANCED consultants was held on 2nd April, 2001 (Taylor, 2001). This meeting reviewed the REES Project Document prepared by DANCED consultants. Other meetings included that of the SADC REEP Network Representatives who met at Hilton (South Africa) on the 3rd and 4th April 2001 where 13 SADC countries were represented (*ibid*). Though this seem to have been a smooth path of consultations to provide transparency in the way the project was being formulated, my reading of a report from the director of SADC REEP (Taylor, 2001) to the Royal Danish Embassy reveals that the formulation of the project was marred with contestations arising from, mainly, the ideological (in the understanding of the field of environmental education) differences between the DANCED consultants who developed the initial document and SADC REEP key role players. The process of consultations also seemed to have been frustrating on the part of SADC REEP and its partners due to lack of continuity of DANCED role players as expressed in the following excerpt from the report:

It is hard to be part of a genuine project development process when the developers come and go. So far we have worked with five different DANCED role players and worked on at least six different documents. While it is healthy that different perspectives are brought to the process, it is hard to maintain a thread of coherent feedback and input when developers come and go. At times this has led to immense frustration where SADC role players have been invited to submit feedback only to find the consultant they sent their feedback to appear to no longer be involved in the process (Taylor, 2001).

6.4.2 Interesement

The period of consultation and promotion of the idea of the CDN was, in the main, through workshops, presentations at major meetings such as EEASA and SADC REEP National Network Representatives meetings (see the section on problematisation above). The promotion was mainly done through personal contacts by SADC REEP key actors who contacted those they knew would be interested in the project and would contribute something to the network. Higher Education Institutions, initially in the five DANCED countries, were contacted and the project was introduced. Almost all the institutions contacted showed interest as is evident by the fact that they gave permission for their staff members to participate in the network. According to Latour (1987) at this stage of moments of translation, one expects some resistance. In the case of the CDN, there was no serious resistance except perhaps in one instance where the developers of an EE module for diploma students at the Polytechnic of Namibia thought the 'self-reflective' approaches used in Rhodes course were inappropriate for their course (Price, 2002). However, nearly all the individuals and institutions approached were willing to participate and became part of the network even when they did not comprehend the details of what the network was all about as indicated in this statement:

I think that when the institution was willing to join the course development network, I think the director was not, sort of, aware of the constraints with regard to specific NIED (National Institute of Education Development) work in terms of course development because in the institute we don't try to develop courses really we are a curriculum institute. Course development I think that maybe [long pause] ... she [referring to the director] was looking at the BETD (Basic Education Teachers' Diploma) as opportune ... sort of teachers' course in terms of doing something in relation to environmental education. But, well the opportunity was there but unfortunately the limitation to that level wasn't realised at the planning time. But the institutional drive was actually there maybe she felt that it was an opportunity for us to be linked (Interviewee #18).

Quite a number of institutions found themselves in the network without really having a full grasp of the details of the work expected of them (see section 7.4.3 Table 7.4). According to some founders, some institutions were strategically chosen due to their anticipated multiplier effect as the case was with Chobe Wildlife Trust, which was strategically located to serve four countries due to its geographical position at the border of Zambia, Namibia, Zimbabwe and Botswana. However, the course developer from this

institution was the first to fall out due to other demanding responsibilities within his organisation. The willingness of institutions to belong to the network may be attributed to the popularity of the SADC REEP, first as a regional organisation and secondly as a result of its work in environmental education course development as one of the founders seems to suggest: "... *Our courses have always been quite popular, I am thinking of going back before the SADC REEP was formalised in 1996 ...* (Interviewee #21). A few other institutions appear to have joined because financial resources were readily available to help them develop courses.

The structure of the CDN and partnerships were defined at the project formulation stage. For example, assumption 3 (see section 6.3.3) envisaged the formation of a consortium of at least three universities that were going to accredit courses but this structure did not fit well within the CDN. Price (2002) notes that there was little research done with the possible consortium members. Most of the discussions were done with the people who were running the courses and not the university administrators. According to Price, the course developers were often not versed in their university policies. She recommended that REES could make further follow up with the appropriate university representatives (for further reasons see chapter 7).

In many ways, early publications such as *The strategic options for Danish assistance to regional environmental education initiatives and strategic action plan in southern Africa* (RU/SADC REEP, 2001) shaped the partnership structures and that of the CDN as is evident in this excerpt:

It is further proposed that this component of the project be located at a higher education institution (like Rhodes University) and that a person be appointed at a senior lecturer's level (R150 000 per annum), based at Rhodes in the Rhodes Environmental Education Unit [this is before the unit became EESU], working closely with the Murray & Roberts Chair of EE and the Gold Fields EE Service Centre Director – both of whom have built up extensive experience of course development and evaluation experience over the past eight to ten years. This person would facilitate curriculum development processes, materials development processes, research and evaluation processes. This person would also facilitate two longer term university-based attachments per annum ... (RU/SADC REEP, 2001:43).

The above discussion paper also articulated how the tutors, working with course coordinators, would be supported. Other partner structures identified included a course coordinators exchange programme. Sources of funds (actants) were identified beyond the envisaged DANCED funds at the time, to include Sida funding which was already within the SADC REEP funding framework. The management structures were also proposed in this discussion paper. For example, the paper was clear with regard to the management of the project which was to be managed from SADC REEP by a course development coordinator. The course development coordinator was proposed to work in liaison with the SADC REEP training coordinator who was already in position at the time roles were being identified. At project management level, the course development coordinator was to work in close cooperation with the SADC REEP and RUEESU.

As already mentioned, this document informed the proposal development of the REES in as far as course development component is concerned. Data analysis, in the light of this study, of what came to be implemented as the CDN shows some slight variations with the ideas that were proposed at conceptualisation stage by SADC REEP role players. This can be attributed to further negotiations and discussions between the SADC REEP actors and DANCED actors. As indicated under the moments of problematisation, re-conceptualisation and formulation of the project involved much negotiation and consultation. It will seem that not everyone's interests were satisfied at the end of the protracted negotiations. Some of the major actors in the conceptualisation of the initial project were not happy about what came to be implemented after nine months of negotiations, as cited below:

I think that there is, a little bit of an anomaly between the conceptual intentions of the network in terms of course development and professional development processes and the way the actual network came to be set up as a funded project. What you have is the process of Rhodes initiative with SADC ... The course development network was set up because you had all these people that were working with Rhodes materials and there was concern that on one hand professional activities would not be supported by one person without being overwhelmed and on the other hand there was this concern that because the Gold Fields were amongst the first environmental education materials available, people were all using them in a same way but at different levels and for different groups. So there needed to be some kind of professional development activity so that people became able to put together a course for professional development that actually met their contexts. In that case, what I am trying to point to is that the notion of professional

development that the network was founded upon was seen differently by the people who initiated the project and people who actually wrote the logframe and set up the way in which the project will be running (Interviewee #12).

Interviewee #12 accused the consultants who were hired by DANCED and later Danida for not having much of a grasp of the conceptual basis upon which the idea of the course development network was initiated. But other founders, apart from the early teething problems and the initial geographical location of the project i.e. working in five countries, had no problems with the way the CDN was finally set up. Evidence from data indicates that the SADC REEP key actors were part of the process of developing the project document for the CDN and that they helped in shaping the project outlook and how it would function.

I do not think the funding demands harmed the network in any particular way. You know, I think we worked quite hard on working with the funders to make sure that the so called development imperative of the funder didn't adversely affect the process ... but it did mean that 12 to 14 people could meet 2 to 3 times a year to work on resources that would then be in support of learning, learning about courses and it also meant that some of those people could enhance their personal skills through the meetings. And we needed a way of funding that. So Danida generously offered to support it. I wouldn't describe it as an anomaly, I do not think any social process is perfect but I am satisfied with the way it came out (Interviewee #21).

Another founder member argued that although the network development seemed to have been problematic in the beginning with consultants trying to shift the focus from the original plans, the SADC REEP key players had an opportunity to discuss and influence the way that the CDN was finally set up. Their participation was significant and was taken seriously even if it meant losing financial support as it happened in the earlier DANCED proposal writing, when SADC REEP key actors had to turn down the first funding offer which was huge compared to what they eventually accepted (Interviewee #21). The bone of contention was that the development agency appointed a foreign consultant to write the project proposal and the consultant thought it would be more effective to employ foreign experts to write courses for Africa. But "... we knew that if we did it the way it was proposed, I think it would have harmed the developing professionalism in southern Africa" (Interviewee #21).

The founder members observe that the only thing that changed was the way the network played out as members worked with the idea (of course development) and shaped it to suit their own contexts and needs. Nearly all the founders acknowledged the fact that the original idea for people to work together to develop courses was maintained. They all agreed that the one draw back was the way the Danish funding framework only focused on DANCED countries when there were other countries outside this geographical definition who were involved in course development such as the Zimbabwean group. The funding framework is said to have excluded many potential course developers who had environmental education interests at heart. For example, the Zimbabwean group had been in the earlier course development networking processes but was excluded in the 'formal' CDN activities.

6.4.3 Enrolment

Micro-actors of the CDN were mainly SADC REEP and RUEESU staff who were involved in the conceptualisation of the idea of a course development network as discussed above. Having defined the problem and partnership structures, micro-actors went out to enroll other actors. At this stage the Chief Technical Adviser (CTA) and Director of the REES were already in positions. The two played a pivotal role in the enrolment of members of the CDN. They travelled to some of the five initial countries to talk to heads of institutions about the CDN. They asked the heads of these institutions to nominate representatives to the CDN as the following quotes suggest:

The first time, I remember when I was sort of recruited was done through the previous director of the institute. I think it happened through Jim and Helen [Jim Taylor and Helen Springall Bach, REES Director and Chief Technical Adviser respectively] visiting the institute informing the director about the course developers' network and what they were actually proposing to do (Interviewee #18).

... in the beginning I was working, I worked with a consultant. He was a senior coordinator. He was told and asked by management or actually the registrar to identify somebody in our department that can contribute towards this network. Then he asked me if I was interested because I have the knowledge of the country and all the people and all the industries. I have been working here for more than twenty years now. I said okay, I will be interested ... but I must admit I had no idea what it was all about (Interviewee #22).

Two extremes of recruiting members to the CDN happened. The first was where the REES staff and the consultant commissioned to recruit members were only able to talk to the heads of institutions who later nominated their staff members to join the network. In the second case individuals were approached directly by a member of the REES. It was then upon these individuals to start the process of formalising the process of their institution's participation, since they were supposed to have worked as representatives of their institutions. The formalisation process was followed by formal invitation letters and signing of memorandums of understanding between the institutions and WESSA as the implementing agency.

Most of the CDN members who were nominated by their heads of institutions and who never had an opportunity of meeting the REES recruitment team attended the first CDN meeting with lots of uncertainties of what was expected of them (see section 7.4.3). They found that belonging to the CDN as a call of duty because their superiors had asked them to represent the institutions. Those who were approached individually believed they were approached for recruitment because they had some experience to bring to the network. Others had worked in earlier initiatives during the formulation of the problem (see problematisation stage of the moments of translation) Interviewee #10 explains why he thought he was selected “ ... *this was after the recognition of an initial attempt by me and my countrymen and women to develop an EE course for industry. The failure was due to lack of expertise and finances ...*” Those who were met as individuals were eager and knew exactly what was expected of them.

However, in both cases the process of signing MOUs was not easy. There were often delays in signing MOUs. In at least three instances these were not signed at all. Price (2002) explains that the delay in signing the MOU by the institutions was a mark of objections on the part of the institutions (see details in Chapter 8). This observation could have been true to some extent as there seemed to have been no problem why the institutions could not sign the MOU, since all the participants in the CDN had the blessings of their institutions, at least on paper, to participate in the CDN. Also, the CDN had approved the course proposals. There was a lot of inertia from the institutions. The

CDN could not release partner support funding to institutions that had not signed the memorandum of understanding. Consequently, other ways of supporting these proposals without going through the institutional structures were devised. In two instances the course development activities were financed directly from Howick, South Africa (from the head office of the SADC REEP). This involved the direct transfer of money to service providers such as editors, consultants and paying for workshop facilities.

In addition, and perhaps, to provide transparency and a more democratic process of selection as demanded by the project document, a consultancy was commissioned to help with the selection. Leigh Price of Zimbabwe was appointed consultant. Her terms of references included: “ ... *to identify individuals and institutional context of current and potential course developers in Botswana, Lesotho, Namibia, South Africa and Swaziland* (Price, 2002:4). The purpose of the consultancy is captured in Table 6.4.

Table 6.4 Purpose of the Leigh Price Consultancy.

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| <ul style="list-style-type: none"> • To document environmental education courses in the above five different SADC countries that relate to social change and respond to environmental issues and concerns. • To identify the potential and actual EE course provider institutions in the former DANCED countries with a view to making recommendations for a total of nine of these to be members of the Course Development Network (CDN) to receive support from the REES project. Three of the nine should be tertiary institutions, that is, universities or polytechnics, which can provide guidance and accreditation to all participating members. • To identify individuals working in EE course development within the nine institutions with a view to making recommendations as to which individuals could be possible members of the CDN (as representatives of their institutions). |
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Prior to this consultancy, key actors in the REES participated in a scoping exercise at the SADC REEC. The scoping exercise consisted of interviews with the key actors in the REES project and the SADC REEP. These were: Helen Springall Bach (Chief Technical Advisor); Heila Lotz-Sisitka (Murray and Roberts Chair of Environmental Education at Rhodes University); Rob O’ Donoghue (Director of the Gold Fields Service Centre-Rhodes University); Jim Taylor (Director of REES); Alistair Chadwick (Training Coordinator – SADC REEP); and Sanele Cele (Attachment Programme Coordinator –

SADC REEP). The exercise was aimed at identifying names of people the consultant had to interview in each of the five countries; criteria for assessing the environmental education courses; and developing interview schedules (in terms of the sorts of questions to ask).

Drawing on the scoping exercise the consultant interviewed all the people listed in the scoping report. She also followed leads to meet people who were not on the contact list but were mentioned in the interviews. The consultancy helped in the enrolment process for the CDN. This study has drawn on some of the insights into this process as referred to in some sections, in this chapter and chapter 8. Table 6.5 provides the consultant's suggested partners of the CDN together with the partners who were selected by the REES management team, a review of changes that transpired in the selection of final CDN members from the five DANCED countries.

Table 6.5 Proposed CDN members versus who was finally selected.

Country	Suggested Member and Institution	Changes
Botswana	M.Ed. In EE University of Botswana (Mphemelang Kethoilwe)	The Course developer could not develop the M.Ed. as proposed due to university culture and politics (see chapter 7) He instead developed an In-service course for teachers and educators.
	EE attachment Course – Chobe Wildlife Trust. (Machana Shamukuni)	The course developer attended 5 of the 6 CDN workshops but could not continue due to pressure of work. The funding which he was supposed to get was then given to Malawi who could also not utilise it due to the short time left before the end of the project.
Lesotho	The Lesotho/Rhodes Course – National University of Lesotho (Tsepo Mokuku)	Instead of the Lesotho/Rhodes Course the NUL developed a module which was integrated in the existing BSc course. The module is now part of the university programme calendar.
Namibia	The Namibian/Rhodes Environmental Education Course, Desert Research Foundation of Namibia (DRFN) (supported by Supporting Environmental Education in Namibia (SEEN) and National Institute for Educational Development (NIED) (Georgie Fröhlich and David Sampson)	DRFN went ahead to redevelop the Namibian Rhodes Course but NIED who should have been part of this initiative wanted to develop its own module. This was never developed by the end of CDN as a funded project. The MOU was never signed by authorities at NIED.

Country	Suggested Member and Institution	Changes
	Elective environmental education course module in the Bachelor of Technology (B.Tech) Nature Conservation Course – Polytechnic of Namibia (Marietjie de Klerk)	The course developer was replaced with another from the same institution. The focus shifted to the development of an Environmental Education module for technician courses.
South Africa	Environmental Education Course- University of Venda (Shoni Mphaphali who left the University a year later).	University of Venda was replaced by University of South Africa. This was against the consultant's strong recommendations that Venda, having been a formerly disadvantaged black university during the <i>apartheid</i> era in south Africa, should be supported to build its capacity. The consultant recommended that UNISA, because of its resources and experience could participate in the CDN as a self-sponsored member.
	The Rhodes Research Methods Course redevelopment – (Heila Lotz Sisitka)	The course went as planned.
Swaziland	EE Industry Course – (UNISWA and SNTC–NEEP) (Mandla Mlipha)	The development of the course went as planned but SNTC–NEEP was not directly involved as it also was working on its own course.
	The environment club teachers' course – Yonge Nawe (Simanga)	Yonge Nawe was not finally selected to participate in the CDN. Instead SNTC–NEED was invited. A biodiversity course was proposed in the first CDN meeting but it was never developed due to institutional politics and conflict of interest of the course developer between his official duties and an NGO. There were also a lot of politics between the course developer and his bosses. The consultant did not recommend this particular course developer because she had seen these conflicts much earlier. The group did however; continue to implement the Swaziland Environmental Justice Agenda (SEJA) course.

As can be seen from the Table 6.5, there were a number of changes to the consultant's original list of recommended members of the CDN and the activities they were engaged in. The institutions in which the CDN members were located influenced some of the changes, such as course focus. Other changes were made by the REES management based on their own experience of working with the identified course developers. In a few cases, such as the SNTC-NEEP, the process did not go well as the consultant's recommendation was ignored.

Some founder members thought the idea of involving a consultant in the selection of the members of the CDN was not well conceived as the process is said to have left out the people who were actually working with Gold Fields type of materials, the people who were struggling in course development as stated below:

... The consultancy that was undertaken by independent consultant on behalf of the project ended up going into the countries, finding out what was happening, finding out from the universities and all the various players, who should be the person who should join the CDN. So as a result we have a lot of people at the beginning joining the CDN who were not involved in course development ... you wanted to do it with transparency and you wanted to do it independently but the project was set up actually to do that, whereas the project was conceived to support people who were actually struggling, already with course development, you ended up with people who were not struggling – some of them [those who were struggling] were picked up, some were left ... So as a result what you got was this anomaly of the project being set up to respond to a need ... See one of the things was that it was Rhodes that was concerned that lots of people were being supported to use Rhodes materials. We wanted people to be able to use much more country-based materials. Then other people were saying yes everyone is using Rhodes materials is that not a problem? – you see, so there was this need because of this tension to kind like work completely transparently in the selection of the groups that were going to participate ... but the selection was disembodied from the actual reasoned problematic upon which the project was set up – that made your job difficult because you ended up having quite sizeable chunk of nominated people that had not been actively working in EE course development – were not facing the problems and therefore were starting from scratch (Interviewee #12).

It is my view that the above comment was unfair on the process as the consultant worked with all the key actors, including the commentator. This analysis is further strengthened by the fact that most of the founder members were happy with the way the selection went and had no problem with the people who were selected. As a follow up to Interviewee #12's observation above, I elicited the views of three key actors on the selection process and the responses are recorded in the Table 6.6.

Table 6.6 Views of three key players on the selection process.

"... that scoping report was strategically used for the selection. I think one or two instances there were strategic decisions that were made around, for example, somebody working on the borders between three different countries and the feeling that they would support the course that would be kind of a regional course rather than one country course. And that kind of the strategic decision might have worked but I think that it didn't in this instance ..."

"... from my point of view, I think it is very healthy that the selection process of the CDN was done through that auditing process and there was identification of other potential groups rather than"

those groups already practising in the sense ... this decentered the course developers' network out of this family of the Gold Fields and SADC Courses. They were quite a bit dominant ..."

"... the selection of participants I would be happy to take responsibility for that process because I was as much part of designing it as anyone. But you can't really choose who you gonna work with you in the world if people are chosen by participation. What we found is we did set up some criteria for selection, we did not have enough time, we needed to get going and some people through their participation almost became part of the network - that we did not expect ... while others who were perfect on paper ... were the first to fall off the network for various reasons ..."

Although the discussion with the founders indicates that only one member of those selected to be in the network fell out, data indicates that two others did not produce courses, though they continued to attend all the CDN meetings.

6.4.4 Mobilisation

By the time enrolment was completed, the CDN had 13 members representing 12 institutions in southern Africa. The CDN on the other hand had put in position a two-person secretariat, which I was privileged to head. I was the spokesperson of the network. Of course the secretariat, which was located at Rhodes University (Environmental Education and Sustainability Unit), was supported by the RUEESU and the management team at the REES offices in Howick, Kwazulu Natal – South Africa. The secretariat and the REES management team had a challenge of continuing to mobilise the network by maintaining members' interest. This was done by holding two workshops per year for three years as planned in the project document. The network also supported its members to attend regional and international conferences where they mingled and networked with other professionals. Notable among these were the EEASA conferences that took place in Namibia in 2003; Treverton, South Africa in 2004 and Zambia in 2005. Five members attended the First World Environmental Education Congress (WEEC) in Portugal in 2003. In 2005, the coordinator and one other member (though self-sponsored) attended the third WEEC in Torino, Italy.

An email mailing list (List-Serv) kept every member informed of developments. Publications were also encouraged and a number of CDN members published in accredited journals (see section 9.2.4) . On two occasions members used the network to

further develop their institutional works by asking for reviews and comments. There was only one case in which a member withdrew from the network. However, four other new members joined the network in the implementation stage. Three were from countries that were not originally part of the CDN as proposed in the project document. Perhaps what kept the network intact was the passion that the members had for their work in environmental education; the financial support of R 75 000 (approximately US\$ 11 500) that went to each course developer to develop their own courses in their countries; the members enthusiasm to learn more about environmental education course development; and the way the network seemed to have had created a some kind of ‘competition’ which motivated members to work harder. From the interview scripts, I have reproduced statements (from the interviewees) that suggest reasons for members remaining in the network see Table 6.7.

Table 6.7 Members’ reasons for remaining in the CDN.

“I have a big commitment to it [environmental education] because I think it is well placed to respond to all the issues and risks in southern Africa that are pressing and are impacting negatively on human livelihoods. So environmental education processes can really, if well organised and well managed, respond to those issues and build not only better human livelihoods but also a stronger sense of humanity in the region.” (Interviewee #21).

“The CDN provided the financial and expert support which was lacking initially, resulting in the failure in our earlier attempt [of developing an EE for Industry course]. My institution saw an opportunity of fulfilling its mandate to offer short courses to the local community especially on issues of environmental education which has not yet happened” (Interviewee #10).

“I think it was the enthusiasm of the people that you work with. This sort of motivates you to get involved and do something.” (Interviewee #22).

“Part of our project was meant to be having professional development of the people who were involved with developing the course ... Then it was basically myself then that had an opportunity to have the professional development course ...” (Interviewee #4).

6.5 ORGANISATION AND MANAGEMENT

The organisation structure was deliberated upon at conceptual and proposal writing stage as discussed under the section on interestment. In the light of Urry (2003) and Eade's (1997) different types of networks (see section 2.9.1), the CDN can be said to have been similar to Urry's star or hub (Urry, 2003), and Eade's (1997) spiders' web networks. At the centre of administration and logical support was the coordination office based at Rhodes University, although activities did not always start from the centre as some communication and activities were initiated by the members. It is clear from the data in this study that for a professional network to be successful there must be some kind of governing centre and a defined token which individual members translate according to their needs. The coordination centre may employ rigid and dictatorial approaches or may be more democratic and flexible, supportive and have an inclusive and responsive attitude as the case was with the CDN.

It was observed, in this study, that the provision of a coordinator in the CDN took to more concrete professional development levels the notion of networking beyond the tradition of informal meetings at conferences; exchange of information and ideas (often one direction) and making friends with people in the same field. Some members argued that if there is no coordination, there would be no network. Others attributed their perceived success of the CDN to the flexible, supportive and inclusive attitude of the CDN leadership.

I would put most of the successes down to your flexible attitude and your supportive - the manner in which you supported newcomers on the programme, even including a blind man who lives far away on a remote island, four hours flight from southern Africa and yet as the leader of the CDN, you did everything you could to be inclusive. I just think that spirit made a lot possible (Interviewee # 21).

Openness in the way the CDN was run was another attribute that came out strongly during the interviews. This was echoed by a number of members, for example, Interviewee #18 had this to say:

... logistical support and any other support that we got from the course developers' network was, I think it was very good in terms of ... you know, they were willing and open to provide support to different countries.

It appears that the CDN's ability to broaden the network to include other course developers, other than those defined in the DANCED framework, was a key success factor.

6.6 HOSTING ORGANISATION

The idea of the network being hosted by some organisation also came up from one member, who strongly felt that for the network to succeed it must be hosted by a reputable organisation. One of the lessons from the SEEPS and ENSI case studies (see chapter 5) is that having a hosting organisation, especially in the initial years, is very important to the growth and stability of a network. The fact that the idea of a hosting organisation did not come out very strongly in the interviews with members could have been due to the way the questions were framed, but it seemed as if everyone took it for granted since CDN did not have logistical problems and SADC REEP was a natural host. However, through being hosted in the EESU at Rhodes University, the CDN benefited from office space, communication facilities, and other overhead costs such as water and electricity bills. It also enabled acceptability among other institutions of higher learning. Otherwise, a network that is not hosted will need to pay for all these and has to raise its own money. The role of the Dean of the Faculty of Education in forging partnerships with the CDN member institutions also contributed to the success and acceptability of the network among university partners (see section 8.5.4). Rhodes University also provided research-based insights into course development issues such as the development of the conceptual map of networking and course development processes at the start of the CDN. Unless the network has a clear focus and mandate, it will be difficult for any institution to host it. In the case of the CDN, Rhodes University had vested interest in the success of the network as it was a pioneer in the establishment of the CDN and had an existing partnership with SADC REEP on course development. In the next section, I discuss the process of developing a focus for networking as it unfolded in the CDN.

6.7 DEVELOPING A FOCUS FOR NETWORKING

6.7.1 Curriculum deliberation

At the inaugural meeting held at Rhodes University in South Africa, in July 2002, the CDN members deliberated on the issues and challenges associated with course development by drawing on early research on course development in the SADC region under the SADC REEP (Janse van Rensburg & Le Roux, 1998; Lotz, 1999; SADC REEP, 2002) and sharing their own experience in course development. The process of deliberation through stories of success and challenges in course development helped to create a 'curriculum' as articulated by Lave and Wenger (see section 3.5) which had to be 'learned' by all the members. Through this process, a curriculum framework (hereinafter called CDN Framework) was developed. The CDN Framework was made up of six generic issues associated with course development processes, namely:

- Curriculum deliberations;
- Course materials development;
- Course delivery strategies;
- Assessment and accreditation of learning;
- Monitoring and evaluation of courses;
- E-learning and web based course design (WSR 1)

The above six generic issues shaped the networking process, professional development (see chapter 7) and institutionalisation of environmental education courses (chapter 8) over the 4 years of the project life. Network members draw on the framework to develop environmental education courses that were responsive to their own national and institutional needs. Thus the framework became the artifact that shaped the course development process (see section 3.4.2). It transformed the process of course development in the partner institutions as well as at the CDN level. In the process it was also transformed as members of the CDN adapted and used it in developing courses. At the CDN level the CDN Framework was modified according to the prevailing situations. For example, the issue of Internet based courses was not pursued when it became

apparent that most universities had inadequate access to computers and internet facilities and that the venture was beyond reach of the majority of network members.

Although the framework was originally not part of the project document, it provided the direction for course development processes, networking and professional development as one of the founders recalls:

You might recall in the first workshop, when we went into this thing. We weren't quite sure what would happen ... we decided to focus on the workshops around topics like curriculum deliberation, resource materials development, assessment ... We then all accepted that those were the themes for the years. Now, that wasn't in the project document. Isn't that fantastic that there is maturity in the leadership and the leadership of the group to respond to those suggestions and then that became the pattern for the working together? ... I think the curriculum design orientation was good ... (Interviewee # 21).

Aside from the six planned regional workshops, members of the network also met in small interest groups of two or three to work on an issue of interest. The interest groups were formed around three major emerging areas around which courses were being developed by the members. These were: environmental education for industry; environmental education for formal educational institutions; and environmental education for informal sectors such as community based organisations and NGOs. Networking was done under the premise of participation, partnerships and cooperation of members. This centered on sharing of skills, experience and resources among the network members and other course developers in the region. I have discussed details of how course and professional development were enhanced by means of the CDN Framework in chapter 7. However, in the next section I share how data from this research indicate that the CDN Framework enabled the network to come up with tangible outputs.

6.8 PROJECT OUTCOMES

After running for nearly four years as a funded project under Danida, the CDN established itself as a vigorous network in southern Africa and Africa at large. It achieved various outcomes, most of which were not planned. The outcomes related to professional development (see chapter 7) and course materials development within partner

institutions, other institutions under the SADC REEP framework and African universities under the United Nations Environment Programme. This section sheds more light on some of the key outputs of the project as identified by this study.

6.8.1 Course materials development

Through the CDN, 13 environmental education courses were developed by the network members. The courses address a range of priority areas as identified by individual country's national policies and regulations related to environment and education (see chapter 7). The 13 courses can be clustered in the following categories: courses for pre-service teacher training, in-service teacher training, environmental education for industry, and an environmental education module for engineering students. Figure 6.1 shows a photograph of some of the course materials developed under the CDN.



Figure 6.1 Course materials developed under the CDN

Most of these courses are institutionally located and are now an integral part of the course frameworks in different countries in southern Africa. Table 6.8 shows the courses developed in different countries in southern Africa through the CDN between 2002 and 2005.



Table 6.8 Courses developed under the CDN between 2002 and 2005.

Network Member	Institution	Course Developed
Mrs Georgie Fröhlich (Namibia)	Desert Research Foundation of Namibia	Adaptation of the RU/Gold Fields Course for the Namibian Context
Mr Mphemelang (MJ) Ketlhoilwe	University of Botswana	In-service course for educators and teachers
Prof Heila Lotz-Sisitka /Prof Rob O'Donoghue (South Africa)	Rhodes University	Research Design Decision Course
Mr Mandla Mlipha (Swaziland)	University of Swaziland	Component course of a degree programme / short-term, semi-distance waste management course
Dr Tsepo Mokuku (Lesotho)	National University of Lesotho	Semester EE course within a degree framework / in-service EE course for teachers
Mr Sivumelwano (Vumi) Nyembe (Swaziland)	Swaziland National Trust Commission	Biodiversity course. Developed only up to draft stage.
Prof Cheryl le Roux (South Africa)	University of South Africa	Redesigning of Advanced Certificate in Education (ACE) course
Mr Steve van Staden (Namibia)	Polytechnic of Namibia	Environmental modules for technician courses
Mr Evaristo Kalumba (Zambia)	Mufulira College of Education	Environmental education module for pre-service teacher training
Mr Khemraj Sooknah (Mauritius)	Mauritian Wildlife Club	Marine Ecology Training Programme

6.8.2 Supporting environmental education in southern Africa

The CDN drew on its networking experience in course development to support environmental education in southern Africa through the SADC REEP. This support included the running of professional attachment programmes for people involved in the tutoring and development of environmental education courses in the region. Two such professional workshops were held in January 2004 and May-June 2006. The 2004 attachment programme focused on the development of course materials, while the 2006 attachment programme focused on course assessment and related activities. Selected CDN members worked with colleagues at the SADC Regional Environmental Education Centre to run the two attachment programmes. Both programmes drew extensively on the work and experience of the CDN.

6.8.3 The Course Developer's Toolkit

Drawing on the experience of a range of course developers in southern Africa recorded in early publications (Lotz & Janse van Rensburg, 1998; Lotz, 1999; Russo & Lotz-Sisitka, 2003), the CDN embarked on a project to develop and 'repackage' a series of 5 source books and a monograph of case studies on course development processes in southern Africa into a 'Course Developers Toolkit'. In this section I only refer to the toolkit as one of the outputs of the CDN. I have provided details of the course developers' toolkit in Chapter 7 where it is discussed in the context of professional development. The toolkit is made up of five source books, namely:

1. Source book 1: Deliberating curriculum frameworks in adult learning (Lotz, 1999);
2. Source book 2: Supporting adult learning and tutoring (Fröhlich, 2006)
3. Source book 3: Course materials development for adult learning (Olvitt & Russo, 2006);
4. Source book 4: Development, adaptation and use of learning support materials (Russo & Lotz-Sisitka, 2003);
5. Source book 5: Course evaluation in adult education programmes (Ketlhoilwe, 2006).

The Course Developers' Toolkit was produced to share lessons with the wider constituency of course developers in southern Africa. CDN members expressed a need to document and share evidence of their lessons from the network and work in other southern African settings. Apart from source books 1 and 4 which were published in early course development networking and outside the Danida funded CDN, all the other four publications were published under the CDN. Nevertheless, the CDN initiative motivated for the revision and repackaging of the early books (book 1 and 4) in the light of the Course Developers' Toolkit. The revision and development of the books in the toolkit was influenced by current trends and shifts in thinking about course materials developed influenced by Rhodes University and SADC REEP (see details in Chapter 7). Coincidentally, the development of the Course Developers' Toolkit started at the beginning of the United Nations Decade on Education for Sustainable Development. As such, it provided inspiration and support to other course developers who were trying to mainstream environment and sustainability into formal and non-formal education and training institutions.

By drawing on the Toolkit and the networking process, the CDN members took a leading role in the UNEP-led project to mainstream environment and sustainability in university education (MESA) which culminated into the development of an ESD Innovations Course and Toolkit for African universities called *Education for Sustainable Development Innovations: Programmes for Universities in Africa* (UNEP, 2006b).

6.8.4 ESD Innovations: Programmes for Universities in Africa

The Course Development Network proved itself as an innovative and valuable support mechanism to environmental educators under the SADC REEP support framework. Subsequently, through presentations at global and regional forums such as EEASA conferences (2002, 2003, 2004 and 2005), 5th World Parks Congress (2003) and the First World Environmental Education Congresses in Portugal and Italy (2003 and 2005 respectively), partnerships and collaborations were forged beyond southern Africa as reported in the third project progress report (REES, 2003b)

As a result of the networking during the First World Environmental Education Congress in Portugal, for example, the CDN (on behalf of SADC REEP) collaborated with the United Nations Environment Programme to develop an ESD Innovations Course and Toolkit for African universities called *Education for Sustainable Development Innovations: Programmes for Universities in Africa*. The UNEP ESD Innovations Course and Toolkit's aim was to strengthen and complement the broader dimensions of mainstreaming environment and sustainability in Africa (MESA) Universities Partnerships. CDN provided the conceptual framework upon which the course was developed. The process was based on the key principle of curriculum **deliberation**. This principle informed the course development process under the CDN (as used in the development of the CDN Framework) and a key orientating principle in curriculum and course development processes in the SADC REEP.

Prior to the development of the *ESD Innovations Course and Toolkit*, the CDN members were represented at the three consultative meetings, two in Kenya and one in Howick – South Africa. The consultative meetings which formed the initial planning and course

deliberation, were based on sharing experiences in the development and teaching of courses for universities. Participants (who included lecturers, professors and managers from at least 30 African Universities) shared stories of successes, struggles and exemplars from all over Africa and beyond. Based on ideas derived from the participants' stories, the SADC Course Development Network members worked together to develop a framework for a three module course. The modules and their related module outcomes are presented in Table 6.9 below.

Table 6.9 ESD Innovations Course and Toolkit – Modules and outcomes.

Module No.	Module Outcomes
Module 1 Environment, Sustainable Development and the University in Africa	At the end of the module, course participants should be able to: Conceptualise the relevance of ESD in enhancing tuition, research, community engagement and/or initiatives in universities.
Module 2 Innovations in Teaching, Research and Community Engagement work	At the end of the module, course participants should be able: Design and apply innovative approaches to teaching, research and/or services in ways that foster principles and values of sustainable development and enhance professional ethics, the quality of learning and the effective use of resources such as ICT.
Module 3 Institutional Capacity Development for ESD	At the end of the module, course participants should be able: Develop and apply innovative strategies to strengthen institutional capacity to address and respond to environmental and sustainable development issues.

This framework formed the basis for further deliberations within a wider university lecturer constituency at the third meeting in Howick. The deliberation process helped to refine the course outcomes, scope, content framework and the methodology. It further laid the foundation for the writing team which was spearheaded by the SADC REEP. The course is now being implemented in a number of universities in Africa. It is also being translated into French for Francophone countries as a UNDESD initiative.

6.8.5 Unintended outcomes of the network

Other than the planned activities, there were a number of activities that emerged in the process of implementing the CDN. For example, members of the network were able to publish journal articles in the southern African Journal of Environmental Education and

other refereed journals. One member, Professor Cheryl le Roux, published a research book for use with her students. The publication *Our environment. Our stories* (Le Roux, 2004) emanated from a need identified during the networking processes. A call for papers was circulated among the CDN members and other course developers as well as researchers in the region. The aim of the publication was to showcase environmental education research within a variety of SADC contexts. The stories were meant to provide the basis for deliberation and reflection within environmental education research courses taught *inter alia* for formal education at UNISA. Through this publication, CDN members were provided an opportunity to share their stories from their environments. They were encouraged to tell others about their work and showcase the research they had undertaken. Eight members of the CDN and its associates contributed to the publication. Although the editorial work and conceptualisation was done at UNISA, the book was published as an output of the SADC Course Development Network.

Other CDN members were able to publish in the *CDN Monograph: Cases of Course Development in Environmental and Sustainability Education in Southern Africa* as shown in Table 6.9. Others took the lead in the development of the Course Developers Toolkit as explained in chapter 7.

Table 6.10 List of CDN members' contributions to the CDN Monograph.

Course Development Through Networking: A case study of a tertiary education institution's experience (Le Roux, 2005a).
The Environmental Education Participatory In-Service Course for Educators (Ketlhoilwe, 2005).
Environmental Management and Training in Industry, Swaziland (Mliphahle, 2005a)
Industrial Safety, Health and Environmental Management: Courses for Namibian Vocational Instructor Trainees (Van Staden, 2005).
The Development of the Namibian Environmental Education Certificate Course (Fröhlich, 2005).
WWF Zambia Education Programme Training of Trainers Certificate Course in Environmental Education (Mwambi, Lupele & Chisaka, 2005).

6.9 CONCLUSION

This chapter has provided a descriptive analysis of the SADC Course Development Network by tracing the origins of environmental education course development

networking processes in southern Africa. The historical roots of networking, which started with the Gold Fields Course in South Africa, provided the foundation upon which networking in course development in southern Africa grew. With the establishment of the SADC REEP, more formalised partnerships and collaborative work started to emerge. The SADC REEP funding and support framework contributed to the spread and consolidation of networking processes in the region. Furthermore, a number of people from the region who attended the Rhodes University/WWF International course (later called the Rhodes/SADC International Certificate Course in Environmental Education) were motivated to start similar courses in their countries. This was made easier by the fact that the Rhodes/SADC materials were copyright free and course developers were supported to adapt them in different contexts. However, the demand for support from the Rhodes University/ SADC REEP alliance overwhelmed the capacities of the two institutions, leading to the formation of the CDN. The chapter has also provided underlying assumptions that shaped the formation of CDN. These are vision, beliefs, values, intents and perceptions of founders and managers of the network that were drawn from interviews and project documentation. The chapter has also provided an overview of how the CDN evolved by means of ANT's moments of translation. ANT provided an interpretation lens to examine how the actors' associations lead to the establishment of the network and its practice (Fadeeva, 2005a). The chapter further described the key outcomes of the network that include both intended and unintended outcomes. The chapter has illustrated that the outcomes and practices were shared within the network and beyond.

CHAPTER 7

PROFESSIONAL DEVELOPMENT IN A COMMUNITY OF PRACTICE

7.1 INTRODUCTION

In chapter 3, I introduced Lave and Wenger's concept of Community of Practice where learning is premised on the mastery of knowledge and skills through social interactions. The Community of Practice requires newcomers to move from being legitimate peripheral participants to full participants in the sociocultural practices of a community. In an example of Alcoholics Anonymous, Lave and Wenger demonstrate that learning can also take place without necessarily starting at the periphery but by sharing stories of failure or success (see section 3.5). The approach of sharing stories was used at the inaugural meeting of the CDN. This chapter provides findings on the CDN members' perceptions of professional development. The findings are interpreted by means of a heuristic developed from Lave and Wenger's concept of COP as discussed in chapter 3, section 3.5. This includes: access to the community of practice; structuring resources for learning in practice; generation of identity and motivation; organisation of practice; participation and meaning-making; and transformation of practice.

7.2 ACCESS TO THE COMMUNITY OF PRACTICE

By access to a Community of Practice here, I do not only mean the physical availability of individual members to the CDN, but it is also access to the culture, norms and practice (i.e. course development processes) of the CDN (Lave & Wenger, 1991). Access to the Community of Practice is said to have been enabled through sharing stories of lived experiences in course development processes, curriculum deliberation leading to the development of a 'learning curriculum', common course structure, and institutional culture and politics.

7.2.1 Sharing stories of course development

Based on the SADC REEP principle of building on existing structures and research experience (SADC REEP, 2002), the CDN members shared stories of their course development experiences i.e. looking at their failures and successes at the inaugural meeting. Many had no or little experience in course development processes as recorded at the last workshop in Mauritius (WSR 6). They all (including those with experience) came as newcomers into CDN and were interested in learning more about the practice of environmental education course development processes. The process of deliberation through story sharing created a 'learning curriculum' as articulated by Lave and Wenger (see section 3.5). The learning curriculum had to be 'learned' by all the members. Through deliberation on course development processes and drawing on previous research done around course/curriculum development under the SADC REEP (Lotz, 1999; SADC REEP, 2002) as well as their own experience, the network members agreed on a curriculum framework (called CDN Framework) that shaped course development processes, networking and professional development as indicated in chapter 6. The CDN Framework was made up of six generic issues associated with course development processes, namely:

- Curriculum deliberations;
- Course materials development;
- Course delivery strategies;
- Assessment and accreditation of learning;
- Monitoring and evaluation of courses; and
- E- learning and web based course designing (WSR 1).

7.2.2 The CDN Framework

The CDN Framework as a technology of practice (see section 3.4) provided an arena for participation and thus enabled members' access to professional development in course development. It formed the basis for networking and professional development as

individuals developed courses in their institutions and countries³⁵. The framework was also the basis for 'working together' (see section 2.10.1) during the six regional workshops that were run during the life of the project. Although the framework was originally not part of the project document, it provided the direction for course development processes, networking and professional development as indicated by CDN workshop programme (see Table 7.1).

Table 7.1 CDN Workshop Programme.

Date	Workshop focus	Venue
30 th July to 1 st August 2002.	Planning workshop.	Grahamstown, South Africa.
29 th November to 2 nd December, 2002.	Course curriculum deliberations.	Gaborone, Botswana.
1 st to 4 th April, 2003.	Course materials writing.	Maseru, Lesotho.
26 th to 30 th June, 2003.	Assessment and course delivery strategies	Windhoek, Namibia.
1 st to 4 th December, 2003.	Course evaluation and monitoring	Happy Valley, Swaziland.
8 th to 13 th March, 2004	Course materials review	Bell Mare, Mauritius.

The CDN Framework provided the key curriculum features (Lotz, 1999) upon which the courses were built by each of the members of the network. In other words, the framework became an organising focus for most of the courses that were developed in the network to enable professional development. It also became the organising framework for regional workshops and the networking process in the CDN. Participants who already had a well laid out course outline before they came to the CDN also found the framework useful. They used it to examine and review their existing outlines and courses. The framework was said to provide more insight and a framework for self critique (reflexive review) into ongoing course development processes. Inexperienced course developers followed the framework to develop their own courses from scratch. One of the network members drew on the framework to provide insights into the process of adapting an existing course from one context to the other. Like other members of the CDN, the course developers used the

³⁵ The last theme on e-learning was never used due to logistical problems such as the cost of setting up internet based courses. There was also apparent lack of computers in a number of CDN partner institutions.

framework themes to examine areas in their course that needed more depth and improvement. The study shows that the themes that made up the CDN Framework helped the members to not only clarify their own approaches to course development but to think deeply about the processes of developing courses in context. As Interviewee # 11 recalls “... they sort of clarify what sort of work ... would constitute a beneficial course within the university setting within the African setting”.

Although the courses under the CDN were being developed for different levels of learners in the different countries and institutions i.e. courses for university students, NGO and industries, it appears that the generic framework became useful for uniting the network and for creating a common purpose and framework for dialogue. All the members drew on the framework but each developed a course that met the demands of their countries, institutions or learners. Some members argued that it would have been more effective (in terms of time and access) if they all worked on a common course structure.

7.2.3 Common course structure

Owing to the difficulties and time it took for some CDN members to develop their own courses, one founder member of the network strongly suggested that perhaps we should have worked with one common structure such as the Gold Field Course, and let everyone adapt it in their own contexts. He argued that the CDN was initially formed to support people who were struggling with the Rhodes University/SADC REEP related courses. He also pointed out that it would have been more useful to adapt one of the courses instead of letting people start courses from the scratch. He explained how the SEEPS (see chapter 5) worked with a common structure in the European network context:

See what they did in Europe, in their networked programmes like in the SEEPS. they came up with a common structure and one country wrote this part or contributed to this part and another country contributed to that part. So instead of each group developing its course independently what they did was they had this agreed framework and everyone wrote up their case studies and their activities and their workshops and then Tony Shallcross, who was the course developer, compiled them into SEEPS file. Everyone took

the SEEPS files back to their countries. They ended up using them in different contexts and purposes. It was almost like responding to the problem in course development which is the problem of resource files. Now we already had a resource file. As a matter of fact we had two and both of which were very well done ... And that was the Gold Fields Course and the Industry Course. So these should have become the basis of the network ... (interviewee # 12).

A number of the CDN members agreed that working with one common course structure as done in the SEEPS project (see section 7.2.3 and the above quotation) would have made access to course development much easier and would have saved on time for the majority of the course developers who were struggling for over two years to get new courses developed. They, however, argued that environmental education was broad based and cross-disciplinary in diverse geographical locations across southern Africa. Hence, the chances of bringing courses which did not align with the participants' theoretical orientations were high. They argued that working with common generic issues, as done in the CDN, rather than common structure for content gave more lateral freedom for people to work up their own particular course and trust. They admitted that adopting a common course structure would not have sat well with their institutional structures. They also observed that most principles of course development were shared through the development of the CDN Framework, which was shaped by ongoing deliberations. Some members feared working with one course structure, such as the Gold Fields course, would be perceived as SADC REEP and its partner Rhodes University imposing a course developed in one context into others. A founder member described such an approach as imperialistic " ... *I think one of the most harmful things would be if South Africa became kind of imperialistic and said - hey we have a great course and now let us see how it can be adapted elsewhere ...*" (Interviewee # 21). Table 7.2 provides some answers from selected course developers when asked about their view on working with a common course structure for everyone.

Table 7.2 Participants' response to the idea of a common course structure.

Question to the CDN members: Do you agree with the notion that the network should have developed a common course that would have been adapted / adopted by the members in their own contexts? Please explain.

Some responses

Interviewee # 10

It must be admitted that my answer to the question is biased by the fact of me being a member of the CDN who has developed a country-based course. Therefore, I've seen a lot of advantages of developing a country specific course. My fear of single common courses, adaptable to all the scenarios in the region, may not really be strong when it comes to local issues and content which to a large extent may be lost, clouded and omitted in the adaptation process. Why waste our precious time designing common courses to be adapted later when resources were available to develop country-based courses.

Interviewee # 11

Surely that would have not resulted in a course similar to the one I've developed particularly. Yeah, I recall that some of the ideas that I decided to input into the course derived from my experience in Lesotho schools through the Lesotho Environmental Education Support Project. My participation in that project clearly crystallised some areas of need, as I visited schools. And as a result I very cautiously noted how I would decide - based on what I've observed in schools- that the course should address ABCD and I think the course, the materials, the booklets that I've said I've developed on Lesotho fauna - I know that those materials are a result of my observation in schools in Lesotho, as I was monitoring the implementation of the Lesotho Environmental Education Support Project. I noticed that there is a need for such materials.

Interviewee # 23

Strongly disagree! ... No, I really strongly disagree. I think that the institutions are also different and to try and even adapt a Gold Field Course would never have sat comfortably with institutional structures that people are trying to work in. It would have made the institutionalisation of the course extremely difficult. So for that reason, I strongly disagree. The other thing was that Rhodes University often gets pressure about the kind of hegemony of environmental education, which I think is really harsh, but Rhodes are sensitive to it. People draw on Rhodes ... they found course materials easy to adapt, they are pretty much copyright free. So the thing is that Rhodes are doing huge amount of support in environmental education in the region ... I think this [referring to common course structure] would have opened up that possibility [hegemony talk] even more if we kind of said look it needs to be based on Gold Fields orientation and then adapted ... I think it was much better that it was generated in the institutions. ...Um people were able to learn new course designs and new ideas and things.

Interviewee # 9

I don't think that would have been really fruitful. I think that people had the opportunity to work with whatever course was available because we made them available at the beginning. But people need to develop things that are most relevant in their own contexts. So I think that the network actually had, in a sense, a good mix of allowing people to adopt things that they wanted to do and if not to develop things from scratch. And I think that is helpful because otherwise you get stuck with one thing.

Despite the fact that a collection of available courses under the SADC REEP were introduced at the inaugural meeting of the CDN, none of the members took a deliberate

step to adapt them, except for one member who was already in the process of adapting the Gold Field Course. There was a subtle resistance to adapt existing courses but what was evident was that the network members drew on the existing materials to develop their own courses. The Industry Course in Swaziland, for example, drew heavily on the Gold Fields Industry Course for South Africa and Malawi.

It seems one of the resistances against adopting a common course structure had to do with the institutional culture and politics around course development. The study shows that in some cases, the institutional culture and politics affected the issue of access to the Community of Practice.

7.2.4 Institutional culture and politics

Institutional culture and politics affected the course development process and acceptability of the courses developed under the CDN. Some participants observed that the CDN should have spent some time researching the institutional culture and politics and in particular how SADC universities and other higher education institutions (HEIs) develop courses. This study shows that, traditionally, courses in HEIs have been developed by individuals or experts using what has come to be known as RDDA³⁶ model (Taylor, 1997b; section 2.10.1). The process involves the experts researching, developing, disseminating the developed courses for teachers and other educators to adopt and teach. Considering this in Lave and Wenger's (1991) notion of access to Community of Practice means that newcomers or novice course developers would never have an opportunity to become full participants or professionals. Novice course developers are denied access to the Community of Practice of course development processes in most HEIs in southern Africa. The institutional structures do not allow them to develop courses as course development is viewed as the preserve of experts (see for example, Lupele, 2005b). Lupele (2005b) in an introductory chapter to the *Monograph*:

³⁶ RDDA (Research – Develop – Disseminate - Adopt) approach suggests that materials should be developed by experts and disseminated to schools, communities and learning centres (Taylor, 1997; Russo & Lotz-Sisitka, 2003).

Cases of Course Development in Environmental Education in southern Africa notes that some cases recorded in the monograph provide evidence of a historical scholastic reasoning that argues that developing courses is the preserve of certain categories of academics (Namafe, 2005; Van Staden, 2005; Nhamo, 2005b). Some case studies in the monograph highlight some of the difficulties and challenges of introducing innovations in course development processes in learning institutions in southern African HEIs. The following vignette summarised from Namafe (2005:18) illustrates the difficulties he faced in introducing MEd (Environmental Education) at the University of Zambia (UNZA) despite the fact that he holds a PhD. The vignette exemplifies the nature and complexity of institutional culture and politics in constraining access to a Community of Practice:

Charles Namafe's vignette

One negative implication of interdisciplinarity is the difficulty involved in developing such programmes owing to the numerous key stakeholders to be consulted. This factor partly explains the length of time it took [six years] to develop the MEd (Environmental Education) programme at UNZA. In retrospect however it may be argued that people who champion academic ethnocentrism³⁷ and who may be chairing various approval sessions of the programme development process could use this negative factor of interdisciplinarity to deliberately frustrate progress of programme development. In short, as was suspected at UNZA, the human element of academic ethnocentrism could frustrate progress in course development. Academic ethnocentrism is the belief held by one section of an academic establishment that they are better at certain tasks than their fellow colleagues working within the same institution.

It is likely that some academic role players in certain universities may assume that the task of developing a course – especially a postgraduate degree programme – should be the preserve of people holding the rank of professor. The belief system prevailing at the UNZA, about course development and supervision of research by postgraduate students *vis-à-vis* professors is gleaned below:

... the council adopted the new job descriptions (for professors) which included the duties that extend beyond the generic teaching and research responsibilities of all the academic staff, such as *developing frameworks for the approval of the new programmes of study and research*, and monitoring their effectiveness in meeting students' requirements and the university strategic objectives. (*The Post*, Wednesday February 4, 2004, emphasis added by Namafe).

³⁷ Sumner cited in Namafe (Namafe, 2005) describes ethnocentrism as a view of things in which one's own group is the centre of everything, and others are scaled or rated with reference to it ... Each group nourishes its own pride and vanity, boasts itself superior, exalts its own divinities and looks with contempt on outsiders. Each group thinks its own folkways are the only right ones, and if it observes that other groups have other folkways, these excite its scorn.

Ethnocentrism was widely evident among institutions in the network where staff members were not involved in the process of course development but rather taught courses which were developed for them by experts or hired consultants. Hence, they remained peripheral participants, if we have to draw on Lave and Wenger's (1991) work. Some CDN members, despite having qualifications up to masters or doctoral degree level have had no experience of developing courses as the institutional traditions and politics did not allow them to do so.

... the politics of the university does not allow its lecturing staff to do course development ... In many cases our colleagues are getting to professional competency in course development, like I am, but they are not in universities that are accustomed to listen and accepting courses that are developed by their own lecturing staff. The majority of the lecturing staff if you investigate are lecturing a course that has actually been set up by a team often with overseas people who come in and work with the department and set up the course. So the job of the lecturer in the eyes of the university is to teach and not to produce lectures and design courses ... They haven't actually been given the authority or autonomy within the universities to actually be putting up course frameworks ... (Interviewee # 12).

The above quotation can further be confirmed by some participants' own submission through expectations and interests in course development, that they had no previous course development experience at the time they were recruited into the CDN (see section 6.4). Hence the academic demands of the CDN were beyond some members' scope of work. But the available resources, reflexive approaches to course development and experienced members enabled novice course developers' access to the practice and accepted them as colleagues in the CDN. It was also clear that course materials *per se* are not developed for most of the partner institutions (especially university partners) and lecturers teach from a programme outline developed by the department.

Conversely, evidence showed that some institutions go beyond the development of course outlines or synopsis to the actual development of course materials, as is the case with Rhodes University and the University of South Africa. Besides the course outlines, the two universities produced course materials. UNISA (by nature of being a distance learning institution) went further to develop study guides. Furthermore, this study shows that it was not all HEIs which denied staff members opportunities to develop courses. In some HEIs the existing institutional culture and politics allowed their staff members to

develop the courses they taught. However, even in such situations, where novice course developers are allowed access to the practice of developing courses, it is often at the periphery and some of the developed courses are never approved for teaching as they failed to go through rigorous review and approval systems.

The CDN as a Community of Practice provided all the numbers an opportunity to develop courses and therefore gain access to the Community of Practice. Some of these courses have been accepted and recognised to run in their respective institutions and countries (see chapter 8). The developers have moved from being peripheral participants to full participants in the course development COP within their universities/institutions.

7.2.5 Partner support

Access to the course development processes (in the context of the CDN) was enabled by the available financial and logistical resources within the SADC REES. Each participating member (except those who had other sources of funding) was entitled to a sum of R 75 000 (approximately US\$ 11 500) for the purpose of developing courses. The CDN members had access to a range of ongoing activities, experienced course developers, their colleagues and resource materials, which provided mechanisms for participation and learning in course development processes. However, data from this study indicates that in some cases, access to the practice of course development was by other factors. In this section, I discuss access to the Community of Practice by looking at the CDN Framework and institutional culture and politics as it emerged from the data.

7.3 STRUCTURING RESOURCES FOR LEARNING IN PRACTICE

In section 3.5.2, I opened the discussion of structuring resources for learning in practice with a quotation from Lave and Wenger (1991) in which they observe that people often think of the master-apprenticeship relation in a learning situation every time apprenticeship is mentioned. They argue that in practice the roles of masters are variable across time and place. They argue that in shaping the relation of masters to apprentices, the issue of conferring legitimacy is more important than the issue of providing teaching (Lave & Wenger, 1991). This observation is true to this study where some members felt

the learning process was inadequate in the absence of an expert as explained in the following section.

7.3.1 Need for experts

Although the learning processes were said to have gone well with more experienced members providing input, some members expressed the need for experts to enhance professional development in CDN. There was a feeling among some members that the CDN should have involved more experts in the course development processes. This is despite the fact that most of the old timers (in course development) who facilitated some of the aspects of the course were 'experts' who had been involved in course development for a number of years. Some who facilitated sessions in some workshops are renowned environmental educators in southern Africa with a number of publications on course/curriculum development to their credit. Others had done extensive research work, as the following excerpt from an email exchange seems to suggest (this followed my open invitation to CDN members to help facilitate some aspects of the workshop on assessment and course delivery strategies):

I am happy to help out with something on tutoring at the next workshop. I am currently doing some research on it but am unsure as to how far I will get by June – but I should have something to contribute! Sarah also said that her department is 'all about tutoring' so I'm sure she will also have something. I'd also be interested to know what others would like with tutoring and facilitation cause I can then also start looking around for people and resources for the next workshop ... I'll look into my things for something to add on course development. I have a small paper on accreditation of the Namibia EE course in Namibia and something on the origins of the course. I'll just need to 'pretty them up!' I also have copies of our new look Namibian version of the Rhodes University Gold Fields Course if any one is interested (*Email communication # 1*).

Where expertise was lacking among members, the CDN outsourced facilitators to run some aspects of the course development processes. Table 7.3 shows the outsourced facilitators and aspects they covered during workshops.

Table 7.3 Facilitators who supported the course development processes.

Workshop No.	Name of Facilitator	Aspects covered	Institution
2	Prof. Coryce Haavik	Grant Proposal Writing	University of Botswana
2	Mr. Dennis Lee	Assessment and accreditation	European Union, Namibia
2	Dr. Marilyn Lee	Writing Objectives	University of Botswana
2	Dr. Wangiku Mwagiru	Course design – concepts and development	University of Botswana
3	Christine Randell	Course materials writing	SAIDE ³⁸
4	Mr. Steve Murray	Assessment in EE	Support to Environmental Education in Namibia (SEEN)
4	Mike and Kim Ward	EE course deliberations	SADC REEP
5	Di Wilmot	Portfolio assessment in/for teaching and learning	Rhodes University
5	Peles Biswalo	Monitoring and evaluation working with exemplars in semi-distance courses	University of Swaziland
5	David Manyatsi	Overview of monitoring and evaluation of courses	University of Swaziland

Members who held the view of need for experts seemed to have been suggesting that the experts should have developed the course for everyone. They argued that the process of learning from each other did not support professional development fully “... *maybe if you, Christine and Heila had been able to work on a fully fledged course, it would have been more middle ground ...*” (Interviewee # 12). Interviewee # 4 argued that the CDN members needed a lot more expertise for professional development from the experts in the field. But she was quick to point out (like other members) that learning from each other was a lot better as it promoted self-reliance and less dependence on experts. She elaborates “... *in a way you learn to rely on yourself by actually figuring out what is happening out there and you learn to see what is working for others that could possibly work for you ...*” (*ibid*). It would seem that members who were advocating for expert

³⁸ Southern African Institute of Distance Education

input, had no confidence in the CDN members producing a course on their own; they would have loved the course to be developed for everyone by the experts.

7.4 GENERATION OF IDENTITY AND MOTIVATION

The section provides insights into participants' own understandings of professional development (how they perceive themselves as having achieved maturity in the field). It explores how participants thought they had grown professionally after going through the process of course development (identity in the Community of Practice). The emerging notions (from data) of professional development are discussed under themes: proficiency; confidence; experience transfer; and overcoming challenges in course development processes.

7.4.1 Proficiency

Participants' perceptions of professional development in the context of the CDN varied widely. However, they generally related the concept of, among other things, an ability to proficiently perform tasks associated with course development processes such as these laid down in the CDN Framework. Interviewee # 6, for example, understood professional development as something that makes a person become more proficient in their work i.e. course development (here I would add) *in the Community of Practice*.

Some members mentioned their ability to develop what they called quality course materials and articles in peer-reviewed journals as some evidence of their professional development. Further professional development was seen as the ability to develop courses in a creative way that is responsive to contextual needs. Some members related professional development to having the ability, the skill to be able to develop courses that are responsive to country and institutional needs. Professional development was also associated with confidence in course development processes.

7.4.2 Confidence

Some members claimed that through the interactions with others with similar challenges, in the CDN, they gained confidence in the production of course materials. Confidence in the production of course materials featured prominently as one of the characteristics of professional development. It was observed that the CDN provided the social context which allowed interactions and learning (professional development) to take place as noted in this quotation:

There was no way in the world that I would be as confident and as willing to participate. We need to have time to get together and discuss things that are important to our interests. Networks obviously provide that (Interviewee # 4).

The interviewee quoted above, however, cautions that unless networks focus on the members' passion and interests, professional development cannot be easily realised. She argues that if environmental education (in the case of the CDN) is not a passion and interest of any member of the network, then such members' professional development path will be difficult to realise. She elaborates:

For me it is because I am enthusiastic for the whole process and I am sort of committed to the task. I am not really supported by the CDN in terms of funds. I am here because I want to be here. I really want to be in this process ... It is really closely associated with what I am doing in my project. (ibid).

Another member had this to say:

I really enjoy it ... It is a new vision for me and I really enjoy working in this particular field [environmental education] because I have got inherit love for nature and whatever goes on in nature. I really enjoy the experience and I will certainly recommend it to anybody to get involved in a thing like this (Interviewee # 22).

Apart from the passion and interest, which seemed to have motivated members to work hard, confidence among CDN members is said to have been built, as members worked and interacted together. The CDN seemed to have provided a forum where course developers worked together, motivated each other and developed the ability to discuss and put courses together in a participatory manner. They claim that the fact that many

people contributed to their course materials through the peer reviews, gave them confidence that the materials did not contain their own thoughts but those of others, who may even have been more experienced in developing and running environmental education courses. The skills, knowledge and experience gained through the CDN was said to be useful and applicable to other similar circumstances.

7.4.3 Lessons and experience transfer

Professional development was also viewed in terms of how members were able to take lessons and experiences from the CDN to their work contexts and situations. One participant explained how, despite not having developed the course at the time of the interview (three months after the end of the project), he was able to use the experience, knowledge and skills gained from the CDN into other similar activities at national level (in his country). Another cited an example where the CDN members were involved in the development of the United Nations Environment Programme (UNEP) Mainstreaming Environment and Sustainability Innovation Course (see section 6.8.4), when he said:

Isn't amazing that ... you and I just spent some time in Kenya and how confident we were with course development there because of our experience? And we just have been at the University of Uppsala. We were sharing the course development network with them ... we have learnt so much through this sort of thing that we can go wider beyond our widest expectations. And if we can keep the integrity there, the sense of humanity, the sense of working together, of allowing people to work on these things as hard as they like ... I think this process can carry on from strength to strength (Interviewee # 21).

Nearly all the CDN members expressed satisfaction with their professional growth in interviews carried out at the end of the CDN as a sponsored project. This is also evident in their reflections (on whether or not their expectations were met) at the last workshop held in Bell Mare, Mauritius in March, 2004. Selected reflections from the workshop notes I took are presented in Table 7.4.

Table 7.4 Participants' reflections on their expectations

Question to the CDN members: How has the CDN met or not met your expectations?

Responses:

"At the first workshop, I had no clear cut ideas. But things started falling into place after the Lesotho workshop. I started to modify some parts of the course to input legal and legislation aspects of the environment. I must say that all the workshops have been beyond my expectations. I am limited in Mauritius and the course would not have developed as well as it has been done without this network" (Interviewee #20).

"All my expectations have been met. When I began developing the courses, I always began from the scratch, and I didn't know if I was doing the right thing. As I started networking, it helped me to clarify my particular methods, as well as getting good ideas. Lesotho workshop was particularly helpful. I found working in small groups very helpful" (Interviewee #7).

"Overall, the network has been beneficial. I have learnt a lot when the group is together, as well as when I am working on my own. One disappointment was that some members were still struggling to produce course materials and that they have not contributed to the process as much as I anticipated. Apart from the sharing amongst members, I also felt a need for more specialist input. The Lesotho workshop and Di Wilmot's session at the Swaziland workshop were very useful in this regard. It is a pity that the courses could not have been produced earlier on as a draft form, for more peer reviews" (Interviewee #4).

"I regret not having seen more materials, but I enjoyed the networking, which has helped members' progress. The workshops have motivated me to keep on working. The CDN allowed me an opportunity to see what others were doing. Networking pushed me; it motivated me to keep on working. I think my module will be useful, and I am glad that it will be run" (Interviewee # 6)

"I had no initial expectations, as I was doing something I had never done before. I see everything as beneficial. Now I can structure a course in an elaborate way, which gives me a sense of empowerment and professional development" (Interviewee #10).

"At the first workshop, I didn't even want to be there, as I didn't know what was expected of me. We tend to grow into the opportunities that are given to us. I have never been involved in course development before, so this was a challenge for me. The whole process is influencing me to influence the teacher education programme, and improve environmental learning, and thus influence environmental views and actions in my country" (Interviewee #18)

"I had expectations around networking and sharing. What has been helpful has been to take each step in curriculum development and go through them in detail – break down the whole process into individual aspects. In my work context, I have had no time to think about these aspects. Sometimes I felt frustrated at the lack of networking e.g. at workshop 2, there was little critique or input into the structure for the course (maybe it was because members were still unfamiliar with personal and professional boundaries). However, as the group has progressed, they have become increasingly open and now share more honestly and constructively" (Interviewee #8).

"I had views about how a course runs. Going through the stages of course development, my expectations have been met. I developed my views, and also I have a better understanding of other courses, e.g. EE for industry etc. If I was not a member of the network, I feel I could not have managed to develop my course. I feel I have benefited from working with my colleagues, and have developed professionally" (Interviewee #22).

"It is good that people have become increasingly clear and open. I have begun to question what course development means in my institution, the situation in southern Africa, and what it means to develop

courses that are responsive in different situations. The proposal development stage allowed me to clarify the process of course development. I have learned a lot especially from the evaluation exercise” (Interviewee #11).

“I am very new in the university, and I have had no experience in course writing. I have written a fair amount on perspectives within EE, but I struggled to match these with actual course development. I used the ‘blue book’ [*Developing Curriculum Frameworks: A source book on environmental education amongst adult learners* (Lotz, 1999)]. I have learned that there are many different ways to approach course development. Overall I found the process to be very useful for course material development” (Interviewee #12).

From the reflections in Table 7.4 the CDN members felt comfortable to develop courses in environmental education after going through the experience. Interview data (as well as reflections in Table 7.4) indicates that the course development processes members engaged in, helped them to enrich and widen their scope and knowledge in the field. Having gone through the course development process, most network members felt professionally confident to take up similar activities with a lot of confidence as one member remarked, “ ... *I mean, now I don't feel so frightened. At the beginning I felt very frightened, out of ideas and lost ...*” (Interviewee # 4). However, the perceived professional development was not without challenges. In the next section, I highlight some of these challenges as they emerged from the data.

7.4.4 Challenges to professional development

Professional development may seem to have been like a smooth path when members narrated how they felt they had grown. However, interview and email data reveals that the process of course development faced a number of challenges. These, in many instances, affected professional development. One of the biggest challenges was that of time. Although members participated in the CDN with the blessing of their institutions, it appears that they were not provided with *time* to work on the courses, i.e. they continued with their normal workloads alongside the CDN work. Some CDN members claimed that due to workloads in their institutions, they had no opportunity or time to fully apply themselves to the course they were developing in the context of the CDN. They note that their time was shared with other equally important responsibilities in their work context.

A number of members bemoaned the fact that if they had enough time they would have developed comprehensive courses, which would have enhanced both professional development and quality.

Others said that, due to general apathy in their institutions, they had problems bringing their colleagues on board as they developed courses. Their efforts to inform colleagues about the course were often ignored and some struggled to gain appreciation and support for the process. From Archer's notion of internal conversation (see section 3.3.7), the CDN colleagues seemed to have internally deliberated on whether or not they could participate in the course development processes at the institutional level. As in the case of institutionalisation (see chapter 8) other obstacles to professional development included the institutional structure, culture and lack of support from the supervisors.

The delays in, and in some cases non-signing of the MOU between Wildlife and Environmental Society and some partner institutions resulted in courses not being developed after close to four years of the implementation of the CDN. Some members struggled throughout the life of the project to have their MOU signed by their superiors. This de-motivated them, as the following email communication from one of the members seems to suggest:

Although it is becoming embarrassing for me to be behind, we are today having a meeting with the powers that be in my institution to finally look at the issue. The meeting is called by my CEO and the Director of [named environmental authority] will be there. The contention here is the delay in signing of the MOU, which is really making me not move forward.

After the above meeting, the CDN member wrote:

The meeting went fine and it requested that I rework the proposal background and change the target group. The meeting also requested that you [referring to the CDN Coordinator] come ... and have a chat with the Chief Executive Officer, Director of Parks and Director... I hope you will be able to come and we can use that meeting as part of the planning for the December Workshop [in reference to the CDN regional workshop which was due in that country]

Despite these efforts and my visit (see Table 7.5 for an edited version of the trip report from my field notes) as requested by the CDN member, the MOU was never signed. It

took the initiative of the CDN management to support the member directly, outside the MOU requirements. This was also done in the case of another member who had problems with the signing of the MOU.

Table 7.5 Edited version of field trip report from the field notes (DFS 14).

<p>Serial Number: 14 <i>Date:</i> 23-10-03 <i>Place:</i> [country name withheld] <i>Details:</i></p> <p>I visited [the organisation in question] with Dr. Jim Taylor (Director of REES) and Prof. George Euvrard (Dean of the Faculty of Education, Rhodes University) ...</p> <p>The CEO ... was off sick but we managed to speak to him on phone. [<i>In fact I later came to learn that he had left word with the secretary that we should talk to him on phone away from the ears of the course developer and other members of staff</i>]. Jim spoke to him and the conversation was short and really a courtesy call. Jim thanked him for the warm welcome accorded to us by the staff of his organisation. Jim handled the whole process nicely as it seemed the CEO had other things he wanted to say. This would have brought lots of tensions.</p> <p>There seem to be some strong tensions between the CEO and his staff and this has contributed to the delay in signing the REES MOU. During our meeting, we learnt that other similar projects/initiatives have suffered in the same way. Sometimes money is not released for its intended purpose as the institution bank balance is often found in the negative. The course developer explained that the original idea about biodiversity education has been shot down by the CEO and other supervisors who feel that the course should move away from focusing on the teachers to focus on agriculture extension officers. The project proposal has since been adjusted to suit these recommendations. A number of meetings have been called but the MOU is not yet signed. This has been demoralizing on the part of the course developer and his colleagues. There is a strong feeling that [the organisation] needed a new CEO. [The course developer] as a trade union member seems to be taking the lead in this direction. Perhaps this explains the animosity between the two. The lobbying to have the CEO retired has reached the parliament and courts of law ... We explored the idea of having the course being funded directly from Howick upon the production of invoices for the course. The course developer and his team will draw up the programme and complete a budget that would be discussed with us. The members of this organisation were worried that if REES insists on releasing the money into the institutional account, the money would not be available for use like has happened with other donor funds.</p>

To a number of members, overcoming challenges which seemed to have been threatening the development and running of their courses was seen as professional development in itself. Some members managed to negotiate for time by going on leave so that they could concentrate on course materials writing. For others, convincing colleagues in their institutions meant a lot of negotiations and lobbying but in the end they considered themselves to have professionally grown as expressed in the following quotation "... *I think my ability to have negotiated, my ability to have engaged my colleagues to begin to*

do this work, and to have time, was in itself professional development ... ” (Interviewee # 11).

7.5 ORGANISATION OF PRACTICE: PARTICIPATION AND MEANING MAKING

Wenger *et al.*'s *explanation* (cited in Fullan, 2003) observe that the philosophy underlying the concept of Community of Practice is about eliciting the passion and participation of members. While at organisation level, it is about combining this passion with resources and power of the organisation to create value far beyond what a community could achieve otherwise. With the above insights in mind, I present results of how the organisation of practice and members' participation in the CDN enabled professional development from the members' point of view. The members believed professional development was enabled through their participation by means of learning from others' experiences; peer review of materials and insights gained into the practice of course development. I shed more light on these in the following sections.

7.5.1 Learning from others' experiences

After being part of the CDN, members increasingly became aware that everyone in the network had a feeling and wish to learn from others. Workshop discussions and reflections reveal that in one way or the other, every member had lots of learning to do from their colleagues. Even members who had been involved in course development for many years expressed the fact that they were learning from the process of working with others. It seemed that each member, whether experienced in course development or not, had something to contribute to new learning about course development processes. From data interpretation it seemed there were no 'experts' in course development *per se*. This observation is elaborated in this quotation from a member “... *Its not like anyone is an expert and thinks they can do everything just with the snap of their fingers ...*” (Interviewee # 4). The process shows that members learnt from each other. Even those with experience in course development and senior academics were happy to be supported in areas where they were lacking. The realisation that everyone was having some challenges (as expressed during workshops) and that every member could contribute

something made those who initially considered themselves novices grow in confidence. This is when they realised that they were not alone, when it came to lack of expertise in course development.

The process of working with others enabled quality in course development. The comments members made on individual course materials seemed to have played a validating role and provided quality assurance as observed by interviewee #4 “... *So if you sat there in your little office developing a course, you will never actually know whether or not that course is good ...*” Quality was said to have come from the number of people who reviewed the individuals’ work. The reviews were also said to have contributed to evaluation of the courses and improving their quality by adding the bits and pieces that might have been missed by the authors. In this way professional development was said to be growing. One member argued that even if one had to read books on course development, one would only grow professionally when at the interface with others working on similar activities:

It is so easy to figure or think that networking isn't a necessary thing. But you can network in many different ways like conferences and through meetings and workshops ... but you actually need to have that opportunity otherwise you stagnate ... um you can read books, sure that also helps in your professional development but it's when you get to that interface with people, when you get discussions going that you actually better your professional development. I really feel fortunate for myself. If I did not have these opportunities to come to a lot of meetings and the workshops, I would not have been half the person I am now ... (Interviewee # 4).

However, a number of CDN members thought the process of learning from each other was abused as some course developers seemed unprepared and instead used situations when they met with others to validate their intentions and plans of their work. This was said to be frustrating as all members of the network wanted to benefit from each other’s comments and course materials.

7.5.2 Peer review of materials

The process of peer review of materials did not happen smoothly (as planned) in the CDN as members worked at different paces. Some members had their course materials

ready for review while others were still developing theirs at the time of peer review. In cases where there were no tangible materials, CDN members were asked to review intentions and ideas at a broader level. It was argued that this did not contribute to professional development as the course developers could learn little from comments on the intentions. In the main, most comments were said to be supportive, aimed at helping the network members to build each other in the field. Nonetheless, some members noted that some unkind comments were aired during materials review sessions as happened during the Mauritius workshop:

I think it was a mixture of frustration and not wanting to expose the uncertainties that some comments were a little bit unkind. Some comments were supportive and you tried to sum them up at the end (Interviewee # 12).

Through peer reviews, a number of CDN members expressed satisfaction with the kind of insights they gained in course development processes in general. They noted that more insights into the course development processes helped them to grow professionally. In the next section, I discuss, in detail, the insights the participants said to have gained into the practice of course development.

7.5.3 Gaining insights into the practice of course development

Data from the interviews reveal that most CDN members appreciated the fact that the CDN provided an opportunity for members to share course development experiences. They claimed to have acquired insights into the nature and scope of the process involved in course development. Although the network members struggled to articulate exact insights gained in course development as a result of belonging to the CDN, they were able to describe the changes they had experienced in the way they developed courses before and after being members of the network, as evident in the following quotation:

I do not have a yardstick, it is only that I can tell that I am better off now than I was, in the sense that I can now do certain things in course development which I could not do before ... Now I know how to develop my curriculum. I know how to structure certain things, for example, leading to the development of course materials. I can design

strategies of assessments as per the course we are developing. I know how to evaluate both the course and even the learning (Interviewee # 10).

The network also provided opportunities for members to engage in a process of clarifying the concepts used in environmental education in the SADC REEP. The participants felt they gained lots of insights into some of the concepts and practice of course development. Clarification of concepts and issues in course development was said to have provided a basis for further professional development. Participants appreciated the participatory approach to course development as it provided rich cross-fertilization of ideas from all over the region. Even those who were struggling to develop course materials and failed to develop and run courses by the end of the CDN, as a funded project, were satisfied that they had gained insights into course development processes, as exemplified by the following statement:

I have learnt a lot in terms of course development, proposal writing and also having to share a platform with so many different professionals who have worked in environmental education ... that was a rich experience. I mean, that is something I will never forget because it ... exposed me to a lot of ideas and all sorts of different things which I have never been exposed to before, especially with regards to environmental education. I think by being involved in this environmental education course development network, I learnt more than what I actually learned in the three months when I was in Strathclyde at the university, when I did the WWF environmental education course (Interviewee # 18).

The open discussions in the CDN are said to have opened members' perspectives in course development thereby supporting professional growth. They noted that CDN meetings helped them to find their way through the course development process. Some attested to the fact that the networking process widened their current view about environmental education in general and course development in particular. Interviewee #4 notes that everybody needs professional development activities in order to keep up with new ideas and trends in their field. She argued that people do not professionally develop unless they have an opportunity of working and interacting with others as happened in the case of the CDN.

Participating in the CDN seemed to have provided members with more intellectual capital that helped them critique their own practice as evident in this exchange:

- Interviewee # 6: Professionally, I would say ... it [the network] has given me an insight in understanding, in a better way the course that I teach, the course I am involved in ...
- Interviewer: Would you say that you are doing better than before you became a member of the network?
- Interviewee #6: Yes because there are so many things that we have covered in the CDN, which I did not know before I joined. I would say that it has given me a better standing because through ideas and skills that we have learned and shared, I am able to handle the curriculum in a better way. I am able to understand that as an educator, I should consider views of learners. I should not just plan things on my own but I should consider the other partner who is a learner, in this case a student ...
- Interviewer: (interrupting) ... that you never did before you joined the CDN?
- Interviewee # 6: I always took it for granted that these people [referring to the students] are always following or appreciating what I am doing. But now I have learned that it is important to consider their views and to share and to also allow them to contribute to the process of learning.

7.6 THE TRANSFORMATION OF PRACTICE

Data analysis in this section draws on Lave and Wenger's notion that social relations of apprentices within a community change through their direct involvement in activities, resulting in the development of knowledge and skills about the practice. This change and subsequent development of knowledge and skills in course development among the CDN members is explained by examining the shift towards participatory course development, the structuring of course materials and the Course Developers' Toolkit, as emerged in the study. The transformation of practice is also discussed in the context of the participants' own accounts and beliefs that they had transformed their practice.

7.6.1 Shift towards participatory course development

It appears the CDN emphasis on a participatory process in the development of courses (the emphasis was based on SADC REEP principles as recorded in section 1.3.3.3) during the funding proposal-writing phase was taking some academics into a new terrain. The funding proposal-writing requirements resulted in the shift towards participatory course development processes as many people, who were traditionally not permitted to participate in course development processes, had access. The requirement for

participatory approaches to programme development was in line with SADC REEP's vision to foster partnerships and capacity building among and within SADC member states (SADC REEP, 2002). Partnerships and participation of interest groups around an issue of concern are also prerequisites for democratization, decentralization and regionalisation of the programme's activities such as course development.

The participation of key stakeholders in the curriculum deliberation and the entire course development process was said to have acted as a key ingredient to the development of a contextually relevant curriculum, among the CDN members. Most CDN members involved consultants, colleagues or other stakeholders with background knowledge on issues around which the courses were being developed. Data from the study indicates that most of the courses involved a multi-disciplinary team of stakeholders. They helped to corroborate on issues that were discipline specific as noted by one of the network members "... *the one lady who has some ecology background ... helped me to put some materials together...*" (Interviewee #11). Stakeholders who worked with network members brought their expert knowledge to the course development process even when, in some cases, they had no experience in course development. This experience seemed to have been beneficial to all involved and gave credibility to the courses developed. The study shows that working with multi-disciplinary teams in course development provided the rich diversity needed to make the course relevant to the changing context and needs in the individual countries and institutions as explained by one network member:

... Involvement of other stakeholders is important in the development of a course that is relevant and responsive to the needs of all involved. Moreover, the course material developed in a participatory manner further promotes the question of relevance and responsiveness of the course (Interviewee # 10).

Some members reported that they had difficulties getting a lot of stakeholders involved as observed by Interviewee # 4 "... *it's hard to get a lot of people involved with that redevelopment process unless they were actually physically really committed and dedicated to doing that or they are paid to do it ...*"

Although course developers worked with stakeholders to develop courses, the study shows the final compilation of the course materials was undertaken by the network members. The course developers drew on the materials evaluation tool developed during the CDN workshop on course writing held in Lesotho (WS3) and finalised during the Swaziland workshop (WS5). The main issues drawn from the materials evaluation tool included: underpinning ideas; orientation to the course; learning and teaching strategies; accessibility and layout. Table 7.6 shows the main features of course materials evaluation tool as developed by the CDN members (for a detailed version of the evaluation tool, see Appendix 10).

Table 7.6 Summarised version of the course materials evaluation tool.

<i>UNDERPINNING IDEAS</i>
History and context Critical reflection and reflexivity Participation Social construction of meaning and knowledge Integrated nature of theory and practice (praxis) Environmental education processes of change.
<i>ORIENTATION TO THE COURSE</i>
Introduction, purpose and learning outcomes.
<i>LEARNING AND TEACHING STRATEGIES</i>
Selection and presentation of content Coherence of concepts, content and methods across units. View of knowledge and use of learners' experience Activities and feedback Language
<i>ACCESSIBILITY AND LAYOUT</i>
Access devices (making it easy for the learners to find their way through the materials) Visual aids (pictures, diagrams and cartoons).

7.6.2 Structure of course materials

Participants felt that in course material development processes, more attention and time needs to be given to the structure of the course. This observation appeared to have been informed by the course materials writing workshop (WSR 3), which took place in 2003 in Lesotho. The workshop seemed to have had a great influence in the way that the CDN

members developed course materials. The following two interview excerpts support this observation:

... the Lesotho one [referring to the workshop] -on materials development, it helped me quite a lot because I am young, not in age, but in writing course materials. So it actually gave me an idea of going about writing course materials. The others [workshops] were actually complementing the little knowledge that I already had (Interviewee # 7).

Perhaps it was the actual materials development workshop that was of most benefit to me. The programme was very well presented and the interaction with the group was very animated and meaningful. The guidelines provided – although requiring simplification and amendment to suit individual needs – were of great benefit and I will most definitely apply the principles in future course development processes (Interviewee # 8).

Based on their experience in the CDN and drawing on the experience from a range of course developers in southern Africa, the CDN members explored ways of sharing their own experience to the wider constituency of course developers. A decision was taken to develop a course developers' toolkit based on the themes identified in the CDN framework.

7.6.3 The Course Developers' Toolkit

As briefly discussed in chapter 6 (section 6.8.3), the course developers' toolkit was developed to support the strengthening aspects of course development in southern Africa in environmental and sustainable education. The toolkit is made up of five source books, namely:

- Source book 1: Deliberating curriculum frameworks in adult learning (Lotz, 1999, revised edition 2007);
- Source book 2: Supporting adult learning and tutoring (Fröhlich, 2006);
- Source book 3: Course materials development for adult learning (Olvitt & Russo, 2006);
- Source book 4: Development, adaptation and use of learning support materials (Russo & Lotz-Sisitka, 2003, revised edition 2006);
- Source book 5: Course evaluation in adult education programmes (Ketlhoilwe, 2006).

Figure 7.1 provides a photographic presentation of the five source books (including a monograph of cases of course development in environmental and sustainability education) which make up the Course Developer's Toolkit.

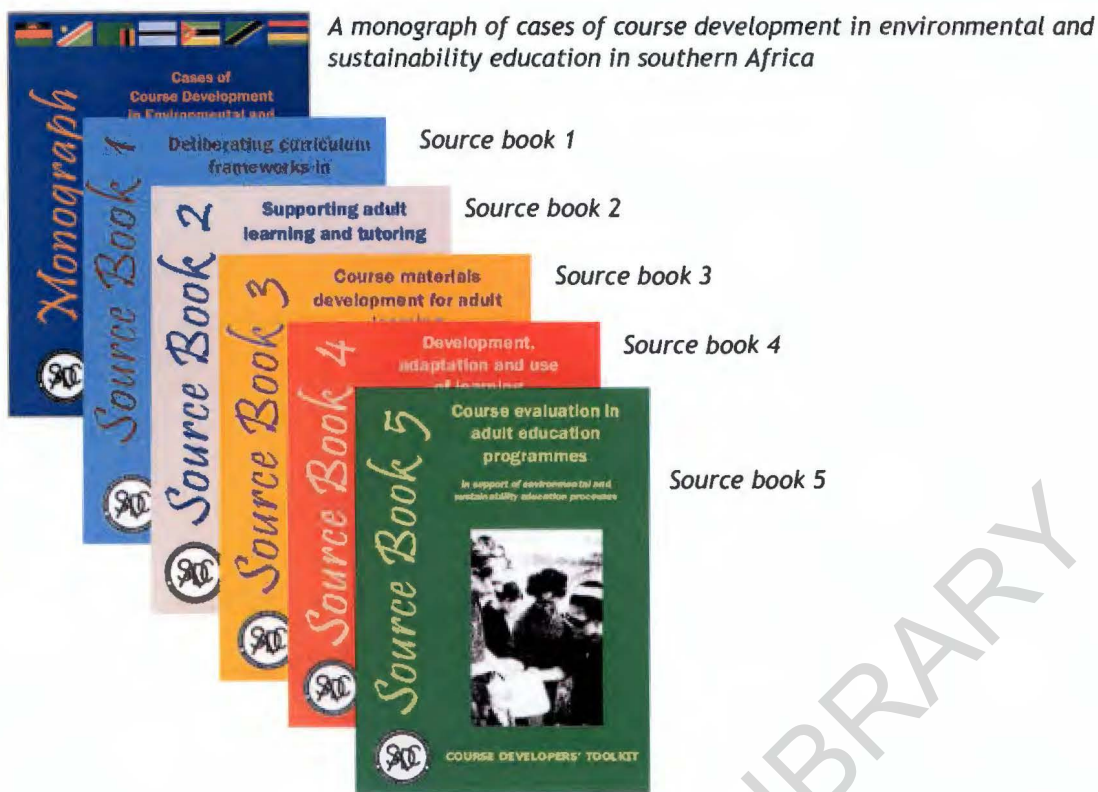


Figure 7.1 Composition of the course developers' toolkit

Apart from the *Monograph: Cases of course development in environmental and sustainability education in southern Africa* (Lupele, 2005a), each of the five source books was written or revised around the five themes of the CDN Framework. Books 1 and 4 had been developed earlier and were revised in the light of the CDN Course Developers' Toolkit. In the process of developing the toolkit, each source book was developed by a lead author who in most cases was a member of the CDN or SADC REEP staff. The rest of the members provided cases studies of their experiences from their own work. The Course Developers' Toolkit was produced as a means by which CDN experiences and lessons could be shared with the wider constituency of course developers in southern Africa. It also worked as a basis for trying out ideas of developing courses by following the CDN Framework. The process helped to test and refine the CDN Framework. From the SADC REEP point of view, the source books provide a regional vantage point on issues of transforming education to address Africa's socio-ecological and development priorities.

The key finding from the process of developing the source books was that there was evidence of a shift (in the context of the SADC REEP) from the conventional way of ‘thinking’ about each of the topics covered by the five source books where ‘experts’ or individuals worked alone, to more participatory and deliberative orientations. Table 7.7 provides a summary of the shifting orientation in course materials development in the SADC REEP as was evident from the research and development process of the five source books (see also Appendix 2: Special edition of *EEmail* on course materials development).

Table 7.7 Shifting orientations in course development processes as reflected in the CDN toolkit materials.

Course focal area	Conventional Approach	Emerging orientation
Curriculum Design (Source Book 1)	Curriculum design is done by experts who develop and disseminate the curriculum to teachers and learning institutions.	Curriculum development is increasingly taking participatory orientations in the light of global trends towards the democratization of institutions and social life; and by changes in learning and social theory (Lotz, 1999). Curriculum is deliberated among stakeholders and partners who agree on a framework. CDN members observed that to achieve participatory curriculum deliberation needs to be guided by the end-users’ needs (WSR 4). Under the SADC REEP courses, the key features that form part of curriculum deliberations include: flexible course structure, enabling participation, praxis, responsiveness and assessment as learning (Lotz, 1999). A key issue debated in the revision process was how curriculum frameworks work out to respond to relativism and the realist turn (Lotz-Sisitka et al., 2007).
Adult learning and tutoring (Source book 2)	Teaching often through transmission methods or what Lotz (1999:24) calls ‘preaching’. Teaching is characterized by lectures and show and tell methods of teaching.	Mobilization of prior knowledge and understanding. There is recognition that learners have much to contribute to the pool of experiences. Text is written in such a way that learners are able to share experiences with each other and support each other. Lotz (1999) notes that expansion in adult learning in diverse settings and changes in social life has led to an emerging trend towards life-long learning. Tutors play a guiding and supporting role, rather than teaching – they facilitate the sharing of ideas and learn together with the participants (WSR 4). A key issue addressed in this book is the mediation role of the educator in social

Course focal area	Conventional Approach	Emerging orientation
		constructivist and participatory learning processes.
Course materials development (Source Book 3)	Experts such as curriculum specialists decided what content to include and provided a 'recipe' for teachers to follow in order to teach the course. The course material became the only legitimate publication that could be used on a course (Lotz-Sisitka & Russo, 2006).	<p>Course materials, like learning support materials are being developed in more participatory ways than before. The CDN members worked with stakeholders in their own countries to develop course materials. The following key orientating questions aided them tease out some important underlying issues in course development:</p> <ul style="list-style-type: none"> • Who is the course for? About the participants, their background, age, gender, experiences, cultural and historical (level) • What is the course delivery? Duration; frameworks of regulations; orientated to groups with variety; versatile and appropriate. • Relevancy and features of the materials Appeal and call for participation; relate to living spaces and cultural capital (indigenous knowledge held in language, activities and experiences) • Implications Keep materials open and bring in local and indigenous open spaces; be clear about how and why we are doing things (designing the course) (Olvitt & Russo, 2006).
Learning support materials development (Source Book 4)	Educational support materials development include 'top-down', 'expert-driven' and 'packaged – centred approaches'. The expert decides what content to include and how materials are to be used (Russo & Lotz-Sisitka, 2003). This approach is based on the RDDA Model discussed earlier (see section 2.10.1).	Participatory materials development approaches which became popular in southern Africa in the 1990s (see, for example, Lotz, 1996; Taylor, 1997b; Lupele, 2002b). Networks of stakeholders are mobilized in the process of developing materials. Consultations and collaboration are the key features of participatory approaches to learning support materials development. This is aimed at avoiding imposition of 'recipe' materials that do not sufficiently respond to the contextual needs of the learners. In the CDN toolkit learning and teaching support materials are seen as important supplementary resources to assist with contextualising courses and enabling participatory learning.
Evaluation of education programmes (Source Book 5)	Evaluation approaches are characterized as measurement-orientated, quantitative in nature, utilizing quasi-experimental designs (Ketlhoilwe, 2006). Evaluations often done by external 'experts'. Evaluation is mainly formative and summative which is carried out to understand, monitor and manage	Instead of relying on standardized tests that external 'experts' to apply to diverse situations, evaluations are taking a participatory approach in which interested parties have a chance not only to make primary inputs into the evaluation but also comment on and shape the emerging findings (see, for example, Rosenberg, 2005). Emphasis is also placed on the contextual conditioning and causal mechanisms which turns (or fail to turns) causal potential into

Course focal area	Conventional Approach	Emerging orientation
	programmes.	causal outcomes as articulated by Pawson and Tilley (1997) indicating a realist interest in evaluations. Under SADC REEP evaluation is seen more as a process of learning in a critically reflexive mode (Kethoilwe, 2006).

Having participated in the CDN, most members felt they had transformed or refined their practice of developing courses. They found new knowledge and change deeply embedded in their interactions and relationships with others in the network (Fullan, 2003). They described this change as being characterized by enriching experiences, knowledge and skills, and acquisition of research-informed knowledge. In the sections that follow I provide details on these two perceptions of the CDN members' understanding of how their practice changed.

7.6.4 Enriching experiences, knowledge and skills

Professional development was seen as a process of enriching personal experience in environmental education course development processes. Members identified the whole process of putting up a comprehensive course development-funding proposal with the CDN secretariat, and the process of taking the proposed course through the accreditation and approval system as some of the evidence of professional development. The above processes involved interactions with other people in the CDN as well as in their institutions. They described the process, from funding proposal writing to the actual implementation of the course, as an enriching experience that amounted to professional development. They argued that if one had to take a draft course through all the stages of approval systems within the CDN and their own institutions, and be able to negotiate and involve other stakeholders, then one had developed a rich experience of professionalism in course development. Hence professional development was viewed not only in terms of the accumulation of more experience, knowledge and skills but also the ability to socially interact with others i.e. through the exchange of opinions and views and acquisition of negotiation skills within the context of the CDN, and in own institutional context.

The process of sharing ideas and experiences in course development enabled a number of members (including those without experience in course development initially) to develop their own courses, as one explained: “... *there has been sharing of ideas and experiences resulting in me being able to produce a decent draft of the course on my own which is a fit that we could not accomplish a team initially* [referring to early attempts before joining the CDN] ...” (interviewee # 10). A number of the members found the networking process as a wonderful experience as it provided space for working with other people from different parts of the region with varying degrees of experience in environmental education. This sort of space was said to be lacking in their own institutions due to work loads and other structural constraints as explained by one interviewee:

To me this is a wonderful experience to be able to share with others and to enrich my own experience as a professional or academic. I am from a distance education institution where there is not much of an opportunity for this among colleagues. It is not really built into the culture of the institution to network because of our work load and other constraints that we experience. What I find specially enriching is the fact that we have people from so many avenues in environmental education who are sharing their experiences and I see that I am growing not with regards to experience in my own course, but growing in relation to working cooperatively with others and that to me is also a component of professional development (Interviewee # 8).

Other members viewed professional development in the context of the CDN as a process of gaining a better understanding of the challenges in course development processes. They found the discussion sessions where environmental education concepts were clarified as a useful process in terms professional development. They described the idea of deliberations around key ideas in course development and environmental education in general as an enriching experience. This was found to be a shift from what one called the ‘university traditions’ where courses are approved through the existing structures by approval committees. They pointed out that in some cases approval committee members are people who did not have expertise in one field (in this case environmental education). They particularly found the interactions through discussions and review of course materials within the CDN as very important processes of developing professionally since the courses were reviewed by people who are like-minded – in terms of being in the same field – “... *working, discussing, theorising together is very useful professionally ...*” (Interviewee #11).

7.6.5 Research Informed Practice

The study shows that course development processes played out as research informed practice. Participants emphasised the need for research at every stage of the course development process, following the CDN Framework. Research ranged from initial needs analysis, which informed the next stages of the process to the evaluation of the actual running of the courses. Network members reported that the course development process involved a lot of data gathering and asking questions “... *this [research] was the only way one would figure out the best way forward ...*” (Interviewee # 4). It was generally acknowledged that research aided the course developers to meet the national, institutional and learners’ needs. Research informed practice fits within the SADC REEP principle of recognising the diverse contexts in which environmental education plays out in southern Africa.

7.7 CONCLUSION

This chapter has provided insights into the CDN members’ perceptions about professional development in course development processes. The findings presented in this chapter indicate that professional development seems to have started from the proposal writing stage; through the sharing of stories and experiences which resulted in the development of a ‘learning curriculum’ (Lave & Wenger, 1991); to mobilizing others (and time) to work on the courses. I have also captured evidence of some of the challenges that CDN members encountered in pursuing their professional growth path. The chapter further illuminates the fact that the CDN provided the social context for learning to take place among members of a Community of Practice.

CHAPTER 8

INSTITUTIONALISATION OF ENVIRONMENTAL EDUCATION COURSES AND PROCESSES

8.1 INTRODUCTION

In this chapter I examine the participants' own understanding of institutionalisation, how this was enabled or constrained in the light of the environmental education courses they developed under the CDN. I present the results of the diverse views of institutionalisation based on the categories and themes that emerged from the analysis of interview scripts, email and members own reflections as recorded in the regional workshop reports (WSR 1 – 6). In a way the results also test the assumption of institutionalisation (see section 6.3.5) which was believed would enable decentralisation of courses from the SADC Regional Environmental Education Centre in South Africa to other centres in southern Africa as enshrined in the second goal of the SADC REEP (see section 1.4.2) and in the CDN assumption which guided the selection of the network members (see section 6.3.1). Institutionalisation was also viewed as strategic to the strengthening of environmental education in southern Africa in the DANCED proposal. It was further envisioned that institutionalisation would enhance sustainability of the courses in the partner institutions. In the sections that follow, I present emerging discourse of institutionalisation from research data at three levels i.e. regional, national and institutional levels.

8.2 REGIONAL LEVEL

Institutionalisation of environmental education courses in southern Africa was mainly discussed from two perspectives namely, decentralisation and sustainability of the course development processes. Although the notion of decentralisation was prominent in interviews with the founders, none of the CDN members brought out this issue in their interviews. CDN members' main focus was on how networking processes around course

development would be sustained outside the SADC REES funding framework. In the section that follows, I present results around the issue of decentralisation and sustainability at regional level as evident in the research data.

8.2.1 Decentralisation

Among the SADC REEP objectives is the issue of decentralisation, which is captured under specific objectives 2 and 3 (see section 1.4.3). On the one hand decentralisation was seen in terms of creating an enabling environment for regional and national environmental education policy that would support the development and implementation of environmental education activities within the member states. On the other hand, decentralisation was viewed through support to environmental education processes through enabling decentralised networking of environmental education practitioners within the SADC region (SADC REEP, 2002).

Interview data from this study reveals that decentralising the programme was understood to mean that member institutions in the SADC countries take up responsibilities for some of the activities of the programme, in this case the development of environmental education courses. This seems to suggest that decentralisation entails that courses reside in the institutions in the member states rather than just at the SADC Regional Environmental Education Centre and with few selected partners. The process of decentralisation from the CDN was evident, as observed by one member: “... *the ownership, the responsibility, and the adaptations that take place is going to make these courses reside in the institutions in the member countries in other places ...*” (Interviewee # 9). In the long term, decentralisation was seen as a strategy that would enable environmental education courses to be spread beyond the SADC REEP and its key partners such as the Rhodes University Environmental Education and Sustainability Unit. Instead courses would reside in the individual institutions in the SADC region so that these institutions do not depend on outside institutions. The courses would run in the countries within their particular political economy.

Interviewee # 9 observes that the issue of decentralisation was a difficult one as it was often looked at theoretically without thought about what it actually means. The interviewee argued that the CDN has been a tangible example of the process of decentralisation and the process of strengthening other centres of activities. The CDN was said to have strengthened centres of activities, which are real sites of ongoing environmental education activities, in nearly all the partner institutions.

... there has been decentering, which is not political decentering but actual real sites for ongoing environmental education which are institutionally situated in those country contexts ... So for me this is a very important issue because I think that the whole notion of decentralisation can be politically used in the network (Interviewee # 9).

There was a strong feeling that the CDN helped decentralisation of environmental education course development from the SADC Regional Environmental Education Centre to other centres of activities namely UNISA, University of Botswana, University of Swaziland, Mufulira College of Education and all the other partner institutions, which were running courses. This interview excerpt seems to reflect this understanding:

... it was important that Botswana University kind of developed their course and Lesotho University [in reference to National University of Lesotho] also developed theirs, rather than somebody in Lesotho developing a course that was accredited through Rhodes University or other institutions for that matter. It was important that it [course] was located in those countries and their institutions. I mean the best thing about WWF Course [referring to WWF Zambia Training of Trainers EE Course] is that it is solidly seen as a WWF course and there is pride in it and it is recognised as significant initiative in Zambia. That is really important and has made it sustainable over the long term (Interviewee #23).

Decentralisation of courses in the member SADC states was seen as one way of ensuring sustainability as the courses would reside in the institutions (and not to be seen as something brought from outside) and be run as integral part of the institution's programmes. It was argued that in this way environmental education activities would become more relevant, sustainable and satisfy local and national needs.

8.2.2 Sustainability

The issue of sustainability was subjected to ongoing deliberations throughout the life of the project. The discussions were twofold. The first one was exploring the sustainability

of the activities of the CDN at regional level and the second concern was the sustainability of courses at institutional and country level. In this section, I deal with sustainability of the CDN activities at SADC regional level. Sustainability of the individual courses at institutional and country level is dealt with in section 8.5.5.

The issue of sustainability has been a key consideration within the SADC Regional Environmental Education Programme since 1993. Broad interaction within the region and with donor organisations has resulted in a gradual clarifying of some of the facets of sustainability as they relate to the SADC Regional EE Programme. ... It should be noted, however, that this topic requires further research not only in the context of this programme but in terms of developing co-operation more broadly (SADC REEP, 2002:15).

Further to the above quotation, this study sought to elicit ideas on how the CDN process could be sustained through institutionalisation of courses. Nearly all members agreed on the need to sustain the CDN processes. The need to sustain the CDN processes was also expressed in the evaluation report of the SADC REEP (see Rosenberg, 2005) where a course developer from Democratic Republic of Congo suggested to the CDN to rework the source documents and develop toolkit guidelines for further sharing in the region. Another recommended that SADC REEP and its higher education institution partners should seek recognition as a United Nations Centre of Excellence for the UN Decade Education for Sustainable Development: "This would strengthen the Programme's capacity to extend and strengthen the CDN activities, which have been most important for 'de-centering' and establishing smaller 'centres of excellence' across the region ..." (cited in Rosenberg, 2005:101).

During the Mauritius workshop (WSR 6), CDN members observed that while funding was a reality in sustainability, there was need to look at sustainability in terms of sustaining the process of networking. They argued that the Course Developer's Toolkit (see Chapter 7, section 7.5.3) if distributed widely could be beneficial to the rest of SADC region and beyond, and enhance sustainability of the CDN processes.

8.2.2.1 Sustaining the CDN processes

The reasons for sustaining the CDN processes were varied. Some viewed sustainability as one way of maintaining the environmental education course development momentum

generated by the interactions among the network members “*It would be a pity to lose the momentum generated by the interaction and for this reason the process should be sustained* (Interviewee # 8). Others bemoaned the fact that environmental education courses were not well developed in their countries. That the CDN processes may help strengthen environmental education courses in countries where environmental education was not strong. The CDN’s role of strengthening and supporting course development under the SADC REEP was reaffirmed by a network member’s contribution to the SADC REEP evaluation in which it was said that the CDN had played a significant role in getting course development processes to where they were in the University of Swaziland, for example.

... I remember that our initial attempt to produce such a course [EE course for Industry] failed. The failure was due mainly to lack of expertise and funds. The CDN has provided these critical ingredients. Drawing from the regional membership, the CDN was able to provide a pool of expertise within itself ... The CDN required network members to periodically report on progress made in the course development process. This requirement made one to always make time to work on the course so that progress would be noted in the periodical form (Mandla Mlipha cited in Rosenberg, 2005:99).

There was also a strong belief among members that the CDN can influence decisions related to recognition, accreditation and certification of environmental education courses in countries where courses developed outside the university were not accredited by local accrediting institutions. Perhaps this was as a result of the CDN members’ perceptions about the authority, status and credibility that SADC REEP seemed to wield in the region, in running and developing environmental education courses.

I have been suggesting in a couple of workshops that this whole process of networking must not end with the development of the course. I think its sustainability through becoming a recognised body that could award certification and also in brackets – examining body of environmental education. Here I am not saying ... duplicating the work that the universities are doing but ... for example here in Mauritius, we do not have institutions that recognise a certificate in EE. So many people do the EE course that we offer to help the country, but they still need some recognition somehow³⁹.

³⁹ This was also one of the assumptions of the formation of the CDN (see section 6.3.3).

Another member had this to say:

The network is coming with one major ingredient – that of regional co-operation. It is sort of very comforting to see a course that come from a body like SADC and then you find that in local universities they have more acceptance to courses that are designed through structures that are sort of accepted – like SADC ... They tend to be more understanding and more willing to cooperate (interviewee # 10).

Table 8.1 is a summary of members' arguments presented to the SADC REEP to justify for the extension of the CDN when the first phase of the 33-month funded project was approaching the end.

Table 8.1 Summary of CDN members' reasons for sustaining the CDN.

CDN sustainability beyond 2004: Discussion notes
<p>We appreciate the opportunity made possible by the SADC REEP to enable us to benefit from the network. Although the project is not yet over we feel we are now a family that cannot easily disband for good. We feel something should be done to sustain the network still under SADC.</p>
<p>As a network, we recognize the following as benefits we derived from our networking exercise over the past year and half.</p> <ul style="list-style-type: none">- Professional growth in course development- Knowledge about what our colleagues do in their respective universities, colleges and NGOs- An assurance of what we are doing in our environmental education practices by sharing experiences- Sharing and acquisition of skills in course material development, and course assessment methods (amongst others).
<p>As a network we feel we can learn more from each other, we realize and recognize that we need each other and can strengthen EE in our respective institutions and organizations through this collaboration as a network beyond course development processes e.g. in research and publication. Our continued networking and collaboration could go a long way in strengthening EE practices in the region (SADC), through cross fertilization of experiences and ideas and later collaborate with other strong EE blocks such as the EU, Americans and Australians on equal or almost equal strength.</p>
<p>We therefore request SADC to consider alternative ways of sustaining the network to further give support to what this project has done and strengthen EE status in the region and internationally. Most of the courses are not yet piloted though the process and progress is on track. Some are still in their early development stages because of some delays in processing MOUs. It is very clear that by the end of the project period they were still behind and not piloted. We, therefore, feel they should not be left at this stage, as there are potentially viable initiatives. We feel SADC should find other means or donors or sources of resources to sustain this network and make sure that Danida funded initiatives bears fruits and are sustained.</p>

Suggestions for sustaining the CDN process beyond its funded project status included: course developers keeping in touch through emails and sharing topics of interest; keeping up to date with members' individual projects and movements; sharing course materials and new insights into environmental education; maintaining internet, meetings and workshop contacts at which topics relevant to practitioners' needs are discussed; and undertaking joint publications. Interviewee #11 notes that sustaining the network even in the event that the courses have been institutionalised would be useful for dialogue and sharing of ideas to consolidate institutionalisation and professional development processes in the region. The SADC REEP evaluation report (Rosenberg, 2005) notes that there is a demand for new environmental education courses throughout the region, and that SADC REEP and its partner at Rhodes University (Environmental Education and Sustainability Unit) has been stretched to adequately respond to this demand (see also section 6.2). The report found that the CDN was playing the role of strengthening environmental education courses in the region.

The network's ability to contribute meaningfully to course development was greatly enhanced in those instances where high quality support from the Regional Centre, Rhodes University or 'invited expertise with the same philosophical ideas' was available (Rosenberg, 2005:99).

The sustainability of the CDN process at regional level was also seen as a way to monitor institutionalisation of environmental education in the partner institutions and help strengthen the implementation of environmental education activities at national level.

As explained in sections 6.8.4 the CDN contributed to the development of the United Nations Environment Programme (UNEP) initiative on the Mainstreaming Environment and Sustainability in the African universities (MESA). Situating the CDN contributions in broader networks such as UNEP is one action aimed at sustaining the CDN processes.

8.3 NATIONAL LEVEL

As stated earlier (see section 1.4), SADC member states have identified environmental education as one of the major necessities if the region is to move towards sustainable

development. In a special report prepared for the UNCED in 1991, SADC states committed themselves to increasing efforts to:

... build environment into school curricula at all levels and to expand the capabilities of our technical institutes and universities to provide professional training and retaining on all aspects of environmental protection and natural resource management (SADC REEP, 2002:1)

8.3.1 National needs

This study shows that CDN members set out to develop environmental education courses that responded to national needs as evident from the course funding proposals that each member presented to the SADC REES. Table 8.2 shows some selected CDN member institutions (based on those which clearly showed national needs) and excerpts from the course development funding proposals that indicate national needs to which the courses intended to respond.

Table 8.2 Statements from the course proposals that provide evidence that CDN members' courses were responding to national needs.

Institution	Statements from the proposals indicating the national needs being responded to.
Swaziland National Trust Commission (Swaziland)	This proposal, therefore seeks to rewrite the course materials in order to incorporate the government priorities in environmental, management, education and conservation. The Swaziland government has developed a Biodiversity Conservation Strategy that focuses on the establishment of conservancies and training of rural communities on how to run these conservancies.
National Institute of Education and Development (Namibia)	Namibia's National Population Policy for Sustainable Development creates an enabling environment framework for environmental education, and declares as one of its strategies: <i>Environmental education shall be promoted, with emphasis on efficient management of natural resources at all levels of the educational system as well as in the population at large.</i>
Mufulira College of Education (Zambia)	Zambia Basic Education outcomes based curriculum integrates cross cutting issues such as HIV/AIDS, life skills, gender, human rights, reproductive health, good governance, environmental education and water and sanitation. The integration of these issues was with a view of improving the quality of education in Zambia as defined by the education policy, "Educating Our Future" (1996). In the light of the revised Zambia Basic Education Syllabus, there has been a dire need to incorporate environmental education into the Zambia Teacher Training Curriculum.
University of Swaziland (Swaziland)	Deliberation and consultations leading to the formulation of the National EE Strategy in 2000 raised a fundamental concern that in Swaziland there were no short courses on EE and Environmental Management (EM). Moreover, it

Institution	Statements from the proposals indicating the national needs being responded to.
	was noted that the country lacks a pool of human resource necessary for the implementation of EE programmes as well as taking the lead on environmental management issues.
National University of Lesotho (Lesotho)	<p>The government of Lesotho is playing a pivotal role to reorient programmes in various sectors to address environmental concerns. In line with international developments, education has been identified as a key strategy for raising people's awareness about environmental degradation. In this regard, the government is in the process of introducing environmental education in formal education, at both primary and secondary school curricula. This initiative is driven by the Danish supported project, Lesotho Environmental Education Support Project (LEESP) ...</p> <p>This proposal is intended to enrich teacher education with EE by supporting the initiative of the National University of Lesotho to respond to environmental education developments in schools.</p>
University of Botswana (Botswana)	The Government of Botswana has recognised the need for greater emphasis in pre-service and in-service teacher training in Environmental Education and has specifically recognised the role that the University of Botswana has in implementing policies relating to Environmental Education (EE). The Revised National Policy on Education (1964) advocates the introduction of Environmental Education across the curriculum in the formal education Sector.

Table 8.2 demonstrates that the course developers were conscious of national needs and aimed to contribute to the changing contexts and needs through the courses they were developing. They took into consideration the policies and needs of their individual countries as far as the role of environmental education was concerned. Data from this study shows that responsiveness to national social ecological needs and priorities played a significant role in the institutionalisation of environmental education courses at national level. Results of this study also indicate that working with other stakeholders within the country is vital to institutionalisation of the environmental education courses at national level. In the section that follows, I discuss responsiveness and stakeholder collaboration in the light of institutionalisation.

8.3.2 Responsiveness

Institutionalisation at national level was not much of a problem for members working at the university or higher education institutions levels (as they tend to serve national interests). Generally, all they needed in order to achieve the process of institutionalisation

was to meet the new course approval systems of their institutions. However, for members who were developing relatively new national courses (such as courses for teachers at national level) often through a government department, they faced additional challenges of meeting national contextual needs. In these cases, responsiveness to national context and needs such as policy and knowledge gaps was said to be key to the acceptability of the courses and associated institutionalisation.

8.3.2.1 Policy

Responsiveness to policy reflected the many dimensions of the national policy on the environment in the countries. These included responsiveness to the actual legislation on environment, education or environmental education. In some cases, policy included educational curriculum. At policy level, course developers had to do a policy review to indicate how the course was responding to policies, as a means of justification. It emerged that government officials in some countries wanted to be satisfied that the course was addressing national policies or that it was making a contribution towards a particular policy. One member recalls what they went through as they were developing their course:

I remember we had to look at the policy books etc. Then the process was passed on to CDC who are the people charged with the responsibility of assuring that curriculum review can start. What I saw was, if the MOE (Ministry of Education), where education is concerned, find that the course has no place in their programme or their policy then they do not accept the course ... (Interviewee # 6)

Some members of the CDN felt that their courses were easily accepted because they were mindful of the question of relevance. They claimed to have always been mindful of the needs of the country as they were articulated in environmental policy statements curriculum policy statements and general policy statements, and priorities such as poverty alleviation (see section 2.2.1).

8.3.2.2 Contribution to knowledge gap

Besides the policy demands, acceptability of the course as a national programme (as was the case in Zambia and Namibia where courses to some extent were developed in state

run institutions) depended on the Ministry of Education/Environment to be satisfied that the course was beneficial to the contextual needs and policies of the country. Governments wanted to be clear as to how the course would respond to existing knowledge gaps and capacity building. For example, the knowledge gap and lack of short courses in EE as identified by National EE Strategy in Swaziland (see Table 8.2) seem to have been a justification upon which the course developer drew to have the course institutionalised. Price (2002) confirms that the industry course in Swaziland was identified as a national priority based on the interviews she conducted during the REES consultancy to select CDN partners. She reports that the Director of the Swaziland Environment Authority prioritised the industry course due to Swazi legislation, which classified environmental issues in industry as high priority (Price, 2002). Another CDN member indicated that only when the government line ministries were satisfied that the course met national needs it would be taken as part of the curriculum as explained below:

Possibilities of having the programme getting institutionalised lies in the fact that MOE [Ministry of Education] recognises that the programme is beneficial to the country, then they [MOE] take the responsibility and it becomes part of the curriculum ... (Interviewee # 6).

In cases where the government departments were not clear on the importance or relevance of the course, controlling officers shied to sign memorandums of understanding with SADC REEP. One of the problems of not accepting the course came from lack of understanding what the course was about on the part of ministry officials. They were cautious about their involvement and administrative commitments, despite the fact that they had appointed representatives (of their institutions) to the CDN. A number of changes were suggested to the draft course development funding proposals that their officers developed as this email excerpt indicates:

The meeting went fine and it requested that I rework the proposal background and change the target group. The meeting also requested that you come to [country name withheld] and have a chat with the ... CEO and Director of Parks (Email #2).

8.3.3 Stakeholder Collaboration

It seems the members of the CDN who worked with stakeholders from other institutions within their countries had their courses easily accepted. Involvement of other stakeholders enabled the courses to attain national recognition as the case was in Mauritius, Swaziland, Lesotho and Zambia. For example, in Mauritius apart from working with the Ministry of Education, the course developer worked with stakeholders from three parastatal bodies: Mauritius College of the Air, Mauritius Institute of Education and the University of Mauritius. The course developer also involved teachers and other volunteers. This gave the course (national profile) as many institutions knew about it.

The course developer at the University of Swaziland worked with institutions responsible for overseeing formalised environmental education in Swaziland. These included the National Environmental Education Programme, the Swaziland Environment Authority (SEA) and representatives from the industry as well as Ministry of Education. The course developer held workshops where stakeholders shared some of the processes of developing courses. The developer drew on the CDN activities to share the processes of course development with colleagues and other stakeholders.

As far as involving stakeholders in the course development was concerned, nearly all the course developers involved their colleagues to some level and extent. This involvement had a bearing on the institutionalisation of the course at the institutional level as meetings involving people from outside the institutions gave credibility to the courses under development.

8.4 INSTITUTIONAL LEVEL

In this section, I present insights into institutionalisation, which was key to the research focus. Although institutionalisation at this level was viewed differently among CDN members, general understanding was expressed of aspects such as owning the courses, recognising the courses, taking responsibility for the course and enabling continuation.

8.4.1 Recognition and ownership of courses

Recognition and ownership of a course developed under the CDN was seen as key to institutionalisation. Participants understood a course to be institutionalised when a university or institution of learning took it on as an integral part of its own programmes. During a focus group discussion, CDN members seemed to agree that institutionalisation meant that a course (developed under the CDN framework) becomes a property of the institution in which it is run and the institution owns copyright of the materials. The participants seemed to suggest that when a course is institutionalised, it ought to be incorporated in the institutional course programme and lead to some qualification. It was suggested (for example, by interviewees 8, 12 and 22) that recognition and ownership is exhibited by the institutions' willingness to approve and register, accredit and provide certification for the course, like any other courses run within the institution. While recognition and ownership of courses seem to have been less problematic with universities and tertiary education institutions, they proved very challenging to Non Governmental Organisations and non-traditional institutions of learning such as government departments as indicated below:

Ownership is the major part of it. We are having problems with our course development process because we want the Ministry of Education to have ownership of the course. But they are not really involved in the development process of the course, so it can be very hard to involve the ministry in that aspect and yet that was the assumption at the beginning. I do not know that there is some sort of tension of ownership such as 'who owns the course?' And 'is there need for that course?' ... It is a lot more difficult for the NGO or project of some sort to start a course and then expect it to be taken over by someone, if this other institution has not been involved from the very start ... (FGD).

8.4.2 Approval and registration

Three of the thirteen courses developed through the CDN were approved and registered as components of full fledged courses or as stand alone courses in National University of Lesotho, University of South Africa and the National Polytechnic of Namibia. Three other institutions (Rhodes University, University of Botswana and University of Swaziland) approved and registered the courses developed (or revised as was the case for Rhodes University) as short courses under the institutional short course policy. Of the

five non university-based courses, three were accepted into the mainstream education systems in Namibia (two courses) and Zambia. Table 8.3 provides a summary of the status of the courses.

Table 8.3 Summary of the courses developed under the CDN and their approval status

Network Member	Institution	Course to be Developed	Status of approval
Mrs Georgie Fröhlich	Desert Research Foundation of Namibia	Adaptation of the RU/Gold Fields Course for the Namibian Context	Course approved and now run at Polytechnic of Namibia
Mr Mphemelang (MJ) Kethoilwe	University of Botswana	In-service course for educators and teachers	Course approved under short course policy
Prof Heila Lotz-Sisitka /Prof Rob O'Donoghue	Rhodes University	Research Design Decision Course	Course approved and run under short course policy
Mr Mandla Mlipha	University of Swaziland	Component course of a degree programme / short-term, semi-distance waste management course	Course approved under short course policy
Dr Tsepo Mokuku	National University of Lesotho	Semester EE course within a degree framework / in-service EE course for teachers	Course approved as a semester course within the degree framework
Mr Sivumelwano (Vumi) Nyembe	Swaziland National Trust Commission	Biodiversity course	At the close of field work of this study, the course development process was still ongoing.
Prof. Cheryl le Roux	University of South Africa	Redesigning of Advanced Certificate in Education (ACE) course	The course was approved as a module in ACE
Mr David Sampson	Ministry of Education, Namibia	In-service course for educators	At the close of field work of this study, the course development process was still ongoing.
Mr Machana Shamukuni	Chobe Wildlife Trust	Semi-formal CBNRM course	Withdrawn
Mr Steve van Staden	Polytechnic of Namibia	Environmental modules for technician courses	Course was approved as a module in engineering course
Mr Evaristo Kalumba	Mufulira College of Education	Environmental modules for vocational training programmes	Course has been approved by the college and supported by the department of teacher training
Mr Khemraj Sooknah	Mauritian Wildlife Club	Marine Ecology Training Programme	Course generally accepted and used at the institutions' discretion as it is not part of the curriculum

It also seemed that approval of courses developed under the CDN were easy and faster in institutions which were already running similar courses or were contemplating developing courses in environmental education, as the following interview excerpt confirms:

... the faculty had already been contemplating, or shall I say my department was in the process of introducing environmental education. So at least I held a concept with the university. The network and the introduction of the course, and course material, come in this kind of context, which really was favourable for this initiative ... (Interviewee # 11).

8.4.3 Curriculum structure

In institutions where the curriculum was rigidly structured or had several cross cutting themes, as was the case in courses developed within the departments of education or environment, introduction of new courses became almost impossible. Asked to explain the challenges he was facing in having the new course accepted and owned by the department of education in his country, an interviewee had this to say: '*... I don't know, maybe the problem is that there is a fixed structure within the teacher education diploma course ... and it seems like they do not want any new programmes at the moment ...*' (Interviewee # 18). Other reasons advanced included the fact that government education departments often had several activities/programmes that were competing for space in the teacher-training curriculum. Introducing new innovations called for long and often frustrating negotiations. Sometimes they just did not bother to respond to new innovations, especially if these came from outside their management framework as Evaristo Kalumba's vignette demonstrates.

Evaristo Kalumba's Vignette

Evaristo Kalumba of Zambia faced a lot of challenges to introduce an environmental education module in the basic education teachers' college. It took him six years before the module could be implemented in his college as a pilot project. The Teacher Training Department (TED) and Curriculum Development Centre (CDC) are said not to have showed any commitment to the proposal. After one year of not hearing from the two departments over a proposal he had presented to them he sought help from a Danida education adviser based at the TED who seemed to have talked to TED and CDC. It was only with the Danida advisor's intervention that the project took off, albeit with only one planning meeting before it died again. It was resurrected by the coming of the CDN which funded the further development of the module leading to its piloting at Mfulira College of Education where Evaristo teaches. The module is being tried in the college with the blessings of the Ministry of Education at national and provincial level. However, the TED has not taken up a keen interest to support this institutionally located course within its teacher education portfolio. This is despite the many promises that Evaristo has had from the Chief Education Officer for TED that the department will support the teacher training component of the project.

8.4.4 Accreditation and certification

At the inception of the CDN there was an understanding that at least three universities would accredit courses developed by non-university institutions in the initial five countries (see section 6.3.3). Although this seemed to have been aimed at decentralising the accreditation and certification of environmental education courses developed under the SADC REEP framework, the assumption became problematic from the inception of the project. Instead of three universities, which were to form a consortium of accrediting universities, the network ended up with six universities. This was due to pressure from other institutions in the region, outside the five supported by the DANCED funding framework (see section 6.4). Other pressure came from the fact that SADC REEP was a regional programme and member states did not understand why only five countries could be supported. The accreditation and certification by the three universities in the consortium seemed not to have been appealing to other universities outside the consortium. It was argued that no university would accept accreditation from another university. "... *It is unheard of, a university going to another to ask for accreditation*" (FGD).

Some of the founder members felt that the idea of a consortium of accrediting universities needed more thorough research at project development stage. It was argued that selecting a few universities as accrediting universities would have created some tensions and an unnecessary power gradient in the network:

I think it would have created unnecessary power gradient between the three so called leadership universities and the rest. What I want to is how often the course development participants agreed amongst themselves the road ahead in a very mature way ... (Interviewee # 21).

Although the accreditation and certification did not become an issue among most member institutions, one of the biggest challenges was to make the course a credit-bearing course once the institution approved it. One interviewee lamented that that, though the course is accredited under the short course policy and carries the name of the university, it does not

have credits and so participants cannot use the course to advance their careers (Interviewee #10).

8.5 INSTITUTIONAL SUPPORT

Institutional support was said to play an important role in the institutionalisation of courses developed under the CDN. The research data indicates that institutional support ranged from institutional culture and politics of who is mandated to develop courses; availability of a short course support structure; support from colleagues and superiors; and institutional commitment.

8.5.1 Institutional culture and politics

As discussed in chapter 7, it emerged that within university culture and politics, courses are usually developed by 'experts.' (see Table 7.7 in chapter 7). In many instances, course development is controlled by rigid administrative structures that spell out the qualifications and procedures of how to introduce a new course. As a result of this, courses developed by non 'designated' course staff, could not even be tendered through the approval committee. Due to the short time that the CDN was implemented, approval of courses (within the project life) could not have been possible due to the bureaucracy of having new courses approved by various bodies and committees in the institutions. This put the CDN members under pressure as they had to adhere to the MOU signed between WESSA (on behalf of the SADC REEP) and their institutions. It is clear that development of the CDN and the requirement for MOUs did not take into consideration the institutional procedures for approving courses. Besides the acceptability or rejection of who qualifies to develop courses, some members did not even attempt to submit their courses through the approval committees due to the anticipated length of time the course approval process. They, therefore, opted to run the courses as short-term courses. This did not seem to be a problem with most of the universities. Most university partners had support structures such as short course policies whose aim was to enable the development of short-term courses for professional development. Through such structures, members were able to develop and run courses in the universities.

8.5.2 Short course support structure

Although some courses developed in the CDN could not be taken on at the same level as degree courses in some universities, they were accepted and became institutional courses under short course policy, and other short course support structures aimed at supporting professional development. This was the case in the University of Botswana, University of Swaziland and Rhodes University (although the Rhodes course had long been institutionally situated, and the CDN just helped to strengthen the course). Short course support structures such as policies and establishment of in-service centres that run short courses provided an opportunity for speedy approval and acceptability of courses developed under the CDN. It was argued that in cases where universities lacked a policy or structure that supported short courses, ownership and acceptability of CDN- supported courses became difficult as the following interview statement suggests:

If a university lacks a structure or structures, courses may have difficulties to be accepted ... we have the Centre for Consultancy and Training whose main responsibility is to administer short term courses, which are basically relevant to professional development ... (Interviewee # 10).

The above observation could not be true in all cases, as exemplified through the situation at the National University of Lesotho, where the CDN course was approved as part of a degree module despite the fact that the university had no history of a short course policy. This is reflected by Price (2002) in her selection consultancy when she writes “ ... I did not recommend NUL (National University of Lesotho) because, unlike the other institutions it did not have a precedent for running short courses ...” Similarly, the UNISA course was easily integrated into a course development cycle in the university, as the lecturer concerned was involved in re-developing a full advanced certificate in education qualification (ACE). She strategically positioned her CDN course development process within the broader process that already had approval within the university course development framework.

It was also argued that approval of courses became difficult because some members of the approval committees might not have had the knowledge in the field of environmental

education. The lack of knowledge in the field by the approval committees might have led to non-approval (or delays in approval) of good courses in environmental education in some institutions. In some instances, the philosophical orientation of the courses (which was participatory in nature) went against the set standards and traditions of what constitutes a quality course. Some institutions faced challenges of how courses developed with outside support would be administered within a more structured tradition. In many cases, these challenges were further enabled or constrained by the existing internal relationships among colleagues and superiors.

8.5.3 Support from colleagues

The level of involvement of colleagues was cardinal to the institutionalisation of the courses. Data from this study reveals that in situations where the CDN representative involved colleagues the course was easily accepted and owned by the institution – making institutionalisation easy. The study also reveals that in order to achieve institutionalisation of the course, one had to solicit support from colleagues by orienting and involving them in the course development processes at an early stage. It was argued that one way of ensuring colleagues were brought on board, was for the CDN representatives to brief their colleagues constantly about the activities of the CDN and on the progress on the particular course. This was claimed to be the only way colleagues would appreciate the difficulties and efforts being made. Those who constantly engaged their colleagues seemed to have received support and the courses they were working on became institutionally located within the institutional course framework. It was believed that in situations where course developers were not informing colleagues on the progress of the project, complaints were bound to arise. Colleagues were said to be satisfied even if it meant one was just reporting back on the difficulties being faced. Interviewee #7 observed that it was in situations where there was no communication that other staff members complained or became suspicious of what was happening, especially if all they knew was that the course developer was travelling to the CDN workshops throughout the SADC region.

Nevertheless, in some cases CDN members had to struggle to try and motivate, interest and mobilise support among colleagues. In a number of cases, this effort was in vain as their colleagues seemed to be committed to other duties. They did not actively take part in the CDN activities. This was evident in situations where there was no tangible outcome for the CDN process. Some course developers seemed to have spent quite a lot of time before anything vibrant (in terms of course development) could be seen to be taking place in their institutions. This led to non-participation from other colleagues in their institutions. Though this may have been seen as an obstacle to institutionalisation, it provided a challenge to course developers to think differently about structural development, engaging with the structures and colleagues in order bring about change in attitude and in the *status quo* of course development.

Sometimes you find yourself repeating the same thing to make people understand what the work is about over and over again. At the end of the day you really realise that it is very important to be patient and patiently make people aware but also to keep an eye on the ball (Interviewee #11).

Apathy towards participation in the CDN courses was also attributed to what one participant called 'academic short sightedness or academic jealousy (Interviewee # 10). The interviewee, however, warned that such apathy may have been as a result of some CDN members trying to personalise things were they fail to involve other colleagues. He however noted that if one was open about what was involved, avenues for participation became open and academic jealousy or any such interpretation was avoided.

In other cases, the process of involving colleagues took rather longer than the CDN members expected. This was blamed on lack of knowledge about the course, and work culture of colleagues which one member claimed lacked a sense of urgency '*... in the beginning people really did not see how they came into this. The sense of urgency was also not there. But we are trying to address it. For instance, we are working with deadlines and so on ...*' (Interviewee # 10).

8.5.4 Support from superiors

Nearly all the CDN members whose courses were accepted and institutionalised seemed to have enjoyed the support of their superiors at the head of department and dean level (in

the case of the universities). Non-university course developers also seemed to have been supported by their immediate supervisors, directors or principles of institutions. In cases where the superiors understood and were willing to support the process, bureaucracy of having new courses approved by the various bodies and committees became the hindrance to institutionalisation. This was attributed to the short time that the project demanded, as normal degree courses take much longer to be approved (see Charles Namafe's vignette in section 7.2.4; Nhamo 2005b). Due to the urgency and the short time available for course development in the context of the CDN, some heads of department or deans (in university situations), went against laid down procedures to have the courses approved, as noted in the following field notes entry:

From the discussions with the course developer and his immediate supervisors, it was clear that the normal procedure of approving a course as laid down in the institution was not followed. Understandably, the normal procedure could have delayed the process to the point where the course developed could not have been developed. However, administratively, the course has been accepted and the initiative has the blessings of the registrar and the Vice Chancellor. Prof. George Eurvard (the dean of Education Faculty at Rhodes University who was in my company) was surprised at how one person could introduce the course up to senate level without the involvement of the HOD and the dean. It was also clear that course the developer was learning something from the process and that it was having influence on the way his colleagues in the university were developing course outlines (Field notes entry: 22 October, 2003).

In some cases course developers were not able to have their courses institutionally located due to lack of support from their superiors who seemed not to understand fully what the course was all about (despite having signed the MOU with WESSA). One member lamented in the following quotation:

I think the major problems are about help experiences, to get cooperation from my superiors in my own institution. To get them to realise that what we are doing is not only something worthwhile for my institution or their institution but also for the SADC region as a whole. To make them realise that this can only lead to future things that can happen and that countries can cooperate and work together. I think, this is maybe one bottle neck from my experience. It is cooperation from the people higher up, the support that you really need (Interviewee # 22).

In three instances, the superiors did not sign the MOUs. Price (2002) notes (in the context of Swaziland National Trust Commission) that the government delays in signing any

financial agreements to allow the Swaziland Environmental Justice Agenda (SEJA) to benefit from SADC REEP seed funding for course development, was a mark of disapproval⁴⁰. The same tactic was said to have been used by the Zimbabwean government as a strategy to deny local NGOs access to donor funds.

There were suggestions from course developers, who faced problems of not being supported by their superiors, that perhaps SADC as an intergovernmental organisation should have stepped in to intervene in such situations to make them (superiors) realise or be more aware that their staff members' course development activities had the blessing of SADC and that the work was very important at regional level. Others suggested that since SADC was like a super structure, which had more power than an individual staff member, it should have been continuously asking institutional supervisors to constantly support their staff members involved in the CDN and there should have been more communication with the institutions at this level.

8.5.5 Summary of how to deal with institutionalisation

The CDN members explored ways of dealing with institutionalisation during workshops. This was aimed at helping each other ensure that the courses they were developing were in the short term institutionally located. They believed that institutionalisation was a key to the sustainability of a course. In workshop 4 held in Namibia, a summary of how members saw institutionalisation being achieved was developed from the individual members' feedback reports. This is shown in Table 8.4.

⁴⁰ The course developer, while working for a government agency charged with the responsibilities of running a national environmental education programme, was also instrumental in the running of a participatory environmental education course under an NGO - SEJA and supported by SADC REEP seed funding. SEJA was seen as being critical of the government. Role conflicts arose when the officer was to develop an environmental education course under his official duties through the CDN. Higher government officials from two government agencies of the Ministry of Environment proposed that the CDN seed fund be used to develop a biodiversity course as it was one of the national priorities. However they still seemed skeptical about the course developers' involvement with the environmental NGO and subsequently the MOU was never signed.

Table 8.4 How to deal with institutionalisation of EE courses.

How to deal with institutionalisation of EE courses
<ul style="list-style-type: none">• Study and understand the institutional hierarchy• Engage in ongoing deliberations about the course with colleagues and other stakeholders• Identify entry points and locate courses within the institutional course/programme framework• Aim to arrive at mutual understanding with other stakeholders in and outside the institutions

8.6 CONCLUSION

The results of this chapter show that the assumptions (at the start of the CDN) associated with institutionalisation of courses may have been accurate (see section 6.3.5) in many respects. However, there seem to be many underlying factors that can enable or constrain institutionalisation other than those assumed at the start of the process. As discussed here, the factors go beyond the institutional context to cover national and regional dimensions. It would appear that activities at the regional level, for example, have influence at national and institutional levels. This chapter demonstrates that some courses were accepted and recognised at national and institutional level on the strength of their being developed under the SADC REEP. At national level, the determining factor as to whether or not the course could be accepted was its responsiveness to national needs such as policy and knowledge gaps. However, most course developers, especially those from universities, did not need approval at national level - course approval was the responsibility of their institutions. Many of them resorted to using the more flexible short course policy framework to gain approval of their courses in the face of other institutional challenges associated with new course design and approval in HEIs. The assumption that approval of course development proposals would contribute to institutionalisation of courses was a good practice for the CDN and aided in ensuring quality but it seemed to have had limited effect on the acceptability of the courses at institutional level. For, example, some course developers could not have their MOUs signed despite the fact that their course proposals were approved by the CDN management. Although the issue of certification and accreditation featured prominently in assumption 4, it was not an issue in the development of the courses. All course developers worked with the institutional

requirements, which seemed to have covered aspects of certification and accreditation. Institutionalisation is said to have happened even in situations where the courses were approved, under the short course policy, as non-credit-bearing courses.

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CHAPTER 9

DISCUSSION OF THE FINDINGS OF THE STUDY

9.1 INTRODUCTION

This study was set up to probe how networking can enable professional development and institutionalisation of environmental education courses in southern Africa in the context of the SADC REEP (see section 1.6 for the broad research question and subsequent specific questions). This chapter discusses the findings of the study as presented in chapters 5, 6, 7 and 8. The chapter reflects on the findings in the context of the broader contextual and conceptual factors discussed in chapter 2. It also examines the findings in the light of theoretical and methodological lenses discussed in chapters 3 and 4. The findings are discussed mainly through retrodution (see section 4.5.3) and by means of counterfactual thinking. Danermark et al. (2002) say that counterfactual thinking is fundamental to all retrodution. I probe the key findings of this study by drawing on Danermark et al. (2002:101) counterfactual questions such as “ ... How would this be if not ... ? Could one imagine X without? Could one imagine X including this, without X then becoming something different?” They explain that in counterfactual thinking one uses the stored experience and knowledge of the social reality. The discussions further draw on literature in chapters 1, 2, 3 and 4 and my personal knowledge of the broader context in which the CDN operated, having being the coordinator of the project.

The structure of this chapter is based on the main dimensions of the research questions namely:

1. Review of the underlying assumptions of the CDN as presented in chapter 6;
2. Networking:
 - Examine the contextual and historical factors on networking
 - Examine the role of networking in professional development
 - Examine the effect of selection on networking;

3. Structure and agential factors enabling/constraining professional development;
4. Structure and agential factors enabling/constraining institutionalisation of courses;
5. Reflection on the theoretical and methodological perspectives drawn on in this study:
 - Critical Realism
 - Actor Network Theory
 - Community of Practice

9.2 REVIEW OF THE UNDERLYING ASSUMPTIONS

The purpose of this section is to elaborate on the description of the CDN by examining the underlying assumptions as introduced in section 6.3. This is mainly done through a descriptive analysis of what actually happened against the set assumptions. I have also used retrodution to argue counter-narratives to explain events and empirical experiences of the CDN members as expressed in the findings presented in chapters 5, 6, 7 and 8. The chapter also sets out to test the presuppositions about the CDN and how it would contribute to the strengthening of capacities in the development of environmental education courses under the SADC REEP. The review of the basic assumptions is guided by the question - *What enabled or constrained the results that were associated with each of these assumptions?*

9.2.1 Assumption 1: Participating countries

The assumption that the CDN would work with five countries in the southern African region (see section 6.3.1) which will involve 9 networking institutions meeting at course development workshops twice a year over a period of 30 months was informed by the DANCED funding framework. This assumption seemed to have ignored the fact that the SADC REEP was an intergovernmental organisation representing 14 countries in southern Africa (see section 1.3). Thus, working with only 5 countries within this institutional structure was not politically appropriate. This shows either negligence of the broader political context of the SADC REEP, or may reflect the power of the donor agendas to prescribe what is possible in a given context. I have argued in an earlier paper (see Lupele, 2002a) that although southern African countries need development aid, donors need to identify forces at work, which affect the region and consider the dynamics

of the region. Thus the uniqueness of the local context is an important factor to take into consideration.

As part of the drive for regionalism (see section 2.3) every SADC state was committed to SADC structure and consequently to participating in the SADC REEP. Working with the SADC as a regional body seemed to have given impetus to local initiatives in environmental education across southern Africa as one member recalls:

... you find that in local universities, they have more acceptance of courses that are designed through structures like SADC ... They tend to be more understanding and more willing to cooperate. They want to be seen as being relevant to the agenda of SADC ... (Interviewee #10).

Although this did not come out in this study (possibly because the respondents were beneficiaries), the five countries that were selected as DANCED operational countries were all members of Southern African Customs Union (SACU). According to Lee (2003) SADCC was formed with the purpose of ensuring that *apartheid* South Africa (see section 2.4) did not spread its economic and political hegemony through SACU. Perhaps for political reasons DANCED's insistence of working with only members of SACU would seem to have been working against the principle idea of forming SADCC. Of course the donors may not have had full access to the historical background of the region, chapter 2 has indicated that this could be a possible site of political tensions. As a result of the restricted geographical area of operations in southern Africa, SADC REEP was under pressure to provide support to more than the five DANCED funded countries. Changes in political leadership in Denmark, with Danida absorbing DANCED (see section 6.4) enabled the SADC REEP to expand the CDN countries from 5 to 8 countries through Sida seed funding, and through encouraging self-funded participation in the CDN. For example, the Support for Environmental Education in Namibia paid for the Namibian Course Coordinator to participate in all the network activities. Although the CDN was the most formalised network for course development, the regional programme continued to support courses in other parts of the region through extending aspects of the

CDN work. For example, through sharing of resources and running of special attachment programmes on course development, the Programme supported over twenty courses either directly or indirectly (see Appendix 11 for the list).

The CDN was well received by environmental educators and course developers in the region because of the dire need for such a network over the years (see section 1.1). This can be explained by the fact that long before the network, environmental education practitioners had already started networking informally by sharing information on courses and adapting existing ones in different contexts. This was the case with the Gold Fields Participatory Course that started as a South African course in 1992 but was adapted for other parts of the SADC region (see section 6.2). The CDN's welcome in the region could also be attributed to SADC REEP and its partner's (RUEESU) reputation for developing quality environmental education programmes and courses in the region over the years, shaped by an ideological orientation – a participatory, critical approach. This resonated with the political changes of 1990s following the introduction of multiparty governments in most SADC states and the end of *apartheid* in South Africa (see section 2.3).

9.2.2 Assumption 2: Development of a course developers' toolkit

The assumption associated with the development of a course developers' toolkit is explained in section 6.3.2. The initial idea of a course toolkit seemed not to have been well thought through, as the early use of box files became bulky and difficult to meet the demands of course developers who wanted copies. The cost of carrying the box files to workshops around the region by the coordination team also became very high. In short, the demand and size of the toolkit had implications for the cost of sharing resources around the region and this affected the accessibility of the materials.

Mid way through the project, the network started to explore other ways of sharing resources, knowledge and skills through the CDN. The CDN started to seek ways of sharing the outcomes of the network. Two methods were arrived at. The first was the

establishment of a website where course materials, proposals and case stories were to be uploaded. By the end of the project only a trial version of the website was developed. The introductory part of the CDN is uploaded on the SADC REEP website: http://www.sadc-reep.org.za/train_network.htm. The website was, however, never developed fully, due to lack of expertise in the Programme to maintain and consistently update the website. A more in depth explanation may also be related to poor use of Information Communication Technology's (ICT) in southern Africa as shown by the lack of uptake around ICT dimensions of the CDN Framework (see section 7.2.2). Lack of interest in ICT among course developers could be attributed to lack of resources in the universities and HEIs in the region. This phenomenon of poor or no use of ICT in southern Africa HEI also came up in SADC REEP ESD consultation (see Lotz-Sisitka, 2006). The lack of use of ICT was also discussed during the development of the UNEP's MESA ESD Innovation Course and Toolkit (see section 6.3.2) meeting held in Howick in November 2005. The university lecturers present bemoaned the fact that ICT was not being used in most universities in Africa due to lack of resources.

The second initiative was the publication of three thematic course development books to supplement the earlier successful publication of *Developing curriculum framework: An enabling orientation* (Lotz, 1999) and *An enabling orientation for development, adaptation and use of learning support materials: A source book for environmental education practitioners* (Russo & Lotz-Sisitka, 2002). The earlier books have been used widely in the region to support environmental education policy, course development and materials development (Rosenberg, 2005). Due to the interest it generated amongst members, the idea culminated into the publication of the source books as explained in section 6.8.3. The source books made up what became known as the Course Developers' Toolkit (replacing the box file). The toolkit, which was made up of five source books and a monograph, proved much easier to share among members and other course developers in the region and beyond. The challenges however, were that the idea was arrived at too late in the project. Consequently, some of the publications that made up the toolkit could not be published in time, before the official closure of the project. They were, however,

produced during the extension period of the project and published towards the end of 2006.

One of the delays in arriving at the development of the toolkit seemed to have been that the members, especially among some opinion leaders, differently understood the idea. A more in-depth causal explanation for the way in which the toolkit and its development played out may be associated with the culture of materials development that is well established in the SADC REEP and its partner Share-Net. Since the late 1980s this materials development network has produced mainly low cost, print-based materials produced through collaborative processes (see section 2.8.2). This approach has been used in the development of other materials under the SADC REEP, for example, *Developing curriculum framework: An enabling orientation* (Lotz, 1999) and *An enabling orientation for development, adaptation and use of learning support materials: A source book for environmental education practitioners* (Russo & Lotz-Sisitka, 2002). So far, most e-based materials such as the *Education for Sustainable Development* UNESCO CD ROM have not worked well. It appears ICT-based materials development has not been a culture of SADC REEP. Perhaps more thought and deliberations involving the members of the CDN should have been carried out earlier on to develop the concept of the toolkit. Despite this drawback the finalization of the source book and networking processes continued within the SADC REEP framework and use of the CDN toolkit has been prioritized for a further extension phase of the Programme in 2007.

9.2.3 Assumption 3: Accreditation of courses

Accreditation was one of the key underlying assumptions of the founders (see section 6.3.3). The assumption that there would be at least three accrediting HEIs which would include two universities as explained in section 6.3.3 was informed by a long history of processes of adapting the Gold Fields Course to different contexts and countries (see section 6.2). The process of adapting Gold Fields Courses led to course participants asking for some kind of recognition of their learning and demand for a certificate of

participation. In South Africa, this issue was resolved when Rhodes University accepted to provide certificates of attendance to the Gold Fields Course participants.

In Zanzibar, the Ministry of Labour implemented and accredited the course. While in Zambia it was accredited by World Wide Fund for Nature Zambia. In Zimbabwe and Swaziland the course is still accredited by Rhodes University. This was not the case in other universities in the region where environmental education courses were adapted. It was found (for example in Zimbabwe, Swaziland, Zambia and Namibia) that with traditional procedures universities could not accredit courses coming from outside their institutions, as they often did not meet the requirements for approval procedures. Moreover a good number of southern African universities still carry the old tradition of what university education is supposed to be which focused mainly on research and teaching formal courses.

Many universities found themselves working primarily at producing and implementing research and knowledge to further the development agenda of the state as **State control led universities shaped (and in some cases constrained) possibilities for academic freedom** in post-colonial states (UNEP, 2006b: Module 1 page 7).

In recent years a third focus of the role of universities – i.e. community service has emerged (UNEP, 2006b). Faculties of education mainly service formal education through either/both pre-service teacher education or in-service teacher education programmes. As such, courses like the Gold Fields Course (which offer environmental education to a broader range of environmental education practitioners) did not easily fit into their course programme framework. In short, these universities service formal education and environmental educators in the formal education.

On the other hand, Rhodes University has been servicing the whole field of environmental education through the Gold Fields Service Centre and Murray and Roberts Chair of Environmental Education for a long period of time. The university services industry and conservation organisations, journalism and formal schooling. This study shows that those who adapted the Gold Fields Course were left with little options but to ask Rhodes University for accreditation as universities in their countries could not

accredit the course developed from outside. They include the SPECISS College Course in Zimbabwe and the Swaziland/Rhodes Participatory Course in Swaziland, which is run by the Swaziland Environmental Justice Agenda – a local NGO.

Rhodes University's wider reach into the field of environmental education coupled with its long standing partnership with the SADC REEP, where it has been providing support for SADC REEP's training and materials development work has, however, been perceived as dominance and hegemony by some universities and environmental education practitioners in the region. The SADC REEP and Rhodes University alliance could have remained strong because both institutions support the breadth of the environmental education practitioners from all sectors i.e. conservation, formal education, local government and community based. In the case of the CDN, it was perhaps for such perceived Rhodes dominance that there was some subtle resistance by the CDN members in situations where Rhodes University was perceived to be taking a leading role. These include the option of keeping a portfolio as evidence of professional development in course development by members (REES, 2002). In this arrangement Rhodes University was supposed to award a certificate of competence. The subtle resistance to the Rhodes influence seems to have been ambivalent. While complaining of perceived Rhodes University hegemony, course developers in the region still looked to the university's flexible and responsive approach to support environmental education in southern Africa. One member of staff explained that although there was a perception in the field that Rhodes University was always dominant, Rhodes was just being responsive to the needs and demands environmental educators in the region:

... Because it wasn't Eureka [head of Murray and Roberts Chair of EE at Rhodes University at the time] who went to Alistair, it was Alistair Scott [from WWF International] who came to Eureka. It wasn't Eureka who went to EEASA, EEASA came to Eureka. ... it wasn't us who went to SADC programme, SADC programme came to us. It wasn't us who went to Swaziland, Swaziland came to us. It wasn't us who went to Zimbabwe, Zimbabwe came to us. So in essence what we try to do is to respond to strengthening the field rather than trying to dominate (Interviewee # 9).

It would seem the Danida consultancy that worked on the CDN proposal (see section 6.4) wanted to break this perceived dominance and hegemony by Rhodes University. This

followed Rhodes University suggestions to the consultants to decentralise course development to other centres of environmental education .i.e. universities outside South Africa. In this notion of decentralisation was the idea that other universities will accredit environmental education courses. Thus a consortium of three accrediting universities was included in the project document. This study shows that the process of accreditation was not fully investigated. There was need for more thorough research on how universities in the region approve and accredit courses.

The Dean of the Faculty of Education at Rhodes University (by virtue of being the university that anchored the CDN) was engaged by the SADC REEP to visit some of the universities and institutions in the region to, among other things, motivate fellow deans and heads of institutions about the work of the network. The dean's visits gave impetus to the course development processes in the partner institutions. CDN members seemed to have received a lot of support following the visits. However, the idea of a consortium of accrediting universities seemed not to have worked. The issue of accreditation was not high on the agenda of most course developers. The members were more concerned about developing courses than worrying about accreditation; although nearly all the university-based courses were approved within individual universities' programmes as fully accredited or short courses (see section 8.4.2). This rendered the whole idea of an accreditation partnership of university-based courses a non-issue. But members from non-formal education seem to have had problems with having their courses accredited by universities in their countries. This is despite the fact that the idea of an accrediting partnership was sought to support non university-based courses. It was envisioned that University of Botswana, for example, would accredit the Chobe Wildlife Course, University of Namibia would accredit the SEEN and Desert Research Foundation of Namibia course and University of Swaziland would accredit Swaziland Environmental Justice Agenda (SEJA) course. Probably due to time and university culture of servicing only the formal education sector, the local universities accredited none of the above courses.

Besides university culture explained above, it appears some courses such as Zimbabwe's Speciss Course wanted to continue to have their course accredited by Rhodes University due to the status they attach to the Rhodes certificate. The running of the SEJA course was marred in local politics. This made accreditation by the local university difficult. By having Rhodes University accredit the course and by marketing the course as a Rhodes University course, it seems the SEJA course appealed to many people in Swaziland who associated Rhodes University with a good university. In the case of the Namibian course, when it became apparent that the University of Namibia would not accredit the course, which was previously accredited by Rhodes University, the course developers sought accreditation with the Polytechnic of Namibia. The course has since been accredited and runs with the Polytechnic of Namibia course framework. However, people from outside the Polytechnic who are paid from student fees tutor it. This threatens the sustainability of the course, since staff from the institutions seems reluctant to take on the tutoring and running of the course. One of the reasons for the Polytechnic staff shying away from the course could be that they were not involved in its development and may understand very little about its orientation. From the findings of this study, accreditation of non university-based courses needs further research.

9.2.4 Assumption 4: Assessment of professional development

Under this assumption CDN members were supposed to compile a portfolio of work including reports, curriculum and assessment frameworks, and draft materials. These were supposed to be submitted to Rhodes University as a basis for assessment of professional development for the course developer. Successful participants were supposed to be awarded a certificate of competence in course development. Assessment of professional development did not take place probably due to the fact that logistics of how to do this were not discussed fully and by the time this should have taken place, the idea had long died. The other reason could have been the participants' perceptions of Rhodes University hegemony discussed earlier (see section 9.2.3). Keeping a portfolio and developing the courses at the same time could have been demanding for the CDN members who had other responsibilities and duties in their institutions. It also emerged

that most academics did not need a certificate of competence in course development rather; they needed the actual courses developed. Those I talked to argued that the certificate would not lead to any promotion or recognition of professional growth by their institutions. They instead opted for publishing their experiences in the *Monograph: Cases of course development in environmental and sustainability education in southern Africa* (Lupele, 2005a; section 6.8.3) and in the *EEASA Journal* (Ketlhoilwe, 2003; Mlipha & Mondlane, 2003; Fröhlich & Le Roux, 2004; Mokuku & Mokuku, 2004; Mlipha & Manyatsi, 2005; Le Roux, 2005b; Mlipha, 2005b). Publishing in this peer reviewed monograph and accredited journal earned them more recognition for professional growth within their work context. For example, one CDN member was said to have been promoted to senior lecturer due to the publication output during the life of the CDN. By the close of the project another member had applied for promotion, as he believed his publishing portfolio had grown during his participation in the CDN. It would appear that more research was needed to establish what the appropriate reward frameworks were for professionals in HEIs in the context of the CDN.

9.2.5 Assumption 5: Institutionalisation of courses

Institutionalisation was seen as the strategic approach to strengthening environmental education in southern Africa (see section 6.3.5). The assumption was that when the courses are institutionalized, they would become sustainable within institutions. It was also assumed that the process of institutionalisation started with the development of a proposal writing stage. The REES management team informed by the SADC REEP guiding principles (see section 1.4.3.4) emphasised that the proposals should articulate the broader context, issues of national policy on environmental education, participatory course development orientation, among other contextual issues. The courses were also set to respond to local context and needs. It was also believed that through the CDN, individual courses will be institutionalized and new centres of activity will be created within the region that would reduce dependence on the SADC-REEP and its partner RUEESU. Hence there will be decentralisation of the development of environmental education courses from the SADC Regional Environmental Education Centre to other

centres in the region. This study shows that at the end of the CDN, more than half of the courses developed under the network were institutionalized (see section 8.4.2). New centres of activity were created in various institutions in the region (for examples, see section 8.2.1). The study indicates that rather than view decentralisation narrowly at the political level – where SADC REEP activities are distributed arbitrarily to other centres and countries to run, the process of networking in course development supported the emergence of new centres of activity and a variety of courses (see section 8.2.1).

Though assumption 5 did not clarify what type of sustainability institutionalisation would achieve, this study shows that one aims to sustain needs to be articulated clearly. In the case of this study, sustainability was viewed at two levels. The first level emphasized the need to sustain the CDN process at the SADC regional level (section 8.2.2.1) and the second level discussed sustaining the courses at the country and institutional level (section 8.5.5). Findings of this study show that the assumption on developing environmental education courses and eventual locating of these courses in the individual institutions seems to have been accurate. It was particularly successful in university contexts. However the assumption that the development of a course proposal that met the conditions set out by the REES management team would ensure institutionalisation did not appear to be accurate as some participants, despite having developed good proposals, did not develop the course due to institutional constraints such as non-signing of the MOU by the institutional heads and inability to move beyond the proposal writing stage (see section 8.5.4). The underlying causal explanation for this could have been due to the fact that in cases where institutionalisation was most successful (such as universities and the polytechnic) the process of course development and approval is a more ‘natural’ function than say in NGOs or government departments (e.g. curriculum institutions) whose core functions lie elsewhere.

In the sections that follow, I reflect on the findings of this study against the research questions and theoretical processes. I also provide more insights into the preceding assumptions by examining the internal and external factors that enabled/constrained networking; the role of networking in professional development; and the effect of

selection on networking. I also reflect on the structure and agential factors that enabled and constrained professional development and institutionalisation. Lastly I reflect on the theoretical and methodological aspects of the study.

9.3 NETWORKING

9.3.1 Historical and contextual factors

In this section I discuss the underlying mechanisms that enabled or constrained the formation and success of CDN from historical and contextual perspectives. As discussed in section 9.1 of this chapter, I use retroduction to provide in-depth causal explanations of the findings. I have also drawn on Danermark et al.'s (2002) concept of studying pathological circumstances and extreme cases to examine whether or not the mechanisms that enable the success SEEPS and ENSI as discussed in chapter 5 are characteristic of the CDN (see more details in section 9.8). As in the case of the SEEPS and ENSI (see chapter 5), the lead question for analysis is *what are the underlying (contingent and necessary) mechanisms that enabled /constrained the formation and success of CDN?* The discussion in response to this question is done under two broad headings i.e. necessary (internal) factors and contingent (external) factors.

9.3.1.1 Contingent (external) factors

The regional status - The SADC REEP, being one of the activities under the Food, Agriculture and Natural Resources Directorate within the SADC Secretariat (see section 2.3), has gained a lot of respect and credibility among environmental education practitioners and institutions in southern Africa. For the majority of environmental education practitioners in the region, the feeling that they were dealing with an Intergovernmental organisation such as SADC motivated them to participate in the CDN. As explained in Chapter 8, some CDN members felt SADC was more powerful and influential than their institutions (see for example section 8.5.5). As noted by Lee (2003) globalisation and regionalisation processes have a tremendous impact on social transformation. Regionalisation has promoted solidarity and cooperation in the SADC

region for many years as explained in the fight against oppression such as *apartheid* (section 2.3) and regional integration (see section 2.4). It would seem institutions and countries in southern African that aim to transform their societies are happy to participate in regional programmes like the SADC REEP so that they can draw on other countries' experiences to develop their own countries and experience. However, this study also reveals that some CDN members used the regional status of the SADC REEP and CDN to manipulate or go against normal institutional procedures for approving courses in their institutions. Some members skipped the hierarchy of the course approving committees to have the course approved by the pro-vice chancellors or the dean before tabling the idea at the departmental level (see section 8.4.4). The fact that senior administrators accepted to 'bend' the rules governing approval procedures seem to suggest that SADC REEP has accumulated a lot of power to influence change at local level in the region.

Perhaps it was for this regional position that donors like SIDA and Danida were willing to support environmental education through one programme that covers 14 member states. This would make administration of such support easier than it would have been if they had to deal with individual countries in the region. It also ensures a multiplier effect as activities and programmes are replicated over a large geographical area. It would seem that, in the case of the CDN, the regional outlook of the SADC REEP ensured donor support and easy accountability.

Existing institutional support - WESSA (as the implementing agency of the SADC REEP) and Rhodes University have provided the institutional support for environmental education courses under SADC REEP. The two institutions have worked and supported environmental education practitioners through SADC REEP in southern Africa. As much as this has been positive in many ways, the partnership between Rhodes University and SADC REEP has sometimes been perceived as hegemonic (see section 9.2.3). Paradoxically there has been over reliance on the SADC REEP's alliance with Rhodes University, to the extent that the two institutions were unable to meet the demands for course development support in environmental education (see section 6.2). The perception of Rhodes domination in the field of environmental education course development in the

region could constrain course development in networks such as the CDN where six of the members came from university settings and felt they also needed to be recognised by SADC REEP as centres of activity. Such university tensions, though subtle, might have led a number of the institutions (which could otherwise have benefited from the history of course development associated with the Gold Fields Course or other courses developed by Rhodes University) to struggle for close to four years, trying to develop what they termed 'our own courses'. However, Rhodes University support to SADC REEP has enhanced the regional Programme's recognition and acceptability among academics, teachers and other practitioners in the field of environmental education. It may have been because of the high quality courses that Rhodes and SADC REEP have developed together that other institutions in the region were attracted to accept the invitation to join the CDN. In some cases, as this study has shown (see section 7.2.5) this was regardless of whether or not they (partner institutions) understood the concept of the CDN.

Government support – The governments and institutions of the SADC states recognise and support the work of SADC REEP as is evident in the fact that CDN members were allowed time off to attend CDN meetings and workshops. This support can be attributed to the fact that SADC REEP was established by the SADC Council of Ministers, following a comprehensive consultation process in the region (see section 2.4.2). As part of their support to SADC REEP, SADC states have also each appointed National Environmental Education Representatives who oversee and play an advisory role to the Programme (see details of the roles of the National EE Network representatives in section 2.8.2). The CDN, as a project of the SADC REEP, seems to have benefited from the support of government departments and HEIs in southern Africa.

National demands for environmental education courses – The fact that most countries in southern Africa have enshrined the need for environmental education processes within their environment and education legislation (see section 8.3.1) made the promotion of the CDN easy. This was also influenced by the fact that most countries lack capacity and expertise in environmental education (SADC ELMS, 1996). The network was readily accepted as it was seen to be a solution to national needs (see section 8.3.1) and

development of expertise in environmental education in a number of countries. At times this caused some problems in situations where the government officials wanted the course developer to address a particular need, instead of what the developer had in mind (see section 8.5.4). This could have been a source of conflicts in countries where course developers failed to harmonise the government needs and their personal preferences despite the fact that both would have responded to national policies.

Seed Funding – As discussed in section 6.2, networking in course development has been ongoing in southern Africa since the early 1990s. It gained currency with the establishment of the SADC REEP (see section 2.4.2), leading to the development of the *Developing Curriculum Frameworks: An Enabling Orientation* publication (Lotz, 1999) which in turn supported the development of a range of other courses (see Appendix 11). SADC REEP supported networking activities through courses and materials development components under SIDA funding. But the availability of financial support from Danida through the CDN made networking more formalised and strengthened professional development and institutionalisation. The partnership funding was a motivating factor for the majority of the course developers who were struggling to develop courses with the limited resources in their countries. The funding enabled the CDN to bring course developers to work together twice a year in workshops where issues associated with course development were discussed (see section 6.7). It also enhanced professional development when the funds were used to outsource expertise from ‘outside’ the network (section 7.2.1). Invited experts enhanced the understanding of course development processes by providing insights, which the CDN might not have been familiar with. Although the seed funding helped members to network and develop their own courses, it would seem that some practitioners were only motivated to join the network because of the realisation that they would be entitled to some seed funds. This might have been particularly the case where two people from the same country, who should have been working together on a course as per recommendation of the Leigh Price Consultancy Report (Price, 2002), ended up splitting and working on individual courses. In such situations, one of the courses was never fully developed by the end of the project, after 4 years. In short, as much as seed funding can enable course development, it can also be an

impediment where the focus is on the money and not on the process of course development.

9.3.1.2 Necessary (internal) factors

History of course development - The history of course development which spans 15 years (with Rhodes University's involvement in the Gold Fields Course starting in 1991) as outlined in chapter 6, gives the SADC REEP and Rhodes University partnership credibility and integrity for developing quality courses. The establishment of the Murray and Roberts Chair of Environmental Education at Rhodes University in 1990 boosted the institution's position in environmental education course development and delivery. This is despite the fact that the process of course development had started long before the Programme came into being (see section 6.2). WESSA as implementing agency of the SADC REEP had also been part of the process of developing environmental education courses in South Africa for many years. Over the years, the courses such as the Gold Fields Courses, which were initially developed in South Africa, have been adapted and developed for other countries and contexts (see section 6.2). The process of adaptation of the Gold Fields Course enabled networking that allowed practitioners to share information and course materials. As a result of this history, the CDN was easily accepted across the southern African region. The network also had somewhere to start from in terms of its work. For example, it drew on the existing experience in course development in the region to start its work. Due to SADC REEP and its partners' long history of existence, they have established themselves as quality environmental education course providers. Perhaps the quality of the Rhodes/SADC courses may have been appealing to many a course developer in the region because they are based on a strong philosophical orientation which embraces reflexivity, democracy and participation as informed by the SADC REEP guiding principles (see section 1.4.3).

Course development philosophy - Considering the history of colonialism and *apartheid* which did not allow for democratic processes in decision making and education systems, or social interactions across racial lines (see section 2.3), the first course (the Gold Fields

Participatory Course in Environmental Education) adopted a *participatory orientation* and was framed as an *open-entry, open exit* course (see section 6.2). This was at the time that civil society was pressing for change in politics, and social life to be more open and integrated. One of the intentions of the approaches of the Gold Fields course was to make environmental education professional development accessible to practitioners in the region in ways that were not constrained by the legacies of colonialism and *apartheid* (which were built on the premises of controlling the Other) institutional structures and exclusion practices (see section 2.3). The course also adopted a *critical orientation* and encouraged educators to research the root causes of environmental issues and risks, and the institutional and often behaviourist roots of many educational orientations and approaches (O' Donoghue & Lotz-Sisitka, 2002; Lotz-Sisitka & Raven, 2004).

The Gold Fields Course also strived to be *responsive* to a broader range of learners in context, and thus required a *flexible* curriculum framework (Lotz, 1999). The philosophy guiding the Gold Fields Course development resonates with the SADC REEP guiding principles as explained in section 1.4.3. The adoption of the participatory approaches to course development and delivery at the time when southern African's authoritative governments were changing to more democratic ones was timely. Participatory approaches became popular with the social transformation movements and educators who were looking for emancipation of the voiceless majority (Zerner, 2000; Lupele, 2002b). Reflexive and participatory approaches to course development in the CDN were enabled by the CDN Framework. The members were free to work with the CDN Framework in any way that met their needs. Used in this sense, the CDN Framework was like a token that shaped the course development process and was shaped by the members as they worked with it (see section 3.4).

It is against this background that the SADC REEP rejected the technicist 'top down' (see Taylor, 1997) kind of approach that the DANCED consultants adopted in developing the initial CDN project proposal (see section 6.4). It must be noted that had the SADC REEP key players accepted the early project document, the participatory and 'self reflexive'

approach developed by the programme over the years would have been lost. Instead a more technicist approach to course development would have settled in the region.

However, it will be naïve to state that all environmental education practitioners in southern Africa embrace the reflexive and participatory approaches to course development championed by the SADC REEP. For example, participatory approaches shaped by critical theory seemed not to have been readily accepted in countries and institutions which still have authoritative management styles or are embedded in more transmissive approaches to teaching (see section 6.4). This affected the progress of the CDN and in a few instances proposed courses could not take off as anticipated due to institutional and national politics that seemed to frustrate and undermine the commitment and expertise of the CDN members. The politics between course developers and institution heads affected progress in course development (see section 8.5.4).

Commitment and expertise - The CDN formation and success can partly be attributed to the commitment and available expertise in course development that has developed over the years in the SADC REEP as discussed above. Under the SADC REEP course development framework, expertise has developed through the running of training programmes such as the attachment programme at the SADC REEC in Howick, South Africa and elsewhere in the region; and the Rhodes University/SADC International Certificate Course in Environmental Education have provided training opportunities to a number of environmental education practitioners in region. Some of the beneficiaries of the Rhodes University/SADC International Certificate Course in Environmental Education are now running similar courses in their countries (for example, some of those who adapted Gold Fields Course are presented in Table 6.1). EEASA conferences have also provided opportunities for the environmental education practitioners to acquire skills and insights into course development. It is this expertise that became a resource upon which the CDN formation and success was built. Key actors used their experience and expertise to negotiate a project that suited the aspirations and ideological underpinnings of the SADC REEP, its partners and course developers in the region. During the implementation process of the CDN, it mainly drew on the available expertise in the

network. In a few instances, particularly during workshops, it drew on expertise from other course developers in the region, many of whom shared the same philosophical orientation.

Availability of resource materials – the other contributing factor to the success of the CDN could have been the availability of copyright free resource materials (such as those developed by Rhodes University and the SADC REEP) which CDN members were free to draw on (see section 7.2.3). A collection of these materials was kept by the CDN secretariat and the CDN members were free to draw on them. They included course materials such as the Gold Fields Course and Malawi Industry Course, among others. Since some members were already working with existing course materials (such as the Gold Fields Course), adaptation of these to individual member's contexts and needs made the process of developing courses much easier than would have been if they had to start from scratch, like a number of them did. Although most CDN members did not adapt any particular course, they drew on a number of existing courses in the region to develop their own (see section 7.2.4). This facilitated the course development process, especially as the materials were copyright free. They also drew on the structure and outlines of their colleagues' courses.

9.4 ROLE OF THE NETWORK IN PROFESSIONAL DEVELOPMENT

From the literature review in this study networks seem to play significant roles in:

- information exchange (see section 2.8);
- influencing behaviour patterns of members (see section 2.8.1);
- providing a strategic instrument that helps to achieve entrepreneurial objectives as used in business networks (see section 2.8.1);
- facilitating the development of cognitive skills and competences (2.8.1); and
- providing the context for the socialisation of individuals to specific sets of values (see section 2.8.2; Diani & McAdam, 2006:5).

SADC REEP has used networks as a process that enables sustained sharing and collaborative work that is inherent in meaningful participation (see sections 2.8.1; 2.8.2). To a large extent, the findings of this study show that the CDN played nearly all the above roles with varying degrees of depth. The network played a major role as a strategic instrument that was aimed at helping SADC REEP achieve its aim of strengthening environmental education capacities in southern Africa. It also provided the context for socialisation of individuals to become professional course developers. There is evidence from the data analysis and interpretation that the majority of the CDN improved their competences in course development as indicated in sections 7.4.1 and 7.6.4 where CDN members talked about having gained proficiency (see section 7.4.1) and confidence (section 7.4.2) in course development processes and where their courses and other publications provide material evidence of this claim. The network provided a social context which CDN members used to learn from others (section 7.5.1) by working with others on their course designs, materials and other course issues such as evaluation and planning (see section 7.5.2). Those who considered themselves novice course developers at the beginning seem to have been motivated by working with those they considered experts. Following their participation in the CDN for four years, if we include a year extension, course developers claimed to have gained proficiency and confidence in course development (see sections 7.4.1; 7.4.2).

The CDN as a Community of Practice (see section 7.2) enabled novice course developers access to the culture, norms and practice of course development under the CDN. The CDN enabled participation and meaning making in course development among members as expressed in section 7.5. With increasing participation in the CDN, members gained more knowledge, skills and competence in course development as they shared stories and experiences with others (see section 7.2.1). They also came to identify themselves as competent course developers (see section 7.4).

The process of socialisation in the CDN was structured around the CDN Framework (see section 7.2.2). From the ANT (see section 3.4.2) the CDN Framework became a token which shaped the process of developing courses and was shaped by the CDN members as

they worked with it. It also provided the structure for networking and course development. Members met twice a year for three years.

The CDN worked within the institutional culture and politics of HEIs some of which were rigid about who legitimately qualified to develop courses. But through the network, environmental education practitioners who would 'normally' not be allowed to develop courses (as determined by the rigid structures) had an opportunity to become legitimate course developers (see section 7.2). The study shows that the CDN as a Community of Practice enabled novice course developers to become legitimate full course developers (see Lave & Wenger, 1991). Novice course developers had access not only to fellow human actors but to non-human actors (actants) such as strategies for course development and delivery, course materials, financial support, and experience from expert course developers. This enabled them not only to develop courses under the CDN but to transfer the experience to their work context and in some cases to national programmes.

The network brought together resources (human and non-human), and expertise for the purpose of course development processes. It enabled collaborative work in course development which 'broke' through some of the boundaries of HEIs, by bringing actors from industries and other sectors to work with university colleagues as shown by the involvement of CDN members such as National University of Lesotho, University of Swaziland, Mauritian Wildlife Clubs and Mufulira College of Education. In each of these cases the course developers mobilized actors in course development from government line ministries such as curriculum development centres, ministries of education and environment. Some of the actors who were invited to work with the course developers might not have had experience in course development but the course developers gained knowledge and skills as they interacted in workshops with others who were more knowledgeable and skillful. The process of networking helped them transform and refine their practice of course development (see section 7.6) as expressed in the following statement; "*... to me this is a wonderful experience to be able to share with others and to enrich my own experience as a professional ...* (Interview #8).

Networking enabled decentralisation of environmental education course development activities from SADC REEP to other centres of activity (see section 8.2.1). Decentralisation was believed to enable sustainability of environmental education in partner institutions and countries as the network members were 'forced' to respond to contextual issues such as policy (section 8.3.2.1) during the proposal development stage. CDN members had to justify the intentions of developing courses by drawing on existing policies relevant to their countries and contexts.

9.5 EFFECT OF SELECTION ON NETWORKING

As explained in section 6.4, selection and recruitment of course developers was an important aspect of establishing the CDN. The key role players had to sell the concept of the CDN and recruit members. This study shows that two methods were used in the selection and recruitment of members to the network. Some members were approached individually by REES staff (see section 6.4). These had been people who were identified, through a scoping process carried out at the SADC REEC (see section 6.4), as active in course development. Others were identified and recruited following consultancy recommendations by Price (2002). This study shows that there were no significant negative effects on the activities and objectives arising from the selection process. Notable effects, however, were that some of the strategic partners failed to meet the demands of the CDN work against their own job demands and dropped out early in the life of the network. At least two members recruited against the recommendations of the Leigh Price Report (Price 2002) could not develop courses by the end of the project despite the fact that they attended nearly all the CDN workshops. I would attribute this to the fact that, though the identified members seemed to have been involved in running environmental education activities such as attachment programmes and courses, they were not involved in course development *per se* (based on the members own submission, see Table 7.4). Failure by at least two course developers to develop their courses could be attributed to institutional politics. It was also ironic that individuals who seemed to experience political tensions with their institutions and governments enrolled themselves into the network, against the recommendations of the Leigh Price Report (Price, 2002).

Consequently the MOU was not signed and the CDN spent time trying to mediate associated institutional politics. Recruitment of non-performing course developers to the CDN frustrated the process of participation which was the premise upon which professional development was built. Two participants shared their frustration in the following interview excerpts:

... To be honest I was very happy particularly with the pre-workshop kind of assignments because that gave us an idea of what we were going to do, what to do before we get there ... But my only small problem was that I felt - to be honest - I felt like some people were actually not doing the pre-workshop tasks/assignments ... It was a draw back ... (Interviewee #7).

... I feel something is lacking with some of the members. It [course development] is not close to their hearts. That is why people find all sorts of problems rocking away [emerging problems associated with course development] with the course development (Interviewee #4).

9.6 STRUCTURAL AND AGENTIAL FACTORS THAT ENABLED/CONSTRAINED PROFESSIONAL DEVELOPMENT

In order to understand the context in which this study has worked with the notion of structure and agency that enabled or constrained professional development, I revisit chapter 3, section 3.3.2 where these terms were first discussed. Sewell (1992) postulates that structures are made of schemas (see his dispute of Giddens' use of the term 'rules' in section 3.3.2). In Sewell's vision schemas include rules, etiquette or aesthetic norms or recipes for group action (section 3.3.2). According to Sewell, resources can be human and non-human. This resonates with ANT (see section 3.4) which uses the term 'actors' to refer to human resources and 'actants' to non-human resources. He further argues that structures are constituted by mutually sustaining cultural schemas and sets of resources that empower and constrain social action. Sayer (1984) notes that structures are related objects or practices (which Sewell calls schemas).

Sewell defines agency as the capacity to transpose and extend schemas to new contexts i.e. agency is the actor's capacity to re-interpret and mobilize an array of resources in

terms of cultural schemas (sections 3.3.2). He further explains that agents are empowered to act with and against others in structures whose schemas inform the social life they know well. He postulates that agency arises from the actor's knowledge of schemas and ability to apply them to new contexts.

This study shows that professional development was affected by a number of structural factors both within the network and the partner institutions. As members of a Community of Practice the course developers needed to gain access to the community and the practice (see section 3.5.1). Legitimate participation in the CDN as a Community of Practice enabled an enquiry-based, participatory, critical, co-operative approach to professional development as articulated by Sachs (cited in Day 2003) and Robottom (1987a) (see section 2.10). This made professional development unfold in a non-technicist way as argued by Robottom (1987a) (section 2.10).

Some of the structural constraints included the fact that the CDN members had to fulfill the requirements of REES in terms of proposal writing in order to have access to partner support (see section 7.2.5). This process was challenging to some of the members who failed to develop the course proposal. Course developers also struggled to develop a common ideological orientation to course development that was inherent in the CDN as informed by the SADC REEP guiding principles (see section 1.4.3). This included learning to work with others within the network and at their workplaces; and adopting participatory and reflexive approaches that recognised contextual and historical aspects as emphasised by the SADC REEP (see section 1.4.3).

At institutional level, the CDN members faced challenges arising from institutional culture and politics (see section 7.2.4) which in many cases constrained the course development processes. In few cases, the institutional culture and politics enabled the process of course development. In cases where the institutional culture and politics was an impediment, some academics and potential course developers were denied access to course development practice as they were viewed as novices who were not eligible to develop courses. However, the CDN backed up by the regional 'power' of SADC,

provided opportunities to all members to have access to the practice of developing courses. Although the CDN provided all members access to the practice, they still had to struggle and overcome some institutional constraints such as general apathy by their colleagues, inadequate computers and internet facilities and delays in signing the MOUs between the CDN and the partner institutions. Having overcome some of these institutional obstacles, CDN members started gaining access to a course development Community of Practice within their institutions as some of them were now considered 'experts' in course development. It would seem that the CDN empowered actors with proficiency (see section 7.4.1), confidence (section 7.4.2), experience through hands on activities and sharing of skills and knowledge (see section 7.6.1), and having a better understanding of what is involved in course development (section 7.5.3).

Professional development was also affected by structural constraints such as time to work on the CDN courses alongside their normal workload. Creating time to work on the CDN courses called for agential powers of negotiation and mobilizing others to support the process. Mobilisation of colleagues and the breaking of apathy towards course development also called for higher-level negotiation skills and resilience. By overcoming some of the constraints, they can be said to have used their agency to become legitimate participants in the Community of Practice. The feat of overcoming structural challenges was viewed as an aspect of professional development (see section 7.4.4).

Although not explicitly stated, professional development in the CDN seemed to resonate with the spiral model as explained in section 2.10.2. As in the spiral model, course development in the CDN started with simple ideas. Members' exploration of issues associated with course development in their inaugural workshop (see section 7.2.2) led to the development of the CDN Framework. The CDN Framework can be said to have been a token (section 3.4) or schema (see section 3.3.2) that shaped course development processes. It was also transformed in the process.

9.7 STRUCTURAL AND AGENTIAL FACTORS THAT ENABLED/ CONSTRAINED INSTITUTIONALISATION OF COURSES

The importance of institutionalisation of courses was based on the assumption that when environmental education courses developed under the CDN became institutionally situated, sustainability of such courses would be guaranteed (see section 9.2.4). In chapter 2, section 2.11, I discussed Schnack et al.'s (2004) suggested broader points which need to be considered when thinking about institutionalisation: political commitment at all levels of the host institution; a post or person in charge of institutionalisation; collaboration and synergies; recognition of 'invisible work'; capacity development; and institutional structure and role conflict. I draw on these broader points to reflect on the structural and agential factors that enabled/constrained institutionalisation of courses in the case of this study.

Political commitment at all levels of the host institutions. In this study, political commitment was captured under the theme 'institutional support' (section 8.5). Two sub-themes emerged from the study: institutional culture and politics, and support from colleagues and superiors. The institutional culture and politics enabled and in some cases constrained the process of institutionalisation of courses. As already discussed, it seems some institutions had strict policies as to who was qualified to develop courses at a given level. Therefore, courses developed by those perceived as 'unqualified' members of staff could not easily be recognised and accepted into the mainstream institutional course development framework. In some institutions, MOUs were not signed on time or at all – a sign of rejection as explained by Price (2002; section 8.5.4).

Support from colleagues also played a significant role in the process of institutionalisation of courses developed under the CDN. In some institutions, course developers were not supported by their colleagues. Instead there were many petty jealousies and apathy. Those who managed to mobilise their colleagues to be part of the course development process had to draw on their agency to motivate, interest, negotiate, communicate and constantly engage their colleagues at every stage of the project. This seemed to have reduced suspicion and politics. It would seem that patience on the part of

the course developer played a major role in institutionalisation of courses. But course developers who personalised the process and did not engage their colleagues ended up with courses that were not institutionally accepted (see section 8.5.3).

Another level of support came from superiors such as heads of departments, institutions or immediate supervisors. These became the deciding role players in the institutionalisation of courses. In situations where the senior officers did not support the course development process, the course developers had problems to even start developing the courses. Lack of support from the superiors seemed to have been arising from two dimensions. The first one could have been due to the rigid institutional structural set up associated with the procedures of how courses should be developed, particularly in universities, which tend to be dominated by hierarchical set-ups. The second reason could have been due to personal differences between the immediate bosses and the course developer. The study reveals that some course developers were not supported by their superiors despite having been nominated to the CDN by the institutions. It is also clear from the findings of this study that lack of support from superiors in some institutions was more political than professional (see section 8.5.4). Some course developers managed to overcome the hurdle of not being supported by their immediate supervisors by coercing support from a higher authority, through invoking the name and power of SADC. In other instances REES (the SADC REEP project that ran the CDN) had to come in and support course developers directly, especially in situations where the problem was the signing of the MOU (see section 8.5.4).

Post or a person in charge of institutionalisation: From the CDN point of view, the assumption was that the course developer would lead the process of institutionalising the course (see assumption 5, section 6.3.5). It was assumed that the course developer was the person who would lead the process of institutionalisation of courses in the partner institutions. This study reveals that a number of course developers had little or no authority to influence institutionalisation of courses. Although Schnack et al. (2004) suggest making alterations to the structure of host institutions in terms of job descriptions and procedures (see section 2.11) in order to enable institutionalisation, this study shows

that changing institutional procedures and structures of approving courses was not possible in the context of the CDN. The process of institutionalisation was left up to the course developers' mobilisation of their own agency. The study also reveals that although all the participating institutions appointed representatives or endorsed those initially approached by the REES officials, time as a cost on the part of course developers, was not factored in. The course developers continued with their normal workloads in addition to the CDN activities. This seemed to have had caused role conflicts with the individuals who had to attend to many responsibilities. Conflicting roles of individual course developers made the process of institutionalisation more complex. It also appears that there was no supervision of the course developers at the institutional level. Some supervisors did not know what their subordinates were doing in the CDN, as is evident in the reflections from my field notes:

From the discussions with [the course developer] and his immediate supervisors, it was clear that he did not follow the normal procedure to have the course approved. The superiors appeared to have been learning the details of the CDN for the first time as they seemed to be questioning even the simple ideas about the initiative. Our visit provided an opportunity for the superiors to have details of what [the course developer] was doing. Understandably, the normal procedure would have delayed the process to the point where the course developed would not have taken place. However, administratively, the course has been accepted and the initiative has the blessings of the registrar and the Vice Chancellor. George [Dean of Education Faculty at Rhodes University] was surprised how one person could introduce a course up to senate without the involvement of the head of department and the dean (DSF 13).

Collaboration and synergies: The ability to identify and mobilise stakeholders from within and outside the institution seemed to have helped a number of course developers to achieve institutionalisation of courses. This study shows that course developers who collaborated and created synergies with other similar projects within their institutions or at national level had the greatest chance of having their courses accepted and institutionalised. This was the case, for example, for courses developed in Mauritius, Swaziland, Lesotho and Zambia (see section 8.3.3). Collaboration with other stakeholders seemed to have given credibility to the courses developed under the CDN and subsequent recognition and registration. Most course developers worked with an array of experts in the environmental field.

Recognition of 'invisible work': Under this theme, Schnack et al. (2004) postulate that relationships need to be built and trust established within host institutions before projects can operate at their full capacity. They call this 'invisible work' which is often not recorded in the project documentation or reporting, but can be amongst the most important work a project engages in, in terms of its sustainability (see section 2.11). However the CDN did not allow much time for such work, except for a recruitment process by a consultant (Price, 2002) and the few visits made by the REES Chief Technical Adviser and Director to some institutions. These visits were focused on marketing the network and selection of members (see section 6.4). Other visits were undertaken by the Dean of Faculty of Education at Rhodes University (see section 9.7) and the CDN Coordinator as he prepared for workshops and programmes in partner institutions. These visits seemed to have helped a number of CDN members in the process of institutionalisation as Ketlhoilwe, a member of the CDN from University of Botswana writes:

The visit by the coordinator and the meeting [with some members of staff and the Head of Department] confirmed our participation in the network and made the course development process much easier as it gave authorities an understanding of my role in the network (Ketlhoilwe, 2005).

It would have been desirable to visit and discuss the CDN and its progress with heads of institutions more regularly. Planning this into the CDN process could have helped, especially in cases where individuals were approached by the REES and recruited into the CDN without prior knowledge of their supervisors who only endorsed their representation later. In some institutions course developers who were first approached and nominated by the REES staff were not officially endorsed. Their MOUs were not signed though they attended all the CDN meetings. It also appears most CDN members did very little 'invisible work' to negotiate the process of institutionalisation.

Institutional structure and role play: Schnack et al. (2004) note that one of the complicating factors in the process of institutionalisation of ideas/activities is fitting into an institutional structure. This observation is true of the CDN as this study reveals. Due to the factors such as time and demands of the CDN as a funded project with a logical

framework to follow in a given timeframe, most course developers could not even attempt to submit their courses through the institutional approval committees. Approval committees tended to operate within a much longer time cycle than that allowed by the CDN. Course approval processes in most of the HEIs is very laborious and can take many years, as can be seen from Charles Namafe's vignette which explains how the process took six years (see section 7.2.4). It was not possible for the CDN to imagine that the approval of institutional structures could be changed. The CDN worked with the existing structures and depended on the course developers' agency to navigate and negotiate the institutional structures for institutionalisation of the courses. This study shows that the short course policy or structure became the alternative to the long procedures of approving courses in HEIs (see section 8.5.2).

While Schnack et al. (2004) provide a useful framework for analysing institutionalisation in general, some parameters such as capacity building in the institutions are out of the scope of this study whose initial focus was to build capacities of individuals with the belief that they would in turn build institutional capacity. To some extent the structural and agential factors that emerged from this study go beyond Schnack et al.'s (2004) framework of institutionalisation. For example, the study reveals that acceptability and institutionalisation of courses also depended on the relevance of the course to the institution and national priorities. This study shows that relevance was key to the institutionalisation of courses. Courses that responded to national priorities such as policy, or contributed to knowledge gaps, or responded to environmental concerns and poverty related issues tended to be easily accepted. Course developers, therefore, had to use their agency to identify needy areas in environmental education at institutional and national levels (see section 8.3.2). The course developers also had to apply their agency to overcome structural hurdles to the institutionalisation of their courses. One of the strategies used was to submit the courses under the short course policy where this existed or introducing the courses as modules or units in a bigger programme that was already in existence, or in development.

9.8 EXAMINING THE CDN MECHANISM BASED ON LESSONS FROM ENSI AND SEEPS

In chapter 5, I presented two case studies of environmental education networks that I studied while in England (see section 1.3). Both ENSI and SEEPS have been in existence for a number of years – over 20 years in the case of ENSI and over 10 years for SEEPS. It was my undertaking that their long existence would provide variable lessons for CDN. The purpose of this section is to examine whether the same mechanism of ENSI and SEEPS (as discussed in chapter 5) characterises the CDN, even in less obvious ways. Danermark et al. (2002), and Sefike and Le Roux (2004) suggest that we can learn much about a phenomenon under study by examining a similar pathological or extreme case in almost its purer form. Danermark et al. (2002) use pathological or extreme case as an example of retroduction analysis. As explained earlier in this section ENSI and SEEPS' regional character and their long years of existence make them good exemplars that could help to provide insights into the mechanisms that contribute to a successful network. This approach is not a comparative study but is based on a pathological or extreme case as explained above. Danermark et al. (2002) explain that to get answers to the question 'How is X possible?' we can study various cases where the preconditions for X appear much more clearly than in others. They note that there are at least two types of cases where social conditions and mechanisms are very obvious i.e. those where the conditions are challenged and the mechanisms are disturbed; and second, extreme cases where mechanisms appear in an almost pure form. They argue "... that we can learn much about structures and mechanisms by studying pathological or critical situations" Danermark et al. (2002:104).

Table 9.1 provides an examination of the contingent and necessary underlying mechanisms (as provided in section 5.5) that contributed to the success of ENSI and SEEPS. It considers, critically, what lessons can be drawn from these for CDN/SADC REEP, bearing in mind the different contexts in which the networks are situated.

Table 9.1 Lessons from the ENSI and SEEPS mechanisms.

CONTINGENT FACTORS	LESSONS FOR THE CDN/SADC REEP
Government support	The governments of the SADC states seem to depend on donor aid for regional programmes and activities. There is need for governments to start investing in regional activities. Where donor aid is the only solution, it should be well negotiated so that donor conditions do not compromise the principles upon which regionalism was established.
Institutional support	The findings of this study indicate that there was institutional support for the work of CDN at regional level which was mainly provided by Rhodes University and SADC REEP/WESSA. There is, however, need for more institutions in the SADC states to provide institutional support to the SADC REEP. Instead of concentrating on individual courses, CDN member organisations could be proactive and support SADC REEP to enable sustainability of the course development network.
Seed Funding	The three case studies in this study have shown that seed funding can provide a foundation for regional programmes. The case of ENSI indicates that with a good usage of the seed funding, regional networks can draw on foundations created by seed funding to continue its activities outside a donor host organisation after funding has been exhausted. SADC REEP and Rhodes University have continued to support the network after the Danida funding. The question is what will happen after the Sida funding is exhausted at SADC REEP? Will EEASA play a major role in supporting the CDN? These are questions that need further research.
Interest in International experience	As in ENSI and SEEPS, there is interest in international exchanges and learning opportunities within the SADC Region as evident by the interest in the CDN. This provides cross fertilization of ideas and knowledge which can later be used in individual members' work context. The CDN members need to raise (outside SADC REEP funding framework) money to enable them participate in the Programme activities. There is also a need to strengthen the UNEP MESA link as a strategy to carry the CDN activities forward. Except for one member of the CDN, all members depended on the SADC REEP funding.
Changing environmental field	Although there have been some debates on environmental education versus ESD, this debate did not affect the CDN activities. Perhaps it was because of the way I framed questions which did not require CDN members to reflect on the debate. All members were preoccupied with developing environmental education courses. Lessons that can be drawn from the SEEPS are that, should such debates surface in the CDN, rather than focusing on the differences members ought to focus on the commonality and continuities (see section 5.5). The environmental education and ESD debate is still inadequate in southern Africa as noted by Lotz-Sisitka et al. (2006) (see also section 2.5).
NECESSARY FACTORS	LESSONS FOR THE CDN/SADC REEP

Commitment and expertise	<p>As shown in this study (see section 9.3.1.2) the success of the CDN can be partly be attributed to the commitment and available expertise in course development under the SADC REEP. The study also indicates that CDN members were committed to course development resulting in the development of their own 'expertise' in the field during the life of the project. Based on the experience of the ENSI and SEEPS, it will be important for the SADC REEP to continue tapping on the expertise developed under the CDN for similar activities in future. Both ENSI and SEEPS successes can be attributed to the fact that pioneers have continued to provide support to the two networks.</p>
Family symbol	<p>ENSI members considered themselves as family members. This appeared to have contributed to the unity and success of the network. The family symbol is one area that would further enhance the work of SADC REEP; especially in the SADC region which was marred by years of suspicions and conflicts along racial lines under the colonial and <i>apartheid</i> institutionalized segregation (see section 2.3). Perhaps the spirit of <i>Ubuntu</i> (see section 1.7) would help consolidate unity and the work that has been done under the SADC REEP. There was mention of the family metaphor towards the end of CDN by some members of the CDN: "Understanding the challenges that others face in course development ensures that one feels part of a family who share a common experience – no single person has all the answers." (Le Roux, 2005a)</p> <p>The Gold Fields Courses have also often been referred to as a 'family' of courses. This indicates a sense of synergy and identity which SADC REEP can draw on.</p>
Longevity and legitimacy	<p>Although CDN only existed for four, it carried with it the life of the SADC REEP which has been in existence since 1997 and the history of course networking through Rhodes University/WESSA and EEASA which started in 1991. CDN and indeed any new project should be built on the history of the SADC REEP as longevity seems to provide legitimacy, credibility and authority which appeared to have helped ENSI continue its work outside the host and funding institution.</p>
Membership	<p>Membership stability was not much of a problem with the CDN as there were more people wishing to join than leave (Only one member left the network). Even those who had not developed courses elected to remain members until the last day of the project. From ENSI and SEEPS we learn that when the focus and purpose of the network is kept, fluctuation in membership does not affect the operations of the network negatively. Old members of the network need to embrace newcomers and those who decide to leave should have an option of rejoining should they change their minds.</p>
Inclusive approaches	<p>It appears the CDN, like the two international networks, worked with inclusive approaches that resonated with the democratic and participatory approaches. Besides inclusiveness at a methodological level, SADC REEP should aim to cement collaborative cultures. It should open up approaches that underpin cultural diversity, organisational and good governance at project level as articulated in SEEPS, which seemed to have worked well to bring members from different culture backgrounds (see section 5.5).</p>

<p>Communication</p>	<p>Reflecting on how the ENSI and SEEPS communicated (mainly through emails, telephones, faxes, and teleconferencing in the case of the SEEPS) the CDN seems to have lagged behind in this area. The email communication, though reliable, had some limitations in that not all the members had easy access to internet facilities as one member explains:</p> <p><i>... at my institution our phones our computers have not been efficiently serviced. Right now the fax machine is not working. The bills for international calls are very high. Internet cafés are very far away from the college and they are expensive. They are about 15 rands per minute (approximately US\$ 2). The CDN should realise that we all do not have personal computers and rely on the college ones, which are locked at 1700 hours. This makes working after office official hours difficult. I think the CDN should treat each case differently and at least in future buy us even second hand computers ... (Interview #6)</i></p> <p>Although internet, faxes and phone could be said to be good communication tools, they cannot substitute the face to face contact as the ENSI and SEEPS cases proved particularly in the context of the SADC where ICTs are not always readily available.</p>
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9.9 CONCLUSION

This study has demonstrated that most of the basic assumptions behind the formation of the CDN, although accurate to some degree, required more thorough research before implementation in the network. The findings of the review shows that the assumptions were not subjected to rigorous scrutiny. While a number of them worked, others appeared to be too simplistic. This could have been the problem of donor funding which focuses on logical frameworks that are often developed based on unsubstantiated assumptions. These assumptions ignore the underlying mechanisms in context. The chapter also discusses the underlying causal mechanisms that enabled/constrained the CDN to realise its objectives. The discussion shows that the necessary enablements were embedded in the history and practice of environmental education under the SADC REEP. On the other hand, the contingent mechanisms seem to have been influenced by the political status of the SADC as an intergovernmental organisation. I have also discussed the selection of CDN members, which seems to have had little negative effect on the networking process.

The chapter has examined the structural and agential factors that enabled/constrained professional development and institutionalisation of courses by revisiting and reflecting on the understanding of key concepts of structure and agency as discussed in section 3.3.2. In the case of underlying mechanisms behind institutionalisation of courses, I have drawn on the broad points of institutionalisation discussed by Schnack et al. (2004) (section 2.11) to structure the discussion.

The last section of this chapter explored lessons that can be drawn from studying the ENSI and SEEPS (see section 5.5) as successful networks in order to examine if the same mechanisms apply to the CDN. This approach is based on Danermark et al. (2002) who argue that by studying extreme cases (or more purer cases) one can draw lessons from such cases and use them to examine new and similar cases (see section 4.7). This analysis has in a way confirmed the findings on the underlying causal mechanisms that enabled/constrained networking under the CDN as presented in section 9.3. In the next chapter I reflect on the research process in the light of the underlying philosophical orientation, theoretical and methodological perspectives, and my personal reflections.

CHAPTER 10

CONCLUSION AND REFLECTION ON THE RESEARCH PROCESS

10.1 INTRODUCTION

This study was undertaken with the aim of developing a better understanding of how networking can enable or constrain professional development and institutionalisation of environmental education courses in southern Africa in the context of the CDN. In the main, this study was responding to a long standing interest among environmental educators in southern Africa for professional development and institutionalisation of courses through networking and collaborative work in course development. This chapter reflects on the theoretical and methodological approaches used in this study and examines whether or not they were useful in probing the research questions (see section 1.6). It also discusses insights, limitations of each of the theoretical and methodological aspects of the study and contributions to the field of environmental education. Throughout the process of reflecting on this study, I have identified areas that may need further research. These are areas around analysis and interpretation of professional development and institutionalisation of environmental education courses in the context of networking in the SADC REEP.

The theoretical and methodological perspectives I drew on in this study are discussed in detail in chapter 3. These are Critical Realism, Actor Network Theory (ANT) and Community of Practice (COP). The three theories played complementary roles in providing insights into the research questions. As explained in chapter 3, section 3.1, critical realism provided the ontological lens and ANT and COP provided the epistemological lenses. The three theoretical perspectives were underpinned by relational philosophy and responded to the following broad question:

How can networking enable or constrain professional development and institutionalisation of environmental education courses in southern Africa in the context of the SADC REEP? This broad question was further broken down into the following specific questions:

- 1 What contextual and historical factors affect networking in environmental education course development processes?
- 2 What role(s) does networking play in professional development?
- 3 How does the selection of actors in a network affect the effectiveness in realising the set goals?
- 4 What structural and agential factors enable or constrain professional development in the light of the CDN?
- 5 What structural and agential factors enable or constrain institutionalisation of environmental education courses in southern Africa?

In trying to reflect on the research process as shaped by the above research questions, this chapter is structured under the following headings: reflecting on the philosophical orientation; reflecting on the use of critical realism; reflecting on the use of Actor Network Theory; reflecting on the use of Community of Practice; summary of opportunities for further research; and a personal reflection on the research process.

10.2 REFLECTING ON THE PHILOSOPHICAL ORIENTATION OF THE STUDY

Perhaps it would be helpful for the reader to briefly revisit the starting point of this thesis - the relational philosophy as an overarching philosophy of this study. In chapter 1, I drew on Emirbayer's (1997) view that there are two ontological views of the world. The first view is that the world is made up of static elements and the second view explained the world as being made up of dynamic and unfolding relations. He calls these two views of the world substantialist and relational (transactional) perspectives respectively. The findings of this study seem to suggest that networking, professional development and

institutionalisation of environmental education courses in the context of the CDN exist as a set of complex relations. This means that they exist in relation to each other and in relation to other mechanisms. As discussed below it was challenging to probe professional development in isolation from course development and the CDN. I have also realised that this study could not have been undertaken in isolation from the broader history and context in which the CDN operated. The findings of the study also illuminate the relational links with underlying mechanisms, historical influences brought to the fore by theoretical and methodological orientations. In the next section, I briefly discuss networking, professional development and institutionalisation of environmental education courses and their related mechanisms as highlighted in chapter 9. These relations are not exclusive but rather examples of such relational links.

10.2.1 Networking

This study indicates that networking was enabled due to underlying mechanisms such as historical and contextual factors that included the post colonial and *apartheid* intrusions, which motivated the southern African states to move towards regionalism and collaborative work between countries and institutions in the region. The effects of the colonial era, *apartheid* and post-colonial governance such as poverty and insecurity led to the formation of the Southern Africa Development Community (SADC). The CDN was also built on existing initiatives and relationships in course development processes in the region. These included the establishment of the Gold Fields Course and Rhodes University/SADC REEP environmental education courses and attachment programmes. The formation and success of the CDN was enabled by the existing institutional support and links between Rhodes University and SADC REEP on the one hand, and their wider relations with SADC member states and the EEASA network on the other. The enactment of environmental laws and policies in the SADC member states and their relations to international environmental policy development spelt out the need for environmental education as a response to environmental issues and risks. The CDN also thrived on the SADC REEP relations with donors who supported and funded the formation of the network. The study also shows that the CDN members were united together and worked

as a 'family' through the spirit of *Ubuntu* (as a relational phenomenon) that fostered solidarity and kinship in the network. The social solidarity embedded in the principle of *Ubuntu* is elaborated in the following quotations:

And if we can keep the integrity, the sense of humanity, the sense of working together, of allowing people to work on these things as hard as they would like to and we do not get distracted by red herrings, I think this process can carry on from strength to strength (Interviewee #21).

You eventually said ... and I think you wisely said it 'do not feel that you need to respond to these questions' [in reference to a CDN member who was put under pressure by colleagues during the materials review workshop] and he sort of put his head down. I think it was a mixture of frustration and not wanting to expose the uncertainties that some comments were a little bit unkind. Some comments were supportive and you tried to sum them up at the end (Interviewee #12).

In a way, the choice to work with related theoretical lenses provided a means to probe other relationships and underlying mechanisms that were at play in the formation and success of the network. For example in chapter 2, I provided some of the broader contextual issues at macro level that related to, and shaped networking in this study at micro level. They include colonial and postcolonial legacies in education and social life; environmental issues and concerns; poverty as it affects provision of education, health and other social amenities; and history of regionalism and the desire for regional integration and collaborative work, among others.

10.2.2 Professional development

This study has shown that professional development also depended on a number of relations. For example relationships among CDN members within the network, existing and new relationships in the member institutions, and relationships between participating countries, relationships between SADC REEP and the participating institutions, and SADC REEP and donors. The study further demonstrated that these relationships were shaped and influenced by wider contextual factors as discussed in section 10.2.1 above. The CDN members forged relationships that enabled them to work together and share

skills and experience leading to mutual trust and the emergence of the 'family' symbol in the network.

Professional development was also enabled when novice course developers gained access to a Community of Practice's culture, norms and practice. CDN members had to deal with relationships within their institutional structures which either enabled or constrained professional development in various ways. Based on the finding of this study, I argue that the CDN members who were successful in developing good courses are those who understood the relational nature of environmental education (whether consciously or unconsciously). These had a thorough understanding of underlying relationships between environmental education and policies (both education and environment) within their countries and institutions, which they used as justification and motivation for the development of their courses. They also elaborately articulated the broader institutional and social contexts in which they operate as exemplified in their individual case studies (see for example, Ketlhoilwe, 2005; Le Roux, 2005a; Mlipha, 2005a) and course development proposals. Professional development was also built on the growing relations among CDN members as they drew on each other's experience and expertise to develop their own courses. In their institutions, CDN members had to build relations with their colleagues, senior staff and stakeholders from industry and related sectors at national level.

10.2.2 Institutionalisation of environmental education courses

Like networking and professional development, the study shows that institutionalisation of courses was influenced and shaped by underlying internal and external relations. They included the politics at institutional and national levels. In some cases regional political power was mobilized to facilitate institutionalisation of the courses. For example course developers who were involved in political party politics strained their chances of being supported to develop courses in their institutions; this affected the institutionalisation of the courses. The study found that the relationship between the course developer on one hand and the senior officers and colleagues in the local institution, on the other hand, was

a very important element towards institutionalisation of courses developed under the CDN. The institutional politics of who qualifies to develop courses also affected institutionalisation of courses. Institutionalisation of courses had a direct relationship with the course developers' normal work loads which affected the time spent on the CDN course and subsequently the quality of the courses. This study has shown that in almost all cases, there was no time set aside for the course developers to concentrate on the development of courses under the CDN. Thus, time was a relational factor in the process of course development and institutionalisation of such courses. The findings of this study demonstrate that course developers who used their agency to respond to environmental concerns and poverty related issues as well as other needy areas within their government policies and institutional needs had their courses easily accepted. Thus there were relations between institutionalisation and broader contextual issues in which the CDN members operated. In the main, the onus to identify the structural relations that would enable institutionalisation lay with the course developers. They received little support from the CDN to address these constraining factors.

All the three main dimensions of this study, discussed above, were affected by necessary (internal) and contingent (external) relations. They were also related internally and externally. In the next sections, I reflect on the theoretical lenses and how they enabled this study to achieve its objectives. I also discuss the limitations of each of the three theoretical perspectives.

10.3 REFLECTING ON THE USE OF CRITICAL REALISM

This study has revealed that critical realism presents a useful theoretical and analytical framework that probed networking, professional development and institutionalisation of environmental education in this study beyond the empirical observations, experience and actions of those involved in the CDN. Critical realism enabled me to probe the underlying mechanisms that enabled or constrained networking, professional development and institutionalisation of courses. The critical realist ontology is structured

into the domains of the empirical, actual and real which provides an analytical framework for probing ontological depth (see section 3.3). These are explained in detail in the following section.

In the *empirical* domain, the CDN that includes the socially determined knowledge about the reality of the CDN (as expressed by its members), was captured by means of interviews, general communication, reports, field notes and course developers' published work such as articles, book chapters and courses they developed. These formed part of the course developers' record of experience. The initial analysis and interpretation of such data was mainly done through the use of inductive mode of inference using NVivo (see section 4.5). The second level of analysis was through an abductive mode of inference, through a process of reconceptualising the data by means of the ANT (in the case of chapters 5 and 6) and communities of practice (chapter 7) frameworks. A further process of analysis, involving inductive and retroductive modes of inference, led to further rigour and deeper insights in chapter 8. Retroduction helped to 'uncover' some of the underlying mechanisms that enabled or constrained institutionalisation of courses as reported in chapter 8, thus providing a deeper perspective on the real (what existed independent of experiences as expressed by course developers in the CDN). For example:

- existing cultural capital on course development shared by Rhodes University and SADC REEP;
- the influence of donor political economies such as the DANCED funding framework;
- power relations (such as SADC's regional power, Rhodes University's symbolic capital power, authority and power of the university administrators);
- poverty related factors (e.g. low investments in course innovations in environmental education in SADC countries leading to the need for donor support); and
- social transformation trends (e.g. participation and democracy orientations in SADC and regionalisation processes).

Considering the *actual* strata of reality according to critical realism (see section 3.3.1), enabled me to probe the course development activities in the CDN as a Community of Practice. This was done by means of observations and field notes, review of documents that provided insights into the members' actual activities (for example courses developed, network interactions, contributions made, and institutionalisation activities) in the CDN, the actual activities and factors that were provided by the SADC REEP in support of the CDN such as copyright-free materials, seed funding and workshops. I was also able to probe aspects of institutionalisation of courses through focusing on related events in the CDN.

Critical realism shaped the research process at three levels i.e. the *real* which considered the causal mechanisms (conditions and historical perspectives) influencing networking, professional and course development, and institutionalisation of environmental education courses developed under the CDN (as described above). Probing the causal mechanisms influencing networking, professional development and institutionalisation of courses seemed to have lifted data analysis from an inductive analysis that would have simply reflected on course developers' experiences in the network as expressed by course developers, to a process of analysis with greater ontological depth. This also enabled a deeper understanding of the relational dynamics of the CDN.

As described in this chapter, critical realism has also allowed for a deeper probing of possible causal factors that may have influenced the CDN process and output. Table 10.1 summarises what I have learnt from working with critical realism's stratified ontology involving an analytical framework of the empirical, actual and real.

Table 10.1 A summary of findings of this study from empirical, actual and real domains.

Main mode of inference	Domain of reality	Main findings
Induction	Empirical (experience)	<ul style="list-style-type: none"> • CDN formed and funded. • CDN members recruited initially from 5 five countries. • Courses developed in 12 institutions. • Evidence of professional development. • Some courses developed and institutionalised (mainly in universities). • Three more countries recruited in the CDN. • Course developers' toolkit developed.
	Actual (events)	<ul style="list-style-type: none"> • Process of establishing the CDN, involving tensions with donors and process of identification of actors and actants. • Mobilisation of donor funds. • Selection and recruitment of CDN members. • Regular workshops. • A CDN Framework developed and used to guide interactions in the network. • Establishment of a Community of Practice • Mobilisation of guest facilitators
Abduction Retroduction		Real (mechanisms)

The implications of working with critical realism is that the study took cognisance of the importance of context and history as described in chapters 1 and 2 upon which the operations of causal mechanisms depend (see section 4.2). Critical realism provided a means to probe relations of connection and situated the participants' practice and experiences within the wider process and context, drawing on historical and other influences affecting the SADC REEP and the CDN outputs. In order to lift data analysis beyond the experience and practice of the course participants, I drew on ANT and COP to

provide a means of abstraction and recontextualisation, a process, which Danermark et al. (2002) call abduction (see section 4.5.3). This aided in distinguishing the different relations that existed among network members, institutions and the connections and interactions between structure and agency. In the next section I reflect on the use of the ANT as used in chapters 5 and 6.

10.4 REFLECTING ON THE USE OF ACTOR NETWORK THEORY

The ANT provided a means of tracing the historical perspectives, actors and mechanisms that influenced the formation of the ENSI and SEEPS (chapter 5) and CDN (chapter 6). ANT was particularly useful in identifying actor associations and mechanisms that were behind the formation of the three networks. By tracing the actors and actants involved in the evolution of the three networks beyond human agency (see section 3.3), it provided a representation of actors and actants in the networks as democratic groupings (see section 3.3.1). This indicated that human actions are co-constituted by material factors and non-human actants such as funding and availability of technology, among other factors.

ANT's translation model proved to be a useful model without being technicist (see section 2.10) as it allowed insight into how a token (in this case the CDN Framework) can shape the process of course development and at the same time transform the practice of the users' as they worked with it. The CDN Framework was used and modified by each individual member to suit their own contexts. Gaskell and Hepburn (1998) observe that in the model of translation, as the actors take up and use the token, their actions and patterns of practice are changed as they see new possibilities with the token. This seemed to have been the case with the course developers' use of the CDN Framework which enabled them to transform their practice as explained in section 7.2.2. In the process, the CDN Framework itself was transformed.

This study shows that Latour's moments of translation (as discussed in section 3.4.2) provides a methodology for analysing emerging networks and communities of practice that have objectives of professional development and institutionalisation of courses.

However, ANT does not seem to provide an adequate historical perspective for explaining processes of translation, hence I drew on critical realism to interrogate the historical perspective of the broader context of the CDN as presented in chapter 2. Similarly, the methodological framework, while identifying power dynamics at play, does not adequately interrogate these power relations. Proponents of ANT such as Fadeeva (2005a) argue that in ANT the power to act upon institutional rules is not an individual characteristic of an actor but a result of an actor's association. She argues that the power of an actor or group of actors is vested in a network of humans and non-humans (see section 3.4). From a critical realist perspective, the individuals and institutions in the CDN possessed 'emergent power' i.e. powers and liabilities which cannot be reduced to those of their constituents (see section 3.3.2). Drawing on critical realism, this study was able to identify some structural and agential mechanisms that enabled or constrained networking (chapters 5 and 6) professional development (chapter 7) and institutionalisation of environmental education courses (chapter 8). Through the process of drawing on critical realism, further insights were gained into power relations at work in the CDN which first became apparent in the ANT analysis. The structural and agential mechanisms are explained in more detail in section 9.3. Thus, in the case of this study ANT would not have been appropriate as a sole method for probing the evolution of the CDN and professional development and institutionalisation of courses.

10.5 REFLECTING ON THE USE OF COMMUNITY OF PRACTICE

The CDN as a Community of Practice brought together course developers with a shared concern about environmental education as a strategic activity that would enable sustainable development in southern Africa, to share skills and experience. It is clear from this study that learning evolved from participation and observation as articulated by Lave and Wenger (1991). The CDN provided the social context for networking and professional development, which was deeply embedded in the interactions and relations among members. This assertion can be corroborated by the following quotations from the members:

... I also think these discussions that we had on course development theories around course development, personally they are very useful. They sort of clarified exactly what sort of work ... (Interviewee #11).

... the ability to discuss and put courses together and to have that experience with the large number of people ... makes you feel comfortable in that its not just your own thought but it's other people's thoughts ... (Interviewee #4).

... I believed that my own expertise in the field of course development would be enhanced through interaction with others and the training that the programme promised. Working in a distance education environment can lead to a feeling of isolation and it was good to be exposed to other perspectives and expertise ... (Interviewee #8).

So if you sat there in your little office developing a course you never actually know whether or not that course is a good course or a course which is going to be thought of as useful by others. And then you have that network of people who can look at it. Then you feel comfortable because they contribute to evaluating your course and adding bits and pieces that you may not have thought of before. So it's not just your course, its, its being made up of many people's ideas ... (Interviewee # 4).

I drew on the Community of Practice literature to structure and further analyse data interpreted by means of inductive methods as presented in chapter 7. In my early efforts of trying to present professional development and course development data, I was challenged with the management of the emerging categories and themes of professional development and course development which seemed to overlap. However, I was able to overcome the challenge by the introduction of Community of Practice as a further frame of analysis. The COP enabled me to look at professional development in relation to course development in a network context. Hence, this study shows that professional development cannot be discussed independently of the field of practice or discipline – in this case course development. The study further shows that professional development cannot be discussed independently of the context in which it takes place – in this case networking.

Although COP was useful in probing professional development, the assumption that learning takes place through participation and not in the minds of individuals may need further exploration as literature (see section 3.5.1) and findings of this study show that the initial learning process starts in the minds of the individuals through reflexive deliberations. It is these internal, reflexively obtained ideas that are made public for the

purpose of conversational confirmation and corroboration: Archer calls this process 'communicative reflexivity' (see section 3.5.1). The fact that course developers were involved in reflexive deliberations is exemplified by the following quotations from the interviews:

Table 10.2 Evidence of reflexive deliberations.

<p><i>... I foresaw that going through the process of reviewing and discussing strengths and weakness of material in the network would be valuable. It is important to find out how others experience or view one's work (Le Roux, 2005a).</i></p> <p><i>... I have personally found the CDN process very useful and, although it was time consuming, it was time well spent. The workshops have given me the opportunity to break away and reflect and focus on developing and writing course materials. I believe I have become a better and more critical course developer and this has been and will hopefully continue to be, to the benefit of my institution and our students (Le Roux, 2005a).</i></p> <p><i>... Once we got those themes [CDN Framework] worked out, then it was sort of easier to know what the major areas [of course materials] were ... I think then once those themes came about, I could see the areas in our course that I could look at one by one. So in terms of the curriculum framework, you know, you look at the aspects of the curriculum framework and check which one fits [the country] contexts [and] needs (Interviewee #4).</i></p> <p><i>... I always took it for granted that these people are always following or appreciate what I am doing but now it is very important to consider their views and also to share and to also allow them to contribute to the process of learning ... (Interviewee #6).</i></p> <p><i>... I was thinking through these ideas and interestingly the way you asked your questions brought up all the ideas I have been thinking about. I have got my own insecurities and my own doubts and my own worries. I am grappling with those in trying to do this course development network and I also [have] got like everyone else, the time constraint ... (Interviewee #12).</i></p>

Lave and Wenger's (1991) notion of social learning within the COP seem to be underpinned by the following four components:

- Community (learning as belonging);
- Identity (learning as becoming);
- Meaning (learning as experience); and
- Practice (learning as doing) (see chapter 7).

The above inventory of the dimensions of a Community of Practice when applied to this study implies that by having access to the CDN, novice course developers start to identify themselves as professional course developers as they clarify their understanding of course

development by being involved in the actual course development processes. This simplistic interpretation of professional growth was far from what happened in the CDN in reality. Despite being granted access to the Community of Practice and equal opportunities, not all members were able to develop courses to the level they would have wished. Though it will be naïve to judge professional development on the basis of a product - the course - even levels of engagement of some members did not provide evidence of professional growth. When asked to reflect on professional growth in interviews nearly all the members claimed to have grown professionally. Reflexive conversation therefore provided further evidence of professional development. Professional development was not a smooth passage for all the members, and the analysis of causal mechanisms that hindered their participation, and agential responses, provided further evidence of their growth as professionals. These included institutional structures that did not provide some members with opportunities that would enable full participation.

Other limitations to professional growth included the members' own experiences and mind set towards the course development process that affected (constrained) their agency and professional growth. This was often the case with members who appeared to think that they were in the CDN as a matter of call of duty (as they were only sent by their institutions).

In working with the concept of Community of Practice to probe professional development it would seem useful to take into consideration the underlying causal mechanisms that may affect participation. For example, there is need to take into consideration the participants' profiles and their institutional contexts such as the kind of institutional support (e.g. time), acceptability of the course, and recognition of their efforts and products, among other factors (see other perspectives in section 9.6). From this study it is clear that COP, as much as it provided a good framework for probing professional development, did not provide adequate lenses for taking individual and other structural limitations into account. It assumes that by having access to a COP, professional development will be enabled. This study shows that personal underlying

factors such as confidence, passion, and self motivation need to be taken into consideration when probing professional development (see section 7.5.2) using the COP framework. It has also pointed to the need for a deeper understanding of causal mechanisms that may influence the COP activities, and hence agency and learning within the community. This study also reveals that the COP does not adequately take into account the reflexive deliberations that take place in the community in response to or in anticipation of structural constraints.

10.6 CONTRIBUTIONS OF THIS STUDY

It is my belief that this study has made a number of contributions that researchers and environmental educators in the southern Africa and beyond can draw on. For the purpose of reporting, I focus on two major contributions i.e. at methodological level and conceptual level.

10.6.1 Methodological contributions

This study has revealed (by implication) the inadequacies of working with one theoretical perspective when dealing with a complex, dynamic and relational phenomenon such as networking. I argue that working with one theoretical lens would not have enabled me to 'unearth' the in-depth mechanisms and relationships of the various dimensions of the study. The relational nature of professional development and institutionalisation of courses in the context of a network needs a robust approach that enables the researcher to 'see' the underlying mechanisms behind enablements and constraints of events, relations and phenomena. The research findings seem to confirm my earlier assumptions that the three relational theoretical frameworks that I drew on - Critical Realism, Actor Network Theory and Community of Practice, played complementary roles in this study (see sections 3.4 and 3.5). Each of the three theories provided perspectives or research rigour which could not be provided by either of them used alone. I have hopefully demonstrated that the multiple theoretical lenses I worked with provided a broader theoretical lens, instead of fragmented theoretical perspectives that do not 'talk to each other'.

The central contribution is that each of the theoretical lenses provided means of identifying different dynamics and relations at play in the CDN, beyond the 'obvious'. Insight into course developers' agency and related structural factors that enabled and constrained their agency in networking, professional development and institutionalisation of environmental education courses were gained. Based on the analysis presented in this thesis, I would argue that critical realism provides a useful framework for probing underlying mechanisms and relationships beyond empirical data in social research.

10.6.2 Conceptual contributions

The findings reported in this study show that the CDN enabled professional development and institutionalisation of environmental education courses. With this in mind, I contend that one of the contributions of this study is the fact that networking can provide a support structure for social transformation and change. My claim can be supported by the following observations from this study:

- In chapter 2, I shared different understandings of the notions of networks. One common understanding was that networking was limited to sharing information among a group of people or organisations. I argue that the CDN went beyond sharing information as members had a shared purpose i.e. that of developing environmental education courses that responded to contextual and socio-ecological issues in their respective countries. As a result of its functions, I argue that the CDN was not a Network in the common sense of the concept but a Community of Practice. Wenger, McDermott and Snyder (see section 3.5) describe communities of practice as groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area. They further observe that a Community of Practice is a unique combination of three fundamental elements: a domain of *knowledge*, which defines a set of issues, a *community* of people who care about this domain and the shared *practice* that they are developing to be effective in the domain. This is what the CDN was all about: the members sought knowledge about environmental education course development processes and for four years they

shared the practice of developing environmental education courses. As this study reveals, at the end of the four years the CDN members felt they had developed professionally in environmental education course development processes and more than half the courses were institutionalised in partner institutions. As this study has demonstrated this was not a simple feat but the network helped to transform and change structures and perceptions within the institutions and among CDN members.

- The CDN members made personal commitments and had passion for environmental education. This can be exemplified that even in situations where they were not fully supported (such as by not signing MOUs), the members continued working on their courses. Some ended up developing courses to the final stage by finding other ways of funding the project in the absence of the MOUs. Thus, belonging to the Community of Practice must have been motivating and created a driving force which enabled CDN members to mobilise their agential capabilities to negotiate and overcome the institutional structural constraints.
- Drawing on the work, cultural and symbolic capital and history of the SADC REEP and its alliance with RUEESU, the CDN assumed some power and authority that some CDN members drew upon to negotiate the approval of the courses they were working on in an otherwise rigid hierarchical institutional structures. The study shows some examples (see section 8.5) where rules pertaining to the procedures of approving courses in university settings were bent to allow the institutionalisation of the courses developed under the CDN through invoking the power of regional body, SADC REEP. A number of CDN members attested to the fact that their institutions tended to listen to regional bodies like the SADC REEP more than the individuals within the universities (see section 8.5.4). I argue (in the context of this study) that the network has inherent power that can enable transformation and change within institutions in the region.
- The CDN as a Community of Practice enabled the development of quality courses through rigorous peer reviews of the course materials and the individual members'

course conceptual frameworks. Quality was also enhanced through the exchange of ideas and skills. I would argue that beyond the function of the CDN, networking can help to support quality in education provision in southern Africa in general. This has worked in the European context (see section 5.2).

- Insights were also gained into how the power and possibilities of the CDN could be enhanced. For example, the CDN could have provided stronger support for institutionalisation of courses at institutional level in different countries. It would also have worked to deconstruct perceived power relations that constrained progress in the course development process (e.g. the perceived dominance of RUBESU and power relations at institutional level).

10.7 A PERSONAL REFLECTION ON THE RESEARCH PROCESS

The study offered me insights into how professional development and institutionalisation of environmental education courses can be enhanced at regional level. Performing the dual role of researcher and coordinator enabled me to apply reflexive deliberation in the planning of workshops and other CDN activities. I was able to carefully think through the pre-workshops and other CDN processes, which was facilitated by the ongoing generation of reflective data in the CDN. This helped me to engage with and prepare for the CDN members' ahead of the workshops.

As a result of my dual role, I generated a lot of data over a period of two years. At the beginning of my study, almost everything that came out of the CDN was seen as data for the research. Had I worked with the inductive method only, I would not have managed to work with all the data. The use of abduction and retroduction provided a methodological approach which enabled me to distance myself as coordinator of the CDN and reflect on the research process. The analytical frameworks provided me with an opportunity, as a researcher, to seek in-depth causal explanations into professional development and institutionalisation of environmental education courses. This enabled me to draw on some of the data I would otherwise have regarded as being unimportant.

The one-year I spent in England, under the commonwealth scholarship, detached me from the coordination role of the CDN during its extension. This provided me with space and opportunity to reflect on the research role and process with more depth and rigour. I also had opportunities to talk to other people who had been involved in similar networks. Interviewing members of the ENSI and SEEPS provided me with other insights into looking at my data, especially during the inductive phase of data analysis. Examination of these networks helped me to gain deeper insight into the networking, and to achieve reflexive distance from the SADC CDN.

Not only did I perform the dual role of coordinator and researcher, I was also an active participant in the Community of Practice. I participated in most of the CDN activities without my research interest interfering with my role as a participant. Like the other CDN members, I can also claim that I grew professionally in course development. Evidence of my claim includes my ability to manage and edit the book '*Cases of course development in environment and sustainability education in southern Africa*'; and my ability to now support the running of special attachment programmes on course materials development. I have run three such programmes since 2004. Working with other CDN members, we drew on the network activities and experience, to support the UNEP MESA (Mainstreaming Environment and Sustainability in Africa Universities) course called *ESD Innovations: Programmes for universities in Africa* (see section 6.8.4). I was nominated to serve as part of the team of resource persons for running two of these courses, which provided orientation and professional development for 46 university lecturers from 28 countries, thus enabling me to make the experience I acquired in the CDN more widely available to HEIs in Africa.

10.8 RECOMMENDATIONS AND OPENING UP OPPORTUNITIES FOR FURTHER RESEARCH

Part of the purpose of this study was to make recommendations to the SADC REEP on how best future course-based networking activities within the programme can be formulated and run. The findings and discussions of this study have shown some research implications and have provided pointers that can inform further course development

networking within the SADC REEP. In this section, I make recommendations on three dimensions based on the findings of this study. These are: research, partnerships, and managing the institutionalisation of innovations.

10.8.1 Research

This study reveals most of the assumptions behind the formation of the CDN needed in-depth understanding of how HEIs work in southern Africa. In my discussion of underlying assumptions behind the CDN in section 9.2, I have suggested the need for thorough research to develop a better understanding of the underlying mechanisms associated with each of the assumptions. The study has also shown that there are a number of underlying causal mechanisms that enabled or constrained networking, professional development and institutionalisation of courses in the context of the CDN. In the light of these findings, I recommend that SADC REEP needs to undertake in-depth research that identifies underlying causal mechanisms in future networks. This also shows that when developing donor-funded proposals, they should be informed by research, and not only external consultants' views, as is the normal practice.

It is also my contention that the SADC REEP needs to make research a major component of the regional programme. As this study shows, need for research was high at different levels and stages of the CDN. For example, all the CDN members had to do some kind of research around course development processes. Their work would have been easier if the SADC REEP had, for example, researched normal curriculum change cycles in Higher Education Institutions. Research-informed knowledge seems to have been significant to the successful running of the CDN.

10.8.2 Partnerships

The findings of this study show that the CDN thrived on institutional support and partnerships that exist between SADC REEP and Rhodes University, WESSA and

donors. This study reveals that the SADC REEP and RUEESU alliance seemed to hold much symbolic power. The alliance seemed to have contributed significantly to the growth of environmental education in southern Africa. The study also indicates that the alliance has given SADC REEP some integrity and credibility among scholars and environmental educators in southern Africa and beyond. However, the study also reveals that some HEIs (especially universities) and individual environmental education practitioners seem to perceive the alliance as a symbol of Rhodes University's power and domination over other HEIs. This study also established, however, that even the course developers who seem to hold perceptions of Rhodes' hegemony, found confidence in working with the SADC REEP/RUEESU partnership and drew on the Rhodes materials which are copyright free and easily accessible. As shown in the study, most universities in southern Africa are constrained by institutional culture and service mainly formal education. Thus, it may take time to fully support the SADC REEP. I therefore recommend that SADC REEP/RUEESU partnership should be consolidated and at the same time SADC REEP should continue to identify new partners among HEIs in the region (probably outside South Africa) that could join the existing alliance. The CDN involving 6 universities in southern Africa, has provided a strong foundation for such alliances to be strengthened and extended.

10.8.3 Managing institutionalisation of innovations

This study reveals that there are quite a number of institutional hurdles in the process of institutionalising environmental education in the CDN partner institutions. The findings further indicate that most of the interactions between partner institutions were between the course developer and the CDN management team. The fact that management was not fully involved made the work of the course developers difficult. However, this study has also reported that in situations where staff from the SADC REEP and associates, such as the Dean from Rhodes University, visited and met the senior staff members in the partner institution, the administrators tended to support the CDN members after the meetings. Based on the above observations, I recommend that in future networks a board (such as steering committee) of senior managers of the represented institutions in a network

should be constituted. This should meet (even if it means only once a year) to share the progress of the projects and provide management insights as well as mobilise management support.

10.8.4 Opportunities for further research

As I discussed and reflected on the findings of this study, I have hopefully opened up a number of opportunities for further research. Key research areas which are worth exploring may include the following:

- Exploring and elaborating the use of relational philosophy in environmental education research;
- Elaborating the use of Community of Practice in projects informed by participatory approaches, with more emphasis on the learning processes involved;
- Researching at least 3 courses (as nested case studies) developed under the CDN to explore how they contribute to institutional capacity building; and
- Researching how selected universities and other institutions (e.g. curriculum institutions and NGOs) in southern Africa develop and institutionalise courses.

10.9 CONCLUSION

This chapter has summarised the study by examining the findings in the light of the research questions, theoretical and methodological implications as well as my personal reflections. The study shows the extent to which the research questions have been responded to. The chapter also highlights some of the limitations of each of the analytical frameworks used in the study and explains how these limitations have been addressed through the complementarity of the theoretical frames drawn on in the study. Based on the research findings, I have outlined two major contributions that I believe this study has made. These are discussed at methodological and conceptual levels. The analysis and review of the research process has opened up avenues and opportunities for further research. I have also provided four research areas that I thought (based on this study) are worth exploring.

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APPENDIX 1: COMMONWEALTH SCHOLARSHIP PROPOSAL

Commonwealth Scholarship Detailed Plan of Study

Name of candidate: Justin Kalaba Lupele

Title: Enabling professional and institutional capacity building in environmental education course development processes through networking: A case of the SADC Course Development Network.

Context of the study

This study will be carried out in the context of the Southern African Development Community (SADC) Environmental Education Course Development Network, a project under the SADC Regional Environmental Education Programme (REEP). SADC is made up of 14 countries that collaborate in various activities to enhance political, economical, social and culture integration (Lee 2003).

In 2001 a need for a network of environmental education course developers in SADC member states arose out of the demands and pressure exerted on the regional programme by institutions and individuals from the member countries. Danida agreed to fund the project for a period of 30 months, starting January 2002. The Network focuses around sharing of skills, experiences and resources among the 13 network members who are representatives of universities, teacher training colleges, and NGOs working on environmental education courses.

I was appointed as coordinator of the project at its inception in 2002. I have previously been involved in the development of learning and teaching materials in my home country - Zambia. Prior to the appointment, I was working with World Wide Fund for Nature (WWF) Zambia where I was involved in the development of environmental education courses. I have also supported the SADC REEP initiatives by participating in the development and implementation of environmental education courses since 1999. My future career prospect is focussed on making a contribution in the area of 'leadership in environmental education' in my country and southern Africa.

Purpose of the study:

Determine how environmental education course development networking processes can foster professional and institutional capacity development in a regional context.

This will be done through:

- Reviewing historical patterns of environmental education course development networking processes in the SADC REEP context
- Identifying characterizing features of environmental education course development networking processes, as these relate to professional and institutional capacity development in the SADC REEP course development network
- Identifying different actors and actants in environmental education course development networking processes, and the relationships that shape professional and institutional capacity development in the SADC REEP course development network

With a view to:

- Informing future environmental education course development networking processes that are enabling of professional and institutional capacity building in the SADC region

Methodology of the study

This will be an interpretive case study of the SADC REEP Course Development Network. Drawing on the work of Callon (1999), Latour (1998; 1999), Abramson (1998) and Strathern (1999), I shall adapt an Actor Network Theory (ANT) framework to interpret the environmental education course development processes in the context of the Network. According to Davis (2002:191), an ANT framework is useful because it enables analysis of partnerships to move beyond the simple dichotomy of structures and agents to include people, institutions and the non-human realm and to explicitly examine resources, arguments and the construction of knowledge within a relational ontology (Bourdieu, 1998) and a relational epistemology (Popkewitz, 2001). The relevance of this framework to this study is that I shall endeavour to gain insights into, not only the course development processes, but also into the relationships between actors (human) and actants (non human) and how these have shaped the networking processes. The actants, in this case, would include emails, internet based 'chat room' such as the Listserv, partner support funds and other resources available or needed by the network. On the other hand actors include all the network members and colleagues working within the SADC REEP. Data generation will be, mainly, through document analysis, which will include regional workshop reports, project documentation, and emails from the members. Other strategies will include interviews and focus group discussions, mainly for triangulation in order to confirm and clarify issues emerging from participant observations and document analysis. The generated data (primarily qualitative) will be on going. This will follow McKernan's (1996) four step model of qualitative data analysis i.e. processing the evidence (editing, coding and conceptual and theoretical sampling), mapping, interpretation of data and presentation of results.

UK Programme

The programme of research in the UK will focus on the study of environmental education and sustainability course development networking processes as this area lacks materials

in the southern African region. The UK programme will assist me (the researcher) to develop enhanced understanding of professional and institutional capacity development in the context of the European Commission supported Sustainability Education in European Primary Schools (SEEPS) Project (a regional environmental education & sustainability course development network involving teachers and teacher educators). Of particular interest to me is the concept of Action Learning Networks (as used by teachers and teacher educators in the SEEPS network). The first six months of the programme will include attending some of Action Learning Network sessions and interviews with both organizers and learners. The visit will also focus on the acquisition of information and materials on course development processes; professional and institutional capacity development; Action Learning Networks and Actor Network Theory (ANT). The last six months will be spent on collation of data and writing up a literature review for the proposed study. The insights gained from the UK trip will add depth and orientation to the analysis of data generated in the SADC course development network.

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**APPENDIX 2: COPY OF *EEMAIL* ON COURSE DEVELOPMENT
ISSUES AND CHALLENGES**

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**APPENDIX 3: METHODOLOGICAL DECISIONS IN CONTEXT –
THE DILEMMAS AND CHALLENGES OF NOVICE AFRICAN
SCHOLARS (ABSTRACT ONLY)**

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Methodological Decisions in Context: The dilemmas and challenges of novice African scholars

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Abstract

This paper emerges out of a panel discussion during a PhD week and subsequent 8th International Environmental Education Invitation Seminar held at Rhodes University in 2004 and 2005 respectively. It illuminates some insights into our struggles (as novice African researchers) in trying to respond to contextual realities as we research education and social change in African contexts, seeking insight into what counts as legitimate research in this context. The paper considers our struggles at conceptual, methodological, analytical and data generation levels, and in a politics of research. This is done by means of examples drawn from five current doctoral research projects being undertaken in east and southern African regions, using a review framework that represents fairly common dimensions of PhD research. We conclude that research, when defined rigidly within research disciplines/paradigms (as have been defined in some – primarily Western – research trajectories) may fail to take into account African social and contextual realities when applied uncritically. We argue that there is need for researchers in Africa to consider a multiplicity of approaches if research is to be meaningful in, and responsive to, social and contextual realities. In particular, we argue for taking account of socio-historical and socio-cultural contexts in creating African epistemology in and through research.

Introduction

As novice researchers, we are confronted with the challenge of generating new research approaches (or working with existing ones) that help us contribute to research as a process of social transformation of our societies (Janse van Rensburg, 1995; Lotz, 1996; Taylor, 1997). Our quest and innovations in research are often met by scholarly arguments (often Western in orientation) and reasoning of what counts as legitimate within educational and social science inquiry (Russell & Hart, 2003). In much modern, primarily Western-derived educational and social research, many researchers 'carry flags' and associate with one of the four 'main' research traditions labelled as empiricist (or positivist); interpretive, critical and deconstructive (or reflexive)¹ (Schreuder, 2004). Each of the four research paradigms has its own distinct features. These features include assumptions about reality, data generation techniques, how to carry out observations, and what is generated by the enquiry (Deakin Study Guide, cited in Schreuder, 2004). We argue that there is no one paradigm that can be used to see all 'things' in any given study.

APPENDIX 4: DATA GENERATION PLAN AS PRESENTED IN THE RESEARCH PROPOSAL

(submitted to the Higher Degrees Committee of Social Sciences at Rhodes University).

Type of data	Sources of data	Purpose of data
Socio-historical context of Southern African Development Community.	SADC documents; SADC REEP documents and other southern African literature on environmental education and/or history of education in the region.	The historical study of the socio-economical and political dimensions of SADC as it relates to the regionalism in setting the context of the study and clarify issues of methodology and issues of social transformation (in the light of professional development and institutionalisation focus of this study).
History of networking in environmental education in southern Africa.	In-depth interviews with selected environmental education course developers who have been involved in environmental education courses development within the SADC REEP context. SADC REEP document analysis.	To trace the history of networking in southern Africa with emphasis on environmental education courses. Establish how this history has shaped environmental education courses and discourse in the region with the aim of understanding the current concerns in environmental education in the region.
Intent of the SADC CDN	REES Project Document, EE course status inventory report; inception report; REES and SADC REEP documents; and interviews with the two managers of the projects.	Develop an understanding of the aim of the establishment of the REES Project and in what aspects the intended aim has been achieved.
Evidence of collective networking processes	Selected Emails that focus on course development and networking processes; 12 in depth interviews involving the CDN members; 6 workshop reports; 29 monthly reports; three project progress reports. N.B. data from these sources has been generated in the life of the CDN as an ongoing project implementation processes (between 2002 and 2004).	These will provide evidence of networking processes in relation to professional development and institutional capacity building in environmental education. Will also help establish members' understanding of own professional development and institutional capacity building.

Type of data	Sources of data	Purpose of data
Case evidence of course development processes in partner institutions	<p>Four selected case studies of course development processes in the CDN. These are being developed for a SADC REEP publication (during 2004).</p> <p>Four institutional visits to extend 4 written case reports.</p>	To interrogate course development processes in four institutions. The case studies will help to inform the observations taken during institutional visits on professional and institutional capacity building. The case studies will also be used in the construction of institutional contextual profiles.

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APPENDIX 5: TRIAL SEMI – STRUCTURED INTERVIEW SCHEDULE

(First used as focussed group discussion schedule)

Swaziland, 2nd December 2003.

Introduction

The major goals of the SADC Course Development Network are to foster professional development and institutionalisation of environmental education amongst the members and institutions of the network, respectively. This is with the aim of delivering effective environmental education course development processes in the region.

This focussed group discussion is aimed at developing a common understanding of what is meant by the terms ‘professional development’ and ‘institutionalisation.’

- 1. What is your understanding of professional development in the context of the course development network?**
- 2. What are the various components that form a cohesive and rich picture of your professional growth in the context the Course Development Network?**
- 3. What do you understand by the term ‘Institutionalisation of EE courses?’**
- 4. How can this network help in the institutionalisation and sustainability of EE courses in your institution?**
- 5. What are the problems of achieving institutionalisation of EE in the partner institutions, if any?**

APPENDIX 6: REVISED SEMI – STRUCTURED INTERVIEW SCHEDULE

Professional development, institutionalisation and communication

The major goals of the SADC Course Development Network are to foster professional development and institutionalisation of environmental education amongst the members and institutions of the network, respectively. This is with the aim of delivering effective environmental education course development processes in the region.

Professional development

1. What is your understanding of professional development in the context of the course development processes?
2. How have you professionally grown as a result of participating in the course development network?
3. To what extent have you been able to work with providers of teacher education (ministry of education, curriculum developers, and other colleagues within your institution) in professional development?
4. What have been the major obstacles to your professional growth in course development processes?

Institutionalisation

1. What do you understand by the term 'Institutionalisation of EE courses'?
2. How does your project work to develop or support capacity for change within the institution and national priorities?
3. How can this network help in the institutionalisation and sustainability of EE courses in your institution?
4. What are the problems of achieving institutionalisation of EE in your institutions, if any?

Communication

The major component of networking has been communication.

1. Comment on how the following forms of communication have affected (positively/negatively) your participation in the CDN.
 - Emails/Internet
 - Listserv
 - Telephone
 - Fax
 - Post
2. What other methods of communication would you have preferred?

APPENDIX 7: INTERVIEW SCHEDULE FOR EUROPEAN NETWORKS

Interviewer: Justin Lupele, Manchester Metropolitan University/Rhodes University.

Introduction

This interview serves to contribute to a doctoral research into how networking in environmental education can foster professional development and institutional capacity building in southern Africa. The interview will look at partnerships, institutionalisation and professional development in the context of the project/ network you are associated with.

To start with tell me about

- **Yourself** - your work and interest in environmental education/networking.
- **The project/network** you are associated with.

Partnerships

With any partnership involving multiple organisations and individuals it is almost inevitable that there will be a range of experiences, different levels of contact and degrees of association against the partners.

1. What is the aim (s) and objectives of your network/project?
2. What problem/ issue motivated the formation of the project?
3. Who were the key actors in the conceptualisation of the network/project? How were the rest of the actors recruited - consider the process of consultations and promotion of the idea. What were the possible resistance and acceptability?
4. How are the roles assigned in the network/project, and how is the network/project managed?
5. How are the interests of members of the network being maintained?
6. Discuss any benefits the partners in the network have realised so far
7. How do actors in your network/project link up with other network/ organisations?

Institutionalisation

This, among others, entails making a new programme or activity becoming an integral part of the existing programmes. Most donor projects work towards institutionalising environmental education, either within individual institutions or within broader national departments of education structures.

1. How does your project work to develop or support capacity for change within the system?
2. Reflecting back on the process, what would you do differently to institutionalise the project more effectively?
3. What theory/ approaches of institutional development or change inform your project and its work around educational transformation?

4. What are the major challenges that have emerged in the process of institutionalisation?

Professional development

An important area for networking is professional development. There are many different approaches to professional development, and a variety have been used by various projects.

1. How does your approach to and implementation of professional development fit within your organisation/national approach to capacity development?
2. What are the most important lessons about professional development that have emerged from your project?
3. To what extent have you been able to work with providers of teacher education (colleges and/or universities) in professional development?
4. What are your views on the notion that project work need to be linked to pre-service and /or in-service teacher education?
5. What theories/approaches have influenced your project's approach to professional development?

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APPENDIX 8: NVIVO DATA ANALYSIS REPORT SHOWING MEMOS

MEMOS CREATED IN NVIVO

NVivo revision 2.0.161 Licensee: JUSTIN

Project: Doctoral Study 1 User: Administrator Date: 21/01/2007 - 22:25:47
DOCUMENT TEXT REPORT

Document: INT~ # 20a - Memo
Created: 31/08/2006 - 22:42:08
Modified: 21/01/2007 - 22:25:16
Document Text:

1: This is an issue of institutionalisation. Courses developed outside the university structure are not recognised by local universities. Courses developed by NGOs are never accepted due to the rigid structures of the universities. Surprisingly even courses that were developed with the full knowledge of the Deans and HOD in some institutions never made it into the university calendar. Examples are in Swaziland and Botswana.

NVivo revision 2.0.161 Licensee: JUSTIN

Project: Doctoral Study 1 User: Administrator Date: 21/01/2007 - 22:37:50
DOCUMENT TEXT REPORT

Document: INT~#9b - Memo 6
Created: 08/09/2006 - 08:43:34
Modified: 21/01/2007 - 22:37:36
Document Text:

1: 08/09/2006 - 08:45:00

2:

3: Institutionalisation was different in different institutions. Perhaps what I need to do is to discuss it on case to case. Draw examples from the different cases.

NVivo revision 2.0.161 Licensee: JUSTIN

Project: Doctoral Study 1 User: Administrator Date: 21/01/2007 - 22:29:59
DOCUMENT TEXT REPORT

Document: INT~ #21b - Memo 4
Created: 31/08/2006 - 11:42:15
Modified: 31/08/2006 - 11:51:15
Document Text:

1: There are lessons to be learnt on the selection from the ENSI and SEEPS. While working with people we know could perform, people who shared the same interest were seen to be normal in the two network contexts - the trend in our case was different. The project implementation plan included funding for a consultancy to carry out an audit to identify potential members of the CDN- what does this mean? One assumption could have been that the SADC REEP did not know the people who were working on courses. Also the whole notion of transparency is blown out of proportion in the post colonial Africa - Perhaps the corrupt systems and regime have made donors loose confidence in us to run our affairs. We it had caused problems if SADC REEP identified members of the network without going through the audit? I feel a good network should be a voluntary association. Whilst some of the members were interested in the course EE development , there is a danger that such 'conventional' processes may bring to the network people without the heart - but just answering to call of duty.

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APPENDIX 9: NVIVO DOCUMENT CODING REPORT

DOCUMENT CODING REPORT

NVivo revision 2.0.161 Licensee: JUSTIN

Project: Doctoral Study 1 User: Administrator Date: 21/01/2007 - 22:57:25
DOCUMENT CODING REPORT

Document: INT-#10a
Created: 31/08/2006 - 09:40:02
Modified: 12/09/2006 - 22:23:52
Description:

INTERVIEWEE # 10

Nodes in Set: All Free Nodes

Node 18 of 1991 CDN institutionalisation support
Passage 1 of 1 Section 0, Para 28, 647 chars.

28: The network is coming with one major ingredient - that of regional cooperation. It is sort of very comforting to see a course that come from a body like SADC and then you find that in local universities, they have more acceptance to courses that are designed through structures that are sort of like accepted like SADC is a super-structure and then from super-structure you then you get such programmes like the programme of environmental education where the matter comes through. They tend to be more understanding and more willing to cooperate. They want to be seen as being relevant to the agenda of SADC and then this is one of the agendas.

Node 19 of 1991 challenges to institutionalisation
Passage 1 of 1 Section 0, Para 31, 663 chars.

31: There are some obstacles, some of them of course we were able to overcome them. I think the biggest challenge really is to make this course sort of like a credit course. So far I do not think we will succeed. But we will be able to accredit it in some way or the other but accreditation is formidable challenge and we need to find some way. I know the thinking that it will largely be called A University of Swaziland Certificate but the credits will not be there It will not be credited, I think you know the politics one would have wanted to build up this course for bigger courses. But for the time being the story is that by 2004 we need to complete it.

Node 41 of 1991 Institutionalisation
Passage 1 of 1 Section 0, Para 23, 681 chars.

23: Yeah, if a university lacks a structure or structures such courses may find it difficult to be accepted into a university, into the curriculum. Some universities have things like ... like in our case; we have the centre for training for consultancy and training, whose main responsibility is to administer short courses for the university. And again there are challenges which universities encounter, in our case there is a strategic plan which basically challenges the university to formulate and implement short term courses, which are basically relevant to professional development and environmental education is one of those aspects. So you tend to go through those structures.

Node 56 of 1991 Obstacles to Professional development
Passage 1 of 1 Section 0, Para 19, 581 chars.

19: Yeah there are obstacles (laugh) of course, it is not that smooth, I wished it was very smooth. The obstacles are the background we are coming from. At the beginning people really did not see how they came into this. The sense of urgency was also not there it is still not there but we are trying to address it, for instance we are working with deadlines and so on. The sense of urgency is not there, though we are building up. Then the learning process, it was not taking place faster than I wanted it to. It was like I was hurrying up for results ... but this process takes time.

APPENDIX 10: COURSE MATERIALS EVALUATION TOOL

SADC Regional Environmental Education Centre, Howick,

South Africa- 10 -20th February 2004

Tool to review course materials

The purpose of this evaluation is to gain a quick but informed impression of the quality of the course materials.

Before you start reviewing the materials record the following information about the course.

Name of course	
Qualification towards which the module contributes	
Country	
Name of programme in which this course is used (Qualification)	
The intended learners (detailed profile)	
The purpose of the course	
List of materials given to the learners	

Ways in which learners are supported	
Duration Delivery mode (contact, semi-distance, mixed mode)	
How does the course fit into the programme (if applicable).	
Entrance requirements / prior knowledge	
How far has the course been developed?	
What still need to be done?	
General Comments	

Elements	Criteria	✓	Comments
<i>Underpinning ideas</i>			
History and context	<ul style="list-style-type: none"> • The content presents a critical perspective on the influence of history and context on current environmental issues and practice. • Different perspectives are presented to show a balanced view on the influences of history and context. • The perspectives presented are based on bona fide resources. • Sources used are clearly and appropriately referenced. • The materials encourage contextualising as a 'state of mind' • Response to policies. 		

Elements	Criteria	✓	Comments
Critical reflection and reflexivity	<ul style="list-style-type: none"> • There is evidence of in-text questions that encourage learners to engage in the logical and critical development of the concepts that are introduced. • The reflection activities encourage the learners to deepen their understanding of their own context. • A variety of relevant readings are introduced to assist learners to develop their critical thinking and analytical skills. 		
Participation	<ul style="list-style-type: none"> • Learners are encouraged to weigh ideas against their own knowledge and experience and to question ideas/concepts. • Learners' prior knowledge and experience are valued and used in the development of new ideas and practices. 		
Social construction of meaning and knowledge	<ul style="list-style-type: none"> • Knowledge is presented as open, changing and debatable rather than as fixed and not to be questioned. • Diverse viewpoints and experiences are reflected in the materials. • The learners are encouraged to develop their own ideas and views. • The materials enable the learners to understand how they are contributing to the body of knowledge about environmental education. 		
Integrated nature of theory and practice (praxis)	<ul style="list-style-type: none"> • There is evidence of work-based activities that encourage the learners to gain new insights and improve their practice in the light of new understandings. • The work-based activities are relevant to the context in which the learners find themselves. 		
Environmental education processes of change	<ul style="list-style-type: none"> • The materials emphasise the importance of transformation and change and they encourage learners to explore a range of change strategies to improve practice. 		

Elements	Criteria	✓	Comments
	<ul style="list-style-type: none"> • The assessment strategy includes activities that invite learners to show evidence of how they have improved their practice through the application of what they have learned in the course. 		
Environmental education as a process of evaluation	<ul style="list-style-type: none"> • There is evidence of a course evaluation strategy that reviews all components of the course in terms of the stated purpose and outcomes. • The assessment strategy also reviews the stated purpose and outcomes to ensure that the course remains relevant. 		
<i>Orientation to the course</i>			
Introduction purpose and learning outcomes	<ul style="list-style-type: none"> • The purpose of the course is clearly spelled out in the orientation to the course. • The outcomes are linked to the purpose of the course. • Learners have a clear picture about how the different components of the course fit together. • Learners are clear what they have to achieve in the course and in each unit through the provision of clearly stated and relevant aims and outcomes or objectives. • The introductions to the course and to the units within the course are informative and motivating 		
<i>Learning and teaching strategies</i>			
Selection and presentation of content	<ul style="list-style-type: none"> • The content is contemporary and reflects current thinking and recent references. • The content is contextually rooted. • The content is appropriate to the 		

Elements	Criteria	✓	Comments
	<p>intended learning outcomes.</p> <ul style="list-style-type: none"> • Suitable readings are included and various devices are used to link them appropriately with the core text and the assessment. • The content recognizes what the learners know already (prior learning). • The content unfolds logically between various sections of the unit and the units in the course and tells a 'good story'. • The content and activities provided enable the learners to achieve the outcomes. • A variety of methods is used to present the content in order to hold the learner's attention. 		
<p>Coherence of concepts, content and methods across units. Sequence.</p>	<ul style="list-style-type: none"> • The content and activities selected reflect the underlying ideas and concepts. • Adequate links are created between the different concepts and content within units and across the units in the course. • The learning and teaching approaches and methods selected support the underlying ideas and concepts. 		
<p>View of knowledge and use of learners' experience</p>	<ul style="list-style-type: none"> • Various mechanisms are used to motivate learners to engage with the materials and to do the activities. • Enough scaffolding is provided to enable the learners to engage critically. • Sufficient and appropriate ways are used to enable the learners to learn new concepts. • There are frequent opportunities and motivation to apply knowledge and skills. 		
<p>Activities and feedback</p>	<ul style="list-style-type: none"> • The activities are clearly signposted and learners know where each begins 		

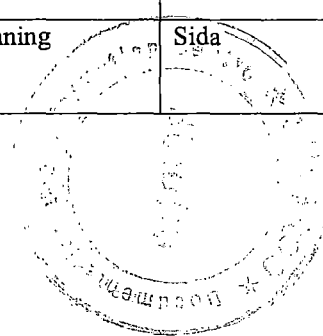
Elements	Criteria	✓	Comments
	and ends. <ul style="list-style-type: none"> • Clear instructions help the learners to know exactly what they have to do. • The activities are related to the learning outcomes. • Activities are related to life and work. • A variety of reflection activities are included at suitable intervals. • Activities are realistic in terms of time indications and resources available to the learners. 		
Language	<ul style="list-style-type: none"> • New concepts and terms are explained simply and these explanations are indicated clearly in the text. • The language used is friendly, informal and welcoming. • Learners are not talked down to or patronized. • The discourse is appropriate to the learning intended. • The language is sensitive to gender and culture. 		
Accessibility and Layout			
Learning skills	<ul style="list-style-type: none"> • Summaries and revision activities are included at frequent intervals to assist the learners to learn. • Appropriate application skills are included in the materials (such as templates and other supporting tools to applying what has been learned to the work place) • The text is broken up into reasonable sections or units. • Learning framework / map / timetable. • Evaluation process 		
Access devices (making it easy for the learners to find their way through the materials)	<ul style="list-style-type: none"> • The numbering, heading system makes it easy for learners to find their way through the text. • Headings and sub-headings are used to draw attention to the key points of the unit. This makes it easy for the learners to get an overview of the 		

Elements	Criteria	✓	Comments
	<p>unit at a glance. It also makes it easy to find parts the learners want to refer to.</p> <ul style="list-style-type: none"> • There is a contents pages that gives a useful overview of the unit. • Cross-referencing helps to link with previous knowledge and experience, with other parts of the same unit and with other units in the course. 		
Visual aids (pictures, diagrams and cartoons)	<ul style="list-style-type: none"> • The visual aids complement the text. • Line pictures, cartoons are well drawn and appropriate for the target learners. They are gender and culture sensitive. • Where appropriate concept maps and diagrams are included to help the learners to get an overview of the materials and to assist the learning process. • Captions and explanations accompanying visual aids are adequate and give the learners a clear idea of what their purpose is. • Instructions/explanations accompanying diagrams are clear and learners know what they are expected to do. • Visual aids are well placed in the text. • Visual aids are of suitable size. • Where printed materials are supported by other media, use of the other media is clearly indicated in the materials and appropriate for the intended learning outcomes. 		

**APPENDIX 11: SUMMARY OF COURSES SUPPORTED BY THE
SADC REEP**

Summary of courses supported by the SADC REEP

No.	Country	Course	Coordinating Institution	Course History	Source of Funding
1	South Africa	EE Module for ACE	UNISA - Cheryl Le Roux	Redevelopment	REES
2	South Africa	Research Design Decisions	Rhodes University - Rob O'Donoghue /Heila Lotz-Sisitka	Redevelopment	REES
3	Namibia	EE Module for BETD	NIED - David Simpson	New	REES
4	Lesotho	EE course for Sec Schools/	Nat. University of Lesotho - Tsepo Mokuku	New	REES
5	Botswana	INSET EE Course	University of Botswana - MJ Ketlhoilwe	New	REES
6	Botswana	EE through CBNRM/Machana	Chobe Wildlife Trust - Machana Shamukuni	New	REES
7	Swaziland	Course materials for RU/SW Vumi	Swaziland Nat. Trust Comm. - Vumi Nyembe	Redevelopment	REES
8	Swaziland	EE for Industry/Mandla	University of Swaziland - Mandla Mliphha	New	REES
9	Namibia	EE modules for Engineers/	Polytechnic of Namibia - Steve van Staden	New	REES
10	Namibia	RU / Namibia Course	NIED and DRFN - Georgie Fröhlich	2 ND year	Self / SEEN funding
11	Lesotho	RU / Lesotho Course	LEESP - Bontle Mokotsa	Planning	Sida
12	Mauritius	RU/Mauritian Coastal EE course	Mauritian Wildlife Clubs - Khemraj Sooknah	Planning	Sida
13	Malawi	Industry Course	Uni. of Malawi - Phillip Makhumula	Planning	Sida
14	Zambia	PRESET Course	Teacher Training College - Evaristo Kalumba	Planning	Sida



No.	Country	Course	Coordinating Institution	Course History	Source of Funding
15	Zimbabwe	RU/ZIM Industry		Running	Self
16	Zambia	EE for teachers	WWF Zambia Education Project - George Muwowo	Running for 3 years	Self (WWF)
17	Sweden / SA		Swedish / SA		
18	South Africa	RU/GF	Rhodes University/WESSA		
19	South Africa	RU ACE	Rhodes University		
20	South Africa	RU/SADC (2 months course)	Rhodes University/SADC	Running for 8 years	
21	Tanzania	RU/Tanzania (2 months course)	Sokoine University/SADC	N w	Sida
22	South Africa	University of Natal BEd Module		Running for ??....	WESSA/Sida??