

Praxis-based assignments for professional development in the Rhodes
University/ Swaziland Participatory Course in Environmental Education:
The case of assignment four

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ABSTRACT

The aim of this study was to find out how praxis is fostered in professional development processes, through the assignment four of the Rhodes University / Swaziland Participatory course in Environmental Education (referred to as the Swaziland course), in the Swaziland context. The research aimed at exploring instances of praxis in assignment four development processes and in implementing the assignment 'product' in the field of participants' practice at their schools. The research is intended to improve practice in professional development in the Swaziland course, and in the SADC region more broadly, although the case study does not assume generalisability.

The study employed a naturalistic research methodology, involving the development of an interpretive case study to aid understanding of social phenomena in the natural setting. It is influenced by the belief that knowledge is socially constructed and the assumption that meanings are generated and shared through language. The research methods involved observing interactions in the course processes during tutorials sessions and I compiled a course processes profile. I also analyzed copies of assignment four products of two course participants, and observed them using their assignment 'products' in their workplaces. Using this data, I generated two 'constructions' of the two course participants' experiences of praxis-based assignment work in the Swaziland course. I also interviewed two course tutors. Data was analysed with an intention to understand actions and interactions relating to praxis-based assignment work. Two 'layers' of data analysis were undertaken, to deepen understanding of the phenomenon studied.

Through this research I have learnt that though assignment processes enable praxis based-learning, there are problems encountered in participants' field of practice due to power relations and participants articulation of the relationship between theory and practice. These, and other structural factors impinge on reflexive agency in the context of both educational and environmental praxis. The structures in the school system frustrate reflexive agency in environmental teaching and learning, and socio-political and socio-economic structures also constrain environmental praxis, hence false consciousness prevails. Given the above situation I recommend further research into the relationship between environmental and educational praxis in environmental education and further research into reflexive agency in environmental education contexts.

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CHAPTER 1

CONTEXT OF THE RESEARCH

1.1 Introduction

This chapter introduces the study. It describes the context in which the research develops and justifies the decisions to embark on the study. It also discusses the focus of the study, highlighting the study question and objectives of the research. It also provides an overview of the thesis, through introducing each chapter and the broader structure of the thesis.

The study investigates the praxiological nature of the Rhodes University / Swaziland Participatory Course in Environmental Education (hereafter referred to as the Swaziland course), with particular emphasis on the final assignment (assignment four) which requires participants to develop a programme or resource for use in their workplace, and is therefore 'praxiological' in intent.

1.2 The Swaziland course

1.2.1 Establishment of the Swaziland course

The research draws on my personal experience of tutoring in the Swaziland course and the context in which it is being implemented in Swaziland. This is a professional development course in environmental education implemented by the Swaziland Environmental Justice Agenda (SEJA), a non-governmental organization committed to the conservation of biodiversity and mitigation of environmental problems in pursuit of sustainable living and environmental justice.

The vision and mission of SEJA are:

... the long-term conservation of the indigenous biodiversity of the Kingdom of Swaziland will depend on the [empowerment of education curriculum] and the adequate training of all educators who shall implement the curriculum, and the equitable access to benefits derived from biodiversity, [either as]

economic value and opportunities for spiritual well being and recreation (SEJA: 2000: 3).

The Swaziland course started in the year 2000 when the Southern African Development Community's Regional Environmental Education Programme (SADC-REEC) worked with SEJA to adapt and implement the Rhodes University/Gold Fields Participatory Course in Environmental Education (hereafter referred to as the Gold Fields course) in Swaziland. The Gold Fields course is a South African response to a complex of environmental issues referred to by Beck (1992) as risks of modernity. Modernity risks are global and cultural because they have to do with the actions of humans. Education is widely recognized as an agency for social change. Environmental education has also been recommended for facilitating social change towards addressing environmental issues and risks in the local and global community context. Lotz (1999: 48) writes: "Education has indeed emerged as a key response to the environmental issues and risks that confront us". The focus on social change in environmental education is related to perspectives which view environmental issues as social in origin and nature. Irwin, for example, (1995: 168) writes:

Environmental problems are **not** problems of our surroundings, but - in their origins and through their consequences - are thoroughly **social** problems, **problems of people**, their history, their living conditions, their relations to the world and reality, their social, cultural and living conditions... (cited in Lotz, 1999: 48)

A focus on 'their relations to the world and reality, their social, cultural and living conditions' (*ibid*) indicates a consideration of the interaction of the political, social, economic and biophysical conditions, as illustrated by O'Donoghue (1993). An expanded understanding of environmental issues and risks in southern Africa, drawing on this framework in the early 1990's, has led to the development of a wide range of environmental education processes effected through programmes and resource materials development. The Gold Fields course is one of these education programmes. This initiative emphasises the development of praxis-based environmental education programmes and resources (through assignment four, and other course processes).

The Gold Fields course was first implemented in Swaziland in 1999, when one environmental education officer from the Swaziland National Trust Commission joined the South African Gold Fields course as a participant, and later became a course tutor for the Swaziland based course in the year 2000. In the year 2000, the course involved local educators from both the formal and non-formal education sectors in Swaziland. They included a curriculum designer, college lecture, teacher (me) and educators from the non-formal sector. The participants of the course considered how best to apply the aims of the course in the

Swaziland context. The intention was that this group would implement the ideas in the course through work place-based assignments as well as become course tutors to ensure continuity of the course processes for social change. All the year 2000 course participants became course tutors in 2001 and their presence in the course helped maintain the interactive nature of the course, especially with facilitating discussions. In the following year 2002, only four of the first group of tutors was on the course and four others joined them. I became one of the tutors in 2001 and continued to play this role in 2002.

1.2.2 Aims of the Swaziland course

The aim of the course was to support participation in the implementation of the Swaziland Environmental Education Strategy (Knight, 2000), a policy document produced by the Swaziland Environmental Authority, which was in line with the objectives of SEJA. The professional development of teachers was seen to be fundamental to the meaningful participation of SEJA in the strategy.

A major focus of this research is the long-term development objective of the course, stated in the course project proposal as:

To develop a research-based case study of the development and implementation of this course, for broader application in other national educational contexts, including the National Environmental Education Programme (NEEP). This would include:

- 1 Development of curriculum framework based on research and experiences accumulated in the South African course,
- 2 Develop[ing] course and curriculum processes that enable reflexive and applied competence, in accordance with the framework for competence provided by the Swaziland Environmental Education Strategy, and
- 3 Conduct[ing] research into the articulation possibilities of this course curriculum in relation to environmental education unit standards (developed by the National Curriculum Centre) and teacher training qualifications (developed by the University of Swaziland). (SEJA, 2000: 7 - 8)

My experience as a geography teacher, a member of SEJA and an environmental education club advisor at my school, interested me in the above project objectives. I also made my decision to participate in the Swaziland course as a tutor, in response to the state of the environment in Swaziland, and my view that current responses to environmental issues in Swaziland are not adequately contextualised. As a result I attended the course with the first group of participants with an intention to be

well informed about environmental problems and environmental education processes. I hoped that this would enable me to pursue the objectives of SEJA and the Swaziland Environmental Education Strategy (Knight, 2000). Since joining the course as a participant in 2000, I have tutored on the course for two years. My experience in the course processes influenced my practice in terms of reasoning differently about the way I do things in relation to context. I developed confidence in doing things differently, in response to contextual needs. My beliefs and education philosophy influenced my teaching strategies. My teaching began to acknowledge that students had knowledge of their environment and learning would be more meaningful if they utilized their experiences to re-orient their lives towards living harmoniously with their environment. My teaching began to be more flexible and involve students in critical consideration of environmental issues affecting their lives. This motivated me to find out if participants in the course were developing this critical orientation towards life and how it influences their practice both in the course and in their areas of practice. I found assignment four enabling of this kind of research because it involves participants in researching environmental problems and issues that affect them and in developing environmental education programmes and resources that respond to prevailing environmental issues.

1.3 State of environment and environmental education in Swaziland

The Swaziland Environmental Education Strategy (Knight, 2000) highlights environmental issues of major concern in Swaziland. These issues arise in a wide range of sectors and include political, socio-economic and biophysical dimensions (*ibid*). Issues include: equity, population pressure, health, poverty, empowerment, and environmental rights; observable biophysical problems like land degradation; reduction of biodiversity as well as policy development and implementation issues. Accompanying these are environmental hazards in the form of industrial pollutants and waste, unknown to those that are affected most and mostly perceived by those who have access to a scientific information base. Examples include the effects of hazardous water and air pollutants, effects of HIV/AIDS on human populations and the economy as well as the relationship between poverty and unemployment.

One of the major concerns raised in the Swaziland Environmental Education Strategy (*ibid*) document relates to population behaviour. The draft resettlement policy document (Kingdom of Swaziland, 2001) relates land degradation to unsustainable land use, the most critical factor contributing to erosion. It highlights that land degradation results from many contributing human factors that include overgrazing, road

construction, deforestation and urbanization. The document also indicates that those factors result in the reduction of biological diversity and decline in the productivity of the land. Unsustainable land use is critical to subsistence and commercial production as well as industrial activities.

According to the Swaziland Environmental Education Strategy (*ibid*) the major dilemma facing Swaziland currently is how to involve rural communities in sustainable, productive activities to cope with the rising population base (Knight, 2000: 13). One of the main reasons why the strategy (*ibid*) is concerned about rural people is because the rural areas contain the major resource base of Swaziland, including productive land and other natural resources. The strategy recognizes the need to promote actions among the Swazi people. These actions include awareness raising activities, and activities to ensure environmental sustainability necessary to maintain the productivity of Swazi Nation Land and Title Deed Land (*ibid*), Swaziland land tenure systems defined below.

Environmental problems and risks are, however, not localized (Beck, 1992). They affect both rural and urban populations. The *Times of Swaziland* through this headline “**Industrial pollution, the silent killer**”, raises this issue and goes on to say:

Even though HIV and AIDS is the priority concern nowadays in Swaziland, there is a silent killer and that is industrial pollution. Industrial pollution poisons the land, water and air affecting thousands of residents who live in and around polluting industries (Times of Swaziland. Tuesday, December 2, 2003).

Industrial pollution, especially waste dumped in rivers affect all sorts of life using that river from the source of pollutants to the river mouth. The same applies to atmospheric pollution. Even though industrial development seems to be the answer to unemployment issues, it brings with it hazards that are detrimental to the environment, particularly since these hazards are often neither visible nor measurable except through scientific expertise (Beck, 1992).

In the Swaziland context, Swazi Nation Land is land that belongs to the nation with authority vested in the King who in turn gives authority to Chiefs to allocate it to the people to settle and produce crops (*kukhonta*) (Armstrong, 1986; Kingdom of Swaziland, 2001). Individuals do not have ownership of resources in Swazi Nation Land but they enjoy communal rights to use land resources (Armstrong, 1986). In my observation this results in a situation where many people do not see themselves as responsible for damages and

therefore employ irresponsible practices or shun any observable destruction with the hope that the government will take care of the problems. The rate of environmental degradation is therefore not easy to control.

Title Deed Land is private tenure land that may be held by freehold title or by concession. According to Armstrong (1986:3) "The Concession's Partition Act (land) 28 / 1907) provides for granting a freehold title to concessionaire holding title to ownership of land or leases for more than 99 years". Under this legal colonial system, private companies are allowed to own land for commercial purposes (Title Deed Land) in rural areas. Hence plantation industries are found in the rural areas under privately owned land but they take advantage of communal resources like rivers and use them irresponsibly as indicated above.

The above situation encourages the occurrence of problems like industries dumping waste in rivers or on open ground causing both water and air pollution (Yonge Nawe, 2003:5). This in turn results in unhealthy living conditions for occupants of such areas. Examples of such cases may include industries at the Matsapa industrial site, which have been observed dumping waste into the *Lusushwana* River (Times of Swaziland December 2, 2003; Yonge Nawe, 2003). The World Bank (1999:54) indicates that "Pollutants produced by industrial activities - solid waste, toxic wastes, and substances that cause air and water pollution - may impose costs on society and individuals". The effects of industrial pollution referred to as externalities of industrial production may have effects that include any of the following: health impacts, direct and indirect effects on productivity, aesthetic and negative effects on eco-systems (*ibid*). Hence pollution is not only life threatening but also an economic concern.

The Swaziland Environmental Education Strategy (Knight, 2000: 14), however, considers environmental issues from a different perspective, and puts forward concerns about the rural poor degrading the environment by depending on natural resources for subsistence. It further suggests that environmental education can empower people to be in a position to utilize alternative sources to earn a living. Urban migration, resulting from poor living conditions in the rural areas (which force people to migrate to urban areas) leads to many poor urban dwellers who, when they arrive in the urban areas, are not always able to find employment. The phenomena of poor urban settlements and migration of the poor from the rural areas to the cities are perceived to be the cause of unhealthy living conditions in informal settlements (Aduwo & Obudho, 1989). However, research has indicated that unemployment and lack of decent housing may be other causes of their plight and associated problems (Motsa 1994). Environmental degradation may not just

be ascribed to the dependence of rural people on natural resources because it is not only rural people who are poor that cause environmental degradation. Environmental degradation is linked to many interrelated socio-economic and biophysical factors that also involve the political climate and orientation. Hence I feel that the Swaziland Environmental Education Strategy's definition of environmental problems is superficial and somewhat biased.

The occurrence of HIV/AIDS has created other socio-economic threats by claiming the lives of economically productive people, leading to uncertainties in future development of the environment. According to the *Times of Swaziland* (2nd December, 2000), "Swaziland is globally ranked amongst the top five countries that have a high HIV/AIDS prevalence rate" with UNAIDS (cited in MCDI, 2003) producing estimates indicating that 115 000 Swazis are living with HIV and 50 000 have died of AIDS. This epidemic is a serious health hazard to the youth that will spend a major part of their lives sickly and economically unproductive due to the HIV virus. HIV /AIDS is not only a health risk but also an economic threat.

However, Swaziland has long realized the need for responses to environmental problems and issues. Swaziland has identified and developed policies, laws and environmental education programmes in response to these issues and risks, drawing on insights from international conferences and documents such as Chapter 36 of Agenda 21 developed at the United Nations Conference on Environment and Development held in Rio in 1992 (Knight, 2000). Major responses to environmental problems in Swaziland include the establishment of the Swaziland Environmental Authority (SEA), establishment of environmental education centers as well as implementing environmental education in the formal education system in the primary school curriculum.

In 1992 the Government of Swaziland passed an Act to establish the Swaziland Environmental Authority (SEA) and assigned it certain functions and powers over environmental concerns in the country. These are some of the functions and powers, as defined in the Act:

- (1) (b) to assist the minister to formulate policies relating to environmental matters;
- (i) serve as the focal point for the co-operation of liaising with national and international organizations on environmental matters;

- (m) review and approve from an environmental standpoint projects with potential impact on the environment;

(n) control all forms of environmental pollution including pollution caused by the discharge of toxic wastes into the air, water and land in the manufacture of toxic or hazardous chemicals;

(o) institute measures for the co-ordination and enforcement of environmental protection legislation and of international conventions and for the prosecution of the offences in co-operation with relevant bodies and police forces;

(2) To enable the authority to carry out its functions and exercise its powers under this section, the Authority will review all projects with a view to determine their potential impacts on the environment. (Kingdom of Swaziland, 1992, S2 - S3).

Yonge Nawe (2002) attributes problems of industrial pollution to both inadequate and weak legislation in the country, pointing to a problem of law enforcement in the country constraining the functions of the 1992 Act. However, it is hoped that the repeal of the 1992 Act by the establishment of the 2002 act (not yet effected) which also seeks to make the Swaziland Environmental Authority a parastatal instead of a government institution will improve the situation (Kingdom of Swaziland, 2002).

1.4 Environmental education as a response

Another response to environmental issues in Swaziland, has been environmental education projects and programmes for awareness raising. This response was strengthened in May 2000 when the Swaziland Environmental Education Strategy was drafted (Knight 2000). The strategy is the implementing agent for the Swaziland Environmental Action Plan (SEAP) (*ibid*) a national policy document. Of relevance to this research is the fact that the Swaziland Environmental Education Strategy advocated for the involvement of the education sector in both formal and non-formal education in environmental education for sustainable living (*ibid*).

However, my observation of the implementation of environmental education processes at high schools and teacher training colleges, indicate that these processes have not been enabled, even after the drafting of the strategy. The existing structure of education still puts emphasis on examination focused learning, based on colonially inspired orientations to education and foreign curricular, hence depriving teachers off opportunities to provide contextual practice-based learning experiences.

Another issue related to the above is that teachers have not been exposed to environmental education at all, except for those who have access to workshops on environmental education that are organized by Non-

governmental Organizations (NGO's). So there is an acute shortage of teachers that are qualified to teach environmental education. Chances for teaching it are also not really available, given the structuring of the curriculum according to discipline and examination-based frameworks. Even those who attend workshops, motivated by their own interest have very little opportunity to implement what they have learnt in the formal system because the education policy places no emphasis on environmental education. Also, examinable subjects enjoy priority over any other activity no matter of what importance it may have in society.

Considering the lack of opportunities for environmental learning in the formal school system and the ineffectiveness of legal government instruments in addressing environmental problems and risks in Swaziland, SEJA saw the need for a course that will allow for the development of professional competencies in environmental education among teachers and other adult educators.

The South African Gold Fields course was seen to be a relevant response to the complexity of environmental issues and the authoritative education structure that is not allowing for change. A significant feature of the Gold Fields course is the praxis-based assignment work, more popularly referred to in the course as 'work-based' assignments. The relevance of praxis-based learning in the context of Swaziland is related to the complex nature of the environmental issues and risks (as outlined in section 1.4 above).

1.5 Aims and objectives of the study

1.5.1 Aim

This study aimed to find out how praxis is fostered in professional development processes through assignment work. To do this, I studied the processes associated with one of the praxiological assignments in the course in some depth (assignment four). This assignment requires participants in the course to develop a resource or programme for use in their workplace (see section 2.5.2). Participants are encouraged to adopt a reflexive approach to the development of this assignment.

1.5.2 Objectives

The study sought to address the above aim by:

- 1 Critically reviewing assignment four processes against the course orientation by observing interactions during tutorial workshops,

- 2 Investigating how the course orientation supports praxis development, and
- 3 Investigating the playing out of praxis in the presenting, application and reflection on assignment work (in the context of assignment four of the course).

1.6 Structure and contents of the thesis

1.6.1 Clarifying the research focus

In this thesis I present insights from literature that have helped direct my focus on the notion of praxis. Clarifying the focus of the study was not easy because of the nature of its aims and the orientation of the course under observation. The motive behind the study was to try and understand how processes of participation in the course enable praxis. This involved observing practice at workshop tutorials, and observing practice in context. Exactly what to observe was not very clear at the beginning, as I had a very superficial understanding of praxis, which influenced my early observations. I then sought in-depth literature informing the theories that guide the course processes. Given the focus of this research, I sought to understand praxis in more depth, through insights from the literature, and a deepening of my observations and interpretations. I found that an iterative process emerged between theory and research processes as I explored this focus in some depth. I also drew heavily on research that has been conducted in South Africa on the Gold Fields course. This also helped me to direct the focus of the study, as it developed.

This thesis reflects both the struggles and the successes that resulted from the research focus and the research design decisions I made to guide the study.

1.6.2 Overview of the chapters

Chapter one 'sets the scene' for the study. It establishes the context in which the study takes place. This chapter introduces the research focus question and outlines the research objectives. It also provides an overview of the organisation of the other chapters that follow.

Chapter two of this thesis explores different perspectives of praxis, starting with phenomenological interpretations of praxis in Greek philosophy. It also reviews critical modernist interpretations of praxis and sociological perspectives on praxis. It seeks to explore the meaning of the idea of praxis by highlighting its

major features and how it has played out in society. Furthermore it relates the sociological definition of praxis with curriculum issues in education. In this context praxis is seen as a process of change and the sociological perspective reveals the significance of the context in which praxis takes place, in processes that lead towards change in education and society. Lastly, it also discusses how praxis plays out in professional development through the Gold Fields course and in assignment work in the Swaziland course.

Chapter three discusses the methodology and methods used to investigate the development of praxis in the course. This chapter demonstrates my understanding of naturalistic/ interpretivist enquiry, a qualitative paradigm in research, and how it is relevant for my case study. I indicate that I studied three course participants' interactions in the course relating to assignment four in some depth, in order to understand praxis. In this chapter I also share the experiences I have had in doing this type of research and I discuss ethical issues and trustworthiness concerns relevant to the research process.

Chapter four describes learning opportunities offered by the praxiological assignment development processes and shows constructs (profiles) of the experiences of two course participants in the praxis-based assignment work of the Swaziland course. A third participant's assignment process is used to illustrate interactive processes during assignment discussion tutorials in the context of the on-course tasks, given that I was unable to develop a full 'construct' of this participants interaction with the assignment process.

Chapter five presents a discussion of the findings according to principles of praxis observed from the interactions in the assignment development processes. This discussion draws on the findings reported in the constructs in chapter four. This chapter describes the praxiological interactions according to basic principles of praxis which include: learning based on real life issues; action and reflection in context; and social construction of meaning - as these relate to the different perspectives of praxis discussed in chapter two.

Chapter six provides a concluding summary, and presents recommendations based on the findings discussed in chapter five. Recommendations are made to course developers, tutors and participants in the Swaziland course context, as the study does not assume generalisability.

1.7 Conclusion

In this chapter I have introduced the context of the study. I provided some insights into the ways in which the Swaziland government are responding to environmental issues and risks. I introduced the key policy developments, including recent developments associated with the Swaziland Environmental Education Strategy and the Environmental Education Strategy for Swaziland. I also indicated that environmental issues in Swaziland appear to be superficially defined, and that the education system does not easily enable environmental education processes. This provided SEJA with the motivation to establish an environmental education professional development programme in Swaziland. The South African Gold Fields course was used as a starting point of this initiative, and I chose to investigate the praxis-based nature of the assignment process in the Swaziland course. In the next chapter, I discuss praxis as a steering idea in environmental education professional development in more depth.

CHAPTER 2

PRAXIS: A STEERING IDEA IN ENVIRONMENTAL EDUCATION PROFESSIONAL DEVELOPMENT

2.1 Introduction

The Swaziland course is a professional development course that involves adults in environmental education processes. It seeks to address the perceived lack of personnel trained in environmental education in the SADC region and in particular Swaziland. NETCAB (1999:15) cites lack of teaching and learning materials as some of the constraints to environmental education and environmental education processes in the region. The Swaziland Education Policy Statement highlights that "... the present system of education has not adequately adapted itself to the changing needs of society" in the sense that it has not fully addressed "... the problems of relevance, quality and accessibility" (Kingdom of Swaziland, 1999:2).

The Swaziland course was adapted from the Gold Fields course (as indicated in Chapter 1). A major focus of the course is praxis-based assignments one of which forms the main focus of this study (see section 1.5). In order to investigate the main features of praxis this chapter defines praxis, drawing on phenomenological, critical modernist and sociological perspectives, highlighting how action is constrained by social and educational structures in the field of education. This discussion also illuminates changes in the meaning of praxis. It discusses praxis in curriculum and in the Gold Fields and Swaziland courses and how it plays out in assignment development processes.

2.2 A phenomenological perspective of praxis

The concept of praxis in educational and other settings has, in the twentieth century, evolved from the Greek meaning of *praxis* which used to mean doing, acting, practice (noun for action, derived from *prattein - to do*) to mean "action that is entailed by theory or a function that results from a particular structure" (Simpson & Weiner, 1989: 291). For, example, Magnus (1255 cited in *ibid*) defined praxis as a practice or exercise of a technical subject or art, as distinct from the theory of it, and as the habitual action or accepted practice and custom.

In both earlier definitions is the sense that practice is detached from any framework but is an end in itself. It is as if praxis is positively associated with doing what has to be done. For example, a mathematical exercise to a primary school child would be something one does habitually - as part of the routine of schooling. It is associated with any accepted practice, done only because it is accepted, without any thinking put into the action. In support of this perception of praxis Apol (1981: 39 cited in *ibid*) quotes Aristotle as having said, "... it is not *gnosis*, but praxis ... [that] must be the fruit", as if knowledge and the results of action are separate from one another, when in real life knowledge and action are intertwined, involving both consciously or subconsciously knowing why and how to do it.

After 1910, Husserl pointed out that the study of structures of consciousness that enable consciousness to refer to objects outside itself require reflection on the content of the mind, to the exclusion of everything else (phenomenology) (<http://www.connect.net/ron/phenom/html>, 25/05/03). He contemplated the content of his mind to be such acts as remembering, desiring, perceiving and the abstract content of these acts (*ibid*). He referred to these as meanings and he claimed that these meanings "... enabled an act to be directed towards an object under a certain aspect", which he referred to as intentionality - the essence of consciousness (*ibid*: 291).

Heidegger did not consider making meaning necessary to account for intentionality, but recommended action on the world to realize projects as a more fundamental kind of intentionality than mere thinking about projects. He found action more relevant for making possible the directedness analyzed by Husserl (*ibid*). A French philosopher Maurice Merleau-Ponty, also stressed the role of active involvement of the body in all human knowledge (*ibid*).

However, in the light of the above views I feel that whatever action we get involved in, is a product of a meaning making process that feeds on the perception of reality and directs our actions to respond to these perceptions of reality. Processes of meaning making involve thinking based on knowledge and ones perception of reality. Such processes involve consciously reflecting on theory to direct action and the relationships that arise as a result of this contemplation in action. This notion of praxis leads us to explore the critical modernist perspective of praxis with the idea of ideology critique.

2.3 Critical modernist perspectives of praxis

Under the critical modernist perspective it is worth noting that praxis draws from critical social theory as put forward by the Frankfurt school. The Greek term praxis was given a special meaning in Marxist philosophy, when it was used to refer to the idea of 'the unity of theory and practice' (Bullock & Trombley, 1988: 676). Marx claimed that theory (thought) arises out of practice and is developed and modified in it (*ibid*). He believed that the "... split between 'ideal' and 'reality', between an irrational world and a rationalist critique of it, could only be overcome by the development of a theoretical consciousness among social groups engaged in the practice of changing the real world" (*ibid*: 676).

According to Cornbleth, (1990: 3) key features of critical modernist theory are "... its stance against forms of domination and context sensitivity ... " and it entails questioning appearances and taken for granted practices as well as probing assumptions and implications. The critical perspective focuses on the broader social context including social systems and the school system as an agent of the broader social system, and how the structures there have impinged on education practice. The basic aims of the critical school of thought are enlightenment and empowerment, which are seen to have a potential to foster personal and social emancipation from various forms of domination (*ibid*).

Marx uses the concept of praxis in his radical challenge against capitalism and capitalist domination of the masses by the upper class in society. The concept of praxis was used by Cieszkowski in Berlin 1838, and was later adopted by Marx in 1844, when it was used to denote '**willed action**' by which a theory or philosophy became a means to social equality and could be attributed to someone and transferred to the other (Simpson & Weiner, 1989: 291, my emphasis). Specifically, the Marxian concept of praxis meant the involvement of the oppressed in the historical process of change. In the early writings of Marx, the concept praxis was translated as practice, practical ability, or practical activity (*ibid*). Willed action implies selective, purposive behavior (intentionality). According to Hook (1933, cited in *ibid*) Marx claimed that only in practice could problems be solved considering that practice is praxis or willed action. He was interested in explaining, "... how knowledge could give power to challenge and change the *status quo*" (*ibid*: 291). It was more than a principle of consciousness but a "... pre-reflective unity of nature and consciousness whose implication can be created in thought but not initiated" (*ibid*). Drawing from Hegel and Karl Marx, McLellan, 1969:10 cited in Simpson and Weiner, 1989: 291) noted that the main agent in this transformation was not to be 'thought', as in Hegel's philosophy, but 'will' was the force behind the synthesis of thought and action.

Another perspective on theories advocating for social change is presented in Ulrich Beck's theses of reflexive modernization (Beck, 1992: 2-3) focusing on the role of science and knowledge. Although Beck's thesis is a critique of the dictates of scientific knowledge, its reflexivity makes it applicable in society and it can lay a claim to moral rationality (*ibid*: 2). What makes it relevant for this discussion is its recommendation for praxiological processes of social change (reflexive modernization). Beck asserts that in order for societies to really evolve, modernization must be reflexive (*ibid*). His theory holds that "... modernization involves not just structural change, but a changing relationship between social structures and social agents" (*ibid*). He claims that at a certain level of modernization, agents become individualized or decreasingly constrained by social structures. And for modernization to be successfully pursued these agents must release themselves from structural constraint and actively shape the modernization process (*ibid*). Giddens asserts that by having tacit knowledge, agents have the potential to change their patterns of action through 'discursive reflexivity' on their actions (Kasperson cited in Undersen & Kasperson, 2000: 380). According to Beck (*ibid*), when social class structures decline social agents become free to reflexively construct their own history by restructuring the rules of their workplace and the distribution of resources and their time (*ibid*: 3).

Critical modernist theories do not necessarily address environmental education issues but some of their proponents, like Habermas and Beck did understand that social change is a learning process (*ibid*: 9). Marx did not find education important for the socialist revolution, because he found it to be serving the interests of the dominating class (Ellias & Merriam, 1995:142). Giroux and McLaren (1987: 267) made a similar observation that the political space for teacher education "... shuns the struggle for teacher empowerment and serves to reproduce technocratic and corporate ideologies that characterize dominant societies". They continue to argue that the main objective of teacher education is to produce intellectuals who operate in the interest of the state, whose social function is to sustain and legitimise the status quo (*ibid*). However, Paulo Freire (1972) and other adult education philosophers have used Marx's ideas such as false consciousness, alienation, class struggle and political revolution in developing a radical philosophy of adult education that centers on the notion of praxis.

2.4 Praxis in education and society

The understanding that education is an aspect of society and that social change is a learning process brings the notion of praxis to the fore in educational circles. The culture of capitalist domination has been pursued through a moral philosophy behind education processes, exerted by those in powerful positions. Robottom

(1987a: 292) observed that education systems have "... tried to divulge, sustain and perpetuate sets of social values". He further shared the sentiment that "... such values are shared by those who exert power and are in charge of education institutions, which results in the indefinite survival of the system they are devoted to" (*ibid*). Such education systems have adopted the vocational or neoclassical orientation to education with an intention to develop skills relevant for their work roles within the state structures that are accepted uncritically (Janse van Rensburg & Le Roux, 1998: 10). With the growing need for change, this rule-bound behavior governed by technical rationality has been challenged in environmental education and an ideology of critique has been recommended (Robottom, 1987; Fien 1993).

Marxian and neo-marxian perspectives have influenced environmental education thinking over time. Environmental education thinking has evolved (in southern Africa) from neo-classical orientations to more socially-critical orientations as outlined by (Kemmis *et al.*, 1983; Fien, 1993 and Greenall Gough & Robottom, 1993).

The neo classical or vocational orientation focuses on skill development to satisfy the labour market by fulfilling learners' work roles. Fien (1993) notes that it is an education that accepts existing social and hierarchical structures and by so doing may perpetuate social oppression and inequality (Lupele, 2002). The vocational is pursued through authoritative practice in teaching and learning, where the teacher (an agent of the social system) is the authority and learners are recipients of unquestioned knowledge and uniform assessment standards for all. This is the type of learning that perpetuates capitalist interests that is challenged by Marxian thinking and the development of the Freirean revolutionary pedagogy and philosophy of adult education. The aim of the Marxian and neo-marxist perspectives is the liberation of the oppressed individual to prepare them for life (Fien, 1993) rather than for the job market. It contributes towards change from neo-classical/behaviorist thinking in environmental education to more critically oriented educational processes. It favours open-ended inquiry-based teaching methods, the negotiation of curriculum content with students and assessment procedures that indicate evidence of individual achievement and growth (Fien, 1993; Lupele, 2002). The Gold Fields course is an adult learning course that appears to have drawn a lot from Freirean educational thinking.

Challenges posed by complex environmental problems highlighted in the message form Tbilisi, "The problems of the environment are indeed complex ones" (Robottom, 1987(a): 291) have further influenced change in environmental education thinking towards a more socially critical orientation. This orientation is

draws on the Habermasian knowledge interest which is centered on ideology critique (Habermas, 1975, cited in Grundy 1987). According to Palmer (2001:216) "Ideology critique, in some part, is a critique of the illegitimate operation of power and hegemony in capitalist society". Palmer (*ibid*: 216) further assert that Habermas suggests that ideology critique can be addressed in four stages including:

- Stage 1: Description and interpretation of the existing situation
- Stage 2: Identifying the causes and purposes of a situation and an evaluation of their power and legitimacy.
- Stage 3: The setting of the agenda for altering the situation - in order for moves to be made towards an egalitarian society.
- Stage 4: An evaluation of the achievement of the new, egalitarian situation in practice.

Critical theory and critical praxis of this nature seeks to liberate and emancipate individuals and groups from ideological distortion. Eagleton, (1991, in Cohen *et al.*, 2003: 28) asserts that critical theory identifies the "false" and fragmented consciousness that renders individuals and social groups to relative powerlessness, and questions the legitimacy of dominant forms of power in social settings (how it represents the general interest).

Authoritative structures prevent people from acting in their self-interest. Socially critical perspectives in environmental education (as outlined by Robottom, 1987a; Fien 1993; Lupele, 2002; Malone, 1999; Babikwa 2002) offers the application of different ways of practice in teaching, that allows for meaning making, in order to direct actions through conscious reflection on context. Action research is an example of such a method that is seen as relevant for facilitating change through practice and reflection on practice. It is a praxiological process of collaborative learning. Although the assignment four process is not necessarily an action research process, it borrows from action research by being participatory and praxis based. Thus, the socially critical introduces a need for education to be sensitive to factors determining context and how they influence educational practice.

2.4.1 Sociological perspectives on praxis

A sociological perspective locates praxis within the perceived structures of social systems and highlights factors constraining action in the social field. It agrees with Cornbleth, (1990:6) when she asserts that curriculum in the education field is 'contextually shaped' and that context is both 'structural' and 'socio-

cultural'. Structure in the context of the school refers to established roles and relationships, operating procedures, shared beliefs and norms (*ibid*). Education and specifically curriculum matters are not only philosophical but political as well. This view observes that the field of education is under the control of the State and is meant to reproduce the philosophy of the state. Cornbleth (2000: 2) also concurs with this notion. She further defines political as "... the means by which power is exercised to shape if not direct others' actions, in this case curriculum policymaking processes, the policies made, and classroom curriculum practice" (*ibid*). This view indicates that the practice of education is not independent from societal political structures. It concurs with Bourdieu's (1977, 1998) concept of social space or field in his theory of a reflexive sociology.

Bourdieu's (*ibid*) theory of reflexive sociology offers an approach to understanding intellectual practice within the 'social field' and provides "... a metaphor for understanding power struggles" (Palmer, 2001: 230). He sees a theory as a way of understanding and explaining action in the social setting, which does not dictate ways of acting. His idea of a 'field of power' refers to a way of seeing the whole society with its hierarchical structuring in relational terms (*ibid*: 232). Bourdieu's (1977, 1998) concept of 'social space' refers to "... the space of overall social class relations" (Popkewitz & Fendler, 1999: 121). According to Popkewitz and Fendler, (*ibid*) this theory holds that the field of education is located within a 'field of power' that is specifically dominated by those in the political and economic fields. According to this view the education field serves the function of implementation rather than invention and creation. It only transmits those aspects of culture that are valued by the dominating class. Bourdieu's theory of social space relations views the school system as an agency or agent working with 'borrowed instruments and by delegation' in the reproduction of human resources and distribution of culture (*ibid*: 122).

The sociological perspective seems significant in education (and environmental education) discourse because it highlights the context in which education practice takes place and sheds light on educational ideologies being followed. It portrays factors that may constrain action in the practice of education. For example, in my observation as a classroom teacher, it is very difficult for a teacher or even a student to break away from the scheduled curriculum activities and respond to environmental or other issues of social relevance in the course of normal schooling.

Robottom (1987: 292) asserts that:

... behind any educational process lies a philosophy, a moral philosophy, for the people who exert power and are in charge of educational institutions share certain values, which they wish to disseminate in order to ensure the prolongation, if not the indefinite survival, of the system they are devoted to.

The incorporation of these notions of praxis appears to be a response to this situation in environmental education discourse. It is meant to develop reflexive teachers who will be able to develop actions that are responsive to environmental and education problems encountered in different contexts, leading to the enabling of a reflexive society. Those would be teachers who would be able to understand and interpret context and act responsively and reflexively (from an educational *and* environmental perspective).

2.4.2 Curriculum as praxis

Praxis in Freire's (1972) context is defined according to basic principles that are opposed to or responsive to the limitations of the authoritarian type of education system, characteristic of State and economically dominated education systems such as those in Swaziland and apartheid South Africa. He propagated emancipatory education, not the accumulation of facts or information, which he referred to as 'banking', or the transmission of knowledge (Apple in Palmer, 2002: 130). Freire believed that teachers and students must learn from each other in the learning process and the process must be based on critical dialogue and mutual knowledge creation (*ibid*). He emphasized the role of teachers as 'critical cultural workers', who must struggle with the dominant cultural values in society and within themselves, in order to understand their cultural and political functions (*ibid*). He believed that this struggle could lead teachers to work in reflexive and transformative ways beyond the classroom (*ibid*). Grundy (1987: 104 - 116) characterizes praxis in the Freirian tradition with the following principles (which are discussed in sections 2.4.2.1 - 2.4.2.4 in more depth):

- Constitutive elements of praxis are **action** and **reflection**,
- Praxis takes place in the **real**, not the hypothetical world,
- Praxis operates in the world of **interaction**,
- The world of praxis is the **constructed**, not natural world, and
- Praxis assumes a **process of meaning making**, but recognizes that meaning is socially

constructed, not absolute.

These principles of praxis provide the basis of a number of the steering ideas in the South African Gold Fields and Swaziland courses. The course curriculum design supports praxis-based learning through work based assignments like the assignment four (Janse van Rensburg & Le Roux, 1998; Lotz, 1999; see also section 2.5.2). The next section discusses these principles and their significance in supporting praxis in the course in more depth.

2.4.2.1 Action and reflection

The constitutive elements of praxis, action and reflection indicate that curriculum praxis is not a plan to be implemented but it is constituted through an active process in which planning, acting and evaluating are 'reciprocally related' and integrated into the process (Grundy, 1987: 115; Lotz, 1999: 31; Janse van Rensburg & Le Roux, 1998: 107; Cornbleth, 1990: 6). This process allows for socially critical education. Greenall Gough and Robottom (1993: 305) note that socially critical education "... seeks to locate and interpret current culture within a historical context ..." to be able to engage with knowledge and learn what our bureaucratic culture has not allowed us to learn, to be part of the process but not products.

According to Grundy (1987:104) Freire believed that praxis consists of action and reflection and therefore requires theory to reflect on action. This claim is based on the fact that anything that we do is informed by some kind of thinking emanating from our past experiences. Teaching about what has happened in the past involves reflecting on the past. This is what Grundy (1987:104) refers to when she asserts that although theory and practice have a relationship, it is not a linear, but a reflexive one. Knowledge builds upon theory in this process of action and reflection on action (*ibid*). According to Freire (1972a: 31) "The act of knowing involves a dialectical movement which goes from action to reflection and from reflection upon action to a new action" (*ibid*). Cornbleth (2000:6) sees this as an overlap or interweaving between theory and practice. She asserts that theory is seen to emerge from practice and to act back on it (*ibid*). In other words we see the world through our theoretical perspective or lenses and that influences the way we act within or on it and how it influences our actions in turn. This contention concurs with Beck (1992) and Heidegger's position (see section 2.2).

Edwards (1997: 149) sees reflection in the discourse of professional development in adult learning as resulting from the challenge and displacement of the 'technical expert' in education. He asserts that the

process of reflecting on and analyzing particular circumstances is associated with the ability to cope with and shape change and uncertainty, by interpreting and responding to the particular circumstances one finds oneself in. His assertion is significant to environmental education processes, when we consider that environmental problems and issues of the contemporary world are complex (Beck, 1992; Lotz & Robottom, 1998). This complexity requires creative participation in responses, not rule-bound behavior that might not be responsive to particular circumstances. Edwards (*ibid*: 150) contends that reflection and personal responsibility for one's actions displace the application of externally available scientific knowledge.

In this context action and reflection is seen to be significant for environmental education processes for bringing about responsible action by changing the authoritative knowledge base in education (and environmental education) discussed in section 2.4.1. It is through action and reflection on (and within) social structures that education would serve the function of invention and creation rather than transmitting or implementing the values of those dominating classes in society (as stated by Popkewitz & Fendler, 1999). Edwards (1997) recommend reflection for shaping change in adult learning through analysing particular circumstances and interpreting the context in which one finds the self and others acting at any given moment.

2.4.2.2 Praxis in the real world

Based on the above argument, praxis takes place in the ordinary life setting, in the real world on which we act. One sees the need to do something in response to a problematic prevailing situation or context. Hence Grundy (1987:105) refers to it as 'social praxis' and points out that it takes place in the real but not hypothetical world. Context refers to the interrelated cultural and social conditions under which interaction occur. Considering Bourdieu's contention that practice is constrained in social space and that curriculum is 'contextually shaped' (Cornbleth, 1990: 6) education is one field in which action is constrained by authoritative socio-economic and political structures. Hence action in the real world is determined by context. However, Beck's (1992) thesis holds that people are able to become reflexive agents and through reflection become more free to restructure the rules, and re-distribute their time at the workplace. Giddens' view (Kasperson cited in Underson and Kasperson, 2000: 380) that people have a natural potential to shape their actions through 'discursive reflexivity' complements this idea of reflection for re-directing action within the cultural context. In Freire's notion, praxis means acting 'with' but not 'upon' others (Freire, 1972: 66 cited in *ibid*).

Praxis opportunities in the Gold Fields course are provided through the course orientation which is centred around participation in the development of work-based assignments. By being work-based, the assignment encourages participants to work with others on the course and the communities they serve and research real life issues relevant to their work and community contexts as part of the assignment.

2.4.2.3 *The constructed world of praxis*

According to Grundy (1987:105) "The world of praxis is the constructed, not the 'natural' world ...". It is the world where meaning of the world is shared on the basis of the way life is being experienced and related to the past in constructing the future. Therefore, praxis not only takes place in the constructed world but is also an act of 'reflexively constructing' or 'reconstructing' the social world (*ibid*).

2.4.2.4 *Praxis as a process of meaning making*

It then follows that praxis in Freire's context is a process rather than just an act. According to Grundy (*ibid*, 105 - 106) it assumes a process of meaning making, while recognizing that meaning is socially constructed but not absolute. Meaning making is contextual, that is, certain factors in context influence meaning making process. For example, power relations and systems of structured control may influence the meaning making possibilities and processes in any given context. This notion of meaning making is situated within the realm of social constructivist thinking, which assumes that, "... meaning and knowledge are socially constructed by human beings in interaction with one another and with the cultural understandings into which they become socialised" (Berger & Luckmann, 1967, cited in Janse van Rensburg & Lotz Sisitka, 2000: 12).

Freire's principles of praxis (as outlined above) have influenced curriculum development in adult learning and the Gold Fields course in particular. This is discussed in more detail below.

2.4.3 How praxis plays out in curriculum development

Being part of the praxiological curriculum development process involves co-constructing curriculum within real but not hypothetical learning situations, the 'social praxis' referred to by Grundy (1987: 115). It also grounds the learning experiences in real issues in the environment emanating from the students' experiences, that the curriculum seeks to address, making learning meaningful and experiential.

Through curriculum as praxis, a dialogical relationship between the teacher and the learner and learner to

learner is established. Learning becomes a social act not simply a physical environment (*ibid*: 115). According to Grundy (*ibid*) praxis operates in the world of interaction, the socio-cultural world.

Applied to curriculum theory, praxis recognizes that through interaction, knowledge is a social construction (*ibid*). Through the act of learning, groups of students become participants in the construction of meaning. This requires students in the learning situation to engage in critical reflection upon their own knowledge, making a distinction between knowledge pertaining to the natural world and cultural forms of knowledge and how these relate to one another in the social setting. Importance is placed on recognizing that even those aspects of the natural world that are part of the curriculum present interpretations and representations of the natural world but not whole truths. Hence praxis elicits critique implicit in curriculum praxis (*ibid*).

Praxis also assumes a process of meaning-making, recognizing that meaning is a social construction. Meaning making is central to all knowledge creation (*ibid*: 116). So an engagement in forms of praxis would seem to require a critical orientation to all knowledge. Meaning making also involves deliberation on conflicting meanings. Janse van Rensburg (1993: 283, cited in Lotz, 1999: 30) asserts that:

A reflexive approach to EE [environmental education] engages with the social construction of meaning and the temporal and the historical nature of knowledge. It may be more difficult to teach about, but it also holds more potential than a conventional communications-oriented approach based on simplistic assumptions of rationality ... However, because a reflexive approach to EE [environmental education] entails the reconceptualisation of conventional wisdom, both academic and everyday, it also raises uncertainty among learners.

Also, a reflexive approach to meaning making makes the curriculum process a political endeavor, raising power relations' issues in context. Those who are in power in a learning situation are those who control the curriculum and they make sure that their meanings are considered worth transmitting (*ibid*). In the Swaziland context, for example, teachers and students have little opportunity to express their views and challenge dominant power relations and therefore have little control over the curriculum. In the case of Swaziland, the State and examiner are dominant and exert the necessary power to determine curriculum processes. Meanings made through education are those of the State and are intended to serve the interest of the State.

Praxiological meaning making involves the active participation of learners, which encourages active

engagement associated with learner-centred approaches, and the construction of new understanding (Janse van Rensburg & Lotz Sisitka, 2000). It is associated with the negotiation of curriculum, a democratic orientation to education. The negotiation of curriculum allows for shared meanings through dialogue among educators and learners from which participants can build on existing meanings and grow (Janse van Rensburg & Lotz Sisitka, 2000).

2.5 Praxis in the Gold Fields course

Praxis in the Gold Fields course and the Swaziland course is perceived as the process of action, reflection on process and evaluation of process (Lotz, 1999). The course is a participatory professional development course, and in the Swaziland context, the course provides opportunities for educators to engage in processes of praxis, or action and reflection on process and evaluation of environmental education processes. According to Janse van Rensburg and Le Roux (1998:106) the idea of praxis provides a useful framework for a theoretical description of professional development in the course (Usher *et al.*, 1997:14). It is a useful lens for looking at the various aspects of professional development arising from participation in the course (*ibid*).

The orientation of the Gold Fields course seems to be adapted from Freire's perspective as described by Grundy (1987:11), as action and reflection - a reciprocal relationship that enables reflexive action. Janse van Rensburg and Le Roux (1998: 104) describe praxis as 'mindful practice' and as an exploration of the 'how' of 'what' we do, involving critically questioning the way we do things. They further assert that the idea of critique and conscientisation are more pivotal to praxis than just linking theory to practice (*ibid*).

Praxis in the Gold Fields course is perceived as a response to technocratic or vocational orientation to professional development. The latter type of professional development is meant to provide learners with skills to pursue educational programmes that only serve the reproductive role of education. This notion concurs with Robottom's (1987: 292) recommendation that:

...environmental education for professional development in an information age requires a paradigm shift in the areas of professional development - a shift from a paradigm of 'information technology' to a paradigm of 'information critique'.

Robottom (*ibid*) further suggests that we adopt the approach of inquiring critically into the environmental and social values informing our actions rather than simply adopting and retaining information that is drawn from a 'stockpile of objective knowledge' collected by others. To cater for this approach the Gold Fields course has adopted the guiding principles of professional development programmes suggested by Robottom (*ibid*: 296 - 297; Janse van Rensburg & Le Roux 1998:107) that it should be enquiry-based, participatory and practice based, critical, community-based and collaborative. The next section discusses these principles of professional development as suggested by Robottom (1987).

2.5.1 Principles of professional development

Professional development in the Gold Fields course provides opportunities for learners to critically integrate theory and practice through processes of reflexive enquiry with a focus on context (see chapter four and five). Assignment development processes in the Gold Fields course seem to create space for these principles to be enacted:

2.5.1.1 Enquiry based

This principle holds that professional development activities in environmental education should encourage participants to adopt a research stance to their own environmental education practices in order to improve on their practices that they perceive to be problematic (*ibid*: 297). In assignment four of the Gold Fields course, participants are encouraged to keep a journal as a means of 'documenting' the research processes that they undertake. They are also encouraged to reflect critically on the processes that they undertake when developing the assignment.

2.5.1.2 Participatory

According to Robottom (*ibid*), professional development in environmental education should be participatory and practice-based. This is based on the understanding that environmental education practices are constrained by practitioners' theories and those of others within the institutional structures where they practice. Such constraints occur where there are gaps between what practitioners want to do and what they find themselves doing because of the expectations and structures of the institutions under which they practice. Robottom refers to this dimension of constraints as, 'false consciousness' (*ibid*: 297). Robottom further suggests that such gaps can be

bridged through participation in a process of working through the 'relationship between theory and practice and practice' (*ibid*). However, the meaning the concept 'participation' is *paradoxical* in environmental education practice (O'Donoghue, 1999). Contradictory qualities inherent in participation are associated with the way in which participation often becomes a moral imperative to empower or 'emancipate the other' (*ibid*: 11), which tends to 'play out' in a participatory education hegemony of socially engineered change by involving 'the other' in already planned expert driven activities, rather than working with others collaboratively in response to issues and risks as they arise in different contexts. O'Donoghue (*ibid*) attributes this to the influence of critical theory in environmental education, which became increasingly popular in the late 1980's and early 1990's. In the assignment four process, opportunities are created for participants to work together to clarify issues associated with their assignment work in tutorials through presenting their work to the rest of the group for discussion (see Chapter 4). Participants are further encouraged to work with others in their workplace context. Participatory processes are, however, structured and confined to a certain extent by the assignment brief.

2.5.1.3 Critical

Professional development in the paradigm of 'information critique' involves a "... critique of the environmental educational values and assumptions that inform existing environmental education practices, organizations and practice" (Robottom, 1987:297). It advocates for learners or practitioners coming to understand their field of practice through critical enquiry and development of own theories about environmental education. Assignment four encourages participants to develop a resource or programme of relevance to their work or context. This appears to assume a process of critical enquiry and development of own theories about environmental education.

2.5.1.4 Community based

According to Robottom (*ibid*) professional development in environmental education should be community based. This principle is based on the observation that environmental education problems are contextual and that solutions need to be contextualized. It observes that professional development is specific to time and place (*ibid*). The idea of being community based concurs with the notion that learning takes place in real not hypothetical world (Grundy, 1987:115). Assignment four requires participants to develop a resource or programme of relevance to their work or community context. This emphasizes the community-based intentions of the course.

2.5.1.5 Collaborative

Robottom (*ibid*) also asserts that professional development in environmental education is collaborative. Robottom identifies two major reasons for this principle, which I find relevant for my study. One being that the recognition of cases of false consciousness (due to institutional pressure) requires the assistance of colleagues working under similar conditions who will understand the circumstances or context. The second one being that educational matters are political in character (Palmer, 2001: 280 - 284) and hence require collective action rather than individual effort in the context of political struggles (Robottom, 1987: 297). As indicated above, participants are encouraged to work together in tutorials, and in their work place on their course assignments.

The Gold Fields Course draws from the above principles of professional development, developed from the idea of praxis (Janse van Rensburg & Le Roux, 1998: 106; Lotz, 1999) as well as from Freire's notion of praxis as articulated by Grundy (1987: 104 - 116). The above key features of praxis have influenced the development of the course, which can be seen in the way in which the assignments are structured, and in the assignment process.

2.5.2 Assignments as praxis

As indicated earlier, a key focus of the Gold Fields Course is the work-based assignments. Assignments play a major role in creating opportunities for praxiological professional development among learners through field research and practice, assignment writing, presentation and discussion. To carry out these activities participants engage within processes that require them to draw on their work experience and reflect in writing on their actions (Janse van Rensburg & Le Roux 1998: 31). Participants are also required to write more than one assignment draft. This writing and re-writing of assignments is noted for encouraging 'thinking and re-thinking practice' (Raven, 2000: 93). Tutors' comments on the assignment drafts are intended to stimulate further thinking about the practice of participants, rather than passing judgement of ideas as correct or incorrect (*ibid*: 78).

Assignment four processes support the development of praxis through the following instruction:

Assignment Four:

Part 1:

Develop and re develop an environmental education resource or programme [relevant to your work /context].

Part 2:

- a) Describe the programme or resource. Include the purpose or the aim of the programme/resource.
- b) Describe the development of the programme or resource. (Use a journal to keep record of the happenings during the development of the resource.)
- c) Justify why the programme or resource was developed in this way.
- d) How will the programme or resource be used?
- e) Comment on the four points above. How might you do it differently next time?

Part 3:

Present the programme or resource to your regional group and at the final national workshop (Lotz, 1999:32).

Through this assignment Lotz (*ibid*) notes that participants work through a praxiological process involving resource development and implementation in their respective work-places and/or community contexts. Such processes involve research on how and where to collect information and material resources to support resource development, and looking for possibilities to take the resource further into the field of work. She cites an example of Sheperd Urenje (from Zimbabwe) who implemented his resource in the 'real world' situation with the help of others through a collaborative process (*ibid*).

Part 2e of this assignment requires participants to critically review their work through reflection. Janse van Rensburg and Le Roux (1998:109) found that for some participants writing the course assignments seemed to contribute to praxiological development by critically discussing and investigating the work they are doing, which makes them really think and reflect on their work. They also cite Glenda Louw for valuing assignments for the opportunities they offer participants for reflection (*ibid*).

Raven (2000: 94) observed that assignment writing and assessment is a learning process, which enhances reflexive competence. However, she noted that various participants in the course do not understand this concept fully. She suggested that involvement of participants in the development of assessment criteria should be stressed to encourage deeper thinking about their practice and development of a better understanding of the theories informing their practice. This deeper thinking involves praxis (*ibid*).

2.6 Conclusion

In conclusion, the term praxis entails steering ideas that denote conscious practice, characterized by reflective thinking in action, in the process of meaning making in context. The critical perspective focuses on the broader social context of the social system and the school as its agent, and how the structures thereof may impinge on educational practice. Its aims are focused on enlightenment and empowerment through emancipation from various forms of domination.

Critical social theories suggest praxiological processes of social change involving reflexive thinking amongst social agents for the restructuring of social systems and actions. This theoretical perspective recommends making changes to individual consciousness to direct actions through reflection. The sociological perspective of praxis seems significant in educational discourse because it highlights the context in which educational practice takes place. It portrays factors that may constrain individual action in educational practice as arising from the power relations that exist and play out between socio-economic structures and schools as agents of those in control of the socio-economic system. It argues that schools are meant to reproduce the values of the system in which they exist while constraining the actions of individuals in the field of practice.

Drawing on critical social theories, Grundy (1987) suggests Freire's curriculum praxis for professional development in adult learning, which she also situates within constructivist perspectives, and outlines guiding principles for praxis. Through a review of the Gold Fields course orientation and research undertaken on this course, I have identified that these principles are reflected in the design and orientation of the Gold Fields and Swaziland courses. My study seeks to investigate the development of praxis and how it plays out in practice in formal education through assignment four development processes of the Swaziland course. To explore his phenomena further, I apply a naturalistic approach to case study research, through which I develop a detailed interpretative description of instances of praxis in assignment processes and implementation. The next chapter outlines my research design decisions, methodology and methods in more detail.

CHAPTER 3

METHODOLOGY AND RESEARCH TECHNIQUES

3.1 Introduction

This chapter discusses the research design decisions made in this study. This includes the methodological approaches and underlying assumptions of the study. It further describes the research process and methods employed in relation to the methodological assumptions. It also describes data management and analysis. Validity or trustworthiness issues and limitations of the study are discussed in relation to the methods and research process. To arrive at the research design decisions the purpose and context of the study have been taken into consideration guided by philosophical underpinnings of the approach.

3.2. Research design decisions

The research design decisions were influenced by my intention to study human actions in their natural setting, with the consideration of contextual influential factors in the field of study. It had to be a design that would allow for a research process that could study the different facets of praxiological processes in the context of the Swaziland course. This was to be done through observing practice to aid understanding of the interactive processes involved.

It also had to be a design that would facilitate a research process that would allow for coverage of the views and feelings of the course participants in their professional development endeavor.

3.3 Theoretical framework

The study is an interpretive case study. It employs a qualitative research approach which, according to Merriam (2001:15) is an umbrella concept covering a number of research approaches that aid understanding of social phenomena in their natural setting. Merriam (*ibid*) further asserts that qualitative research encompasses the following types of research: Naturalistic enquiry, interpretive research, field study, participant observation, inductive research, case study and ethnography. On the basis of this view, in

this case study interpretive and naturalistic inquiry is used interchangeably and is guided by qualitative research assumptions. Being interpretive, my study is influenced by social theories including symbolic interactionism and constructivism. Janse van Rensburg (2001: 18) asserts that interpretive methodologies belong to the symbolic sciences informed by social theories including symbolic interactionism, phenomenology and constructivism.

Symbolic interactionism is a theory that puts emphasis on meaning making among people through their interaction by means of symbols including language (Molose, 2000: 18; Le Compte *et al.*1992: 338). According to Blumer (1969, cited in LeCompte, 1992) symbolic interactionism is based on three principles, that: "Human beings act towards things on the basis of the meanings that the things have for them; this attribution of meanings to objects through symbols is a continuous process; and meaning attribution is a product of human interaction in human society". This meaning making process referred to as 'knowing' by Janse van Rensburg (2001: 8) occurs through social interaction. In the context of my study meaning making occurs both during the research process and during the assignment development processes. The constructivist approach to research focuses on the meaning that people make of reality and specifically, presenting the multiple meanings which participants or research subjects make of reality (*ibid*).

3.3.1 The interpretive research perspective and underlying assumptions

Underlying assumptions to the interpretive perspective include Cohen and Manion's (1994: 6 - 7) group of assumptions also propagated by such writers as Conole (1998: 17), concerning the nature of reality, epistemology and human nature.

My study was influenced by the assumption that the meaning we make of a situation differs depending on the setting in which actions take place. The interpretivist approach acknowledges that "There are multiple realities, which require multiple methods for understanding them" (*ibid*). Hence a study of the processes in their complexity was seen to be an ethical decision for understanding how the course supports the development of praxis through assignment four work.

It is also influenced by the belief that knowledge is a human construction. I subscribe to Stake's, (1995: 99) contention that most qualitative researchers believe that "... knowledge is constructed rather than discovered". This assumption has influenced my practice as a researcher during observation in data

gathering and my interpretation in data analysis.

My approach to the study was also influenced by the assumption that meanings are generated and shared through language and are negotiated during discussions in assignment development. This assumption made it necessary that I observe the interactions during these discussions. Phillips (1987); Carr and Kemmis (1986) and Morgan (1983) all subscribe to the view that "... meanings are generated and shared through language and other forms of symbolism and are negotiated" (Morgan, 1983: 14, cited in Carr and Kemmis, 1986).

From my view of praxis (as articulated in Chapter 2), it was important that I was able to observe participants' actions. Observing participants' actions was important at the programme implementation stage where their actions might have been influenced by the structures within the school settings that need to be considered in interpreting how praxis plays out in the field of work. According to Connoles (1998) in the interpretive perspective actions are not a product of external influences but are preceded by intentions and take place within a structure of social rules within which they have a meaning for both the actor and the observer.

It is also worth noting that my research is value bound because it is influenced by the values in the context of the course, especially its orientation that in turn has influenced the assignment process and its implementation. Borg and Gall (1989: 385) assert that values inherent in the context of the enquiry and the researcher's values influence the research. My involvement in the assignment processes as a former participant and course facilitator has influenced my value orientation and in turn, my choice of methodology in the research.

3.3.2 Case study research

The study has adopted the case study method. As noted earlier in Chapter 1, the study is a case study of praxis-based assignment work in the Swaziland course, with specific focus on assignment four. The case study method was employed to provide a detailed understanding of the case in question as a single event, to give a deeper insight into the assignment development work. According to Borg and Gall, (1989: 402) a case study involves "... an investigator who makes a detailed examination of a single subject or group or phenomenon". Yin (1994: 13) defines a case study in terms of the research process: "A case study is an empirical inquiry that investigates a contemporary phenomenon within its real life context, especially when

the boundaries between the phenomenon and context are not clearly evident". My study reflects Yin's definition by considering that action takes place in the real life situation where there are many intervening variables hence the need for multiple data sources (Bassey, 1999: 26 & 27). Merriam (2001: 19) asserts that a case study design is employed to gain an in-depth understanding of the phenomena studied, and points out that the focus is on the process rather than the outcome. He further contends that what makes it (case study) different from any other qualitative research method is intensive description and analysis of a single unit or system. For example, an individual, programme, event or group.

Being a qualitative case study, the research involves the use of the following techniques: tutorial observations, assignment analysis, field observations of instances where course participants were applying the assignment in the field, field notes and interviews (see section 3.5 below).

3.4 Research subjects

Research subjects involved course participants (with tutors inclusive) at tutorial sessions. From this group, two participants (Messiah and Philile) were selected for in-depth observations, and individual case studies or 'constructions' were developed focusing on these two participants (see section 4.3 and 4.4), given that I needed to research the entire assignment four process, including observations of assignment applications in workplace contexts. Initially three participants were selected for more in-depth observations, but due to the fact that one of these three participants (Nonhlanhla) was not able to complete the tasks assigned due to circumstantial constraints, and due to the fact that observations of the other two were consuming much time, I decided to focus on only two participants for this case study. The research subjects chosen for closer observations could be referred to as a 'purposeful' sample (Merriam, 2001: 61) and therefore only 'information rich cases' were selected to provide in-depth insight into the situation (Patton, 1990 cited in Merriam, 2001). In this case I selected teachers working in schools (the course has participants other than teachers). Messiah is a Natural Science and Agricultural Science teacher, and he was working on materials and lessons on industrial pollution. Philile, the second teacher, was involved in the development of an HIV/AIDS awareness club for the youth.

During course sessions I observed course participants and tutors at work with a view to observing the assignment development processes. The purpose of these observations was to identify how assignment development tutorials influence the development of praxis. As indicated above, two teachers participating in

the course were considered for observation at implementation level (where they were applying their assignment at schools) as they were practicing teachers that were seen to have the opportunity to implement their programmes. With these observations I hoped to identify how praxis plays out in the field. These participants were interviewed after the class observations were done. In describing the course processes, I chose to focus on the interactions surrounding one course participant (Mdluli), as a means of illustrating the interactions in more detail (see section 4.2).

Two tutors (Nyembe and Dlamini) were interviewed to describe how the assignment orientation and development processes support the development of praxis.

3.5 Research techniques

Huysamen (1994: 168) asserts that participant observation and unstructured interviews are usually used for studying a chosen case. Cohen and Manion (1994: 7) also observed that researchers, who believe that the social world is a 'humanly-created' world, would select from a range of recent and emerging techniques like participant observation, personal constructs and accounts.

I conducted participant observation during course tutorial sessions and field observation at the schools of the two participants that I selected to study as individual cases. Unstructured interviews were also conducted with the two teachers at their schools to investigate instances of praxis that they might have observed from the assignment development process as participants in the course and how they might have benefited from such processes. Two tutors were interviewed to further probe the data obtained from observation. Assignments from the three participants were analyzed to further establish instances of praxis.

3.5.1 Participant observation

Participant observation requires that for an extensive period of time, the researcher takes time in and reports on the daily experiences of the members of a group, community or organization, or the persons involved in the process or event... (Huysamen, 1994: 169).

This allows for an insider's perspective of the case as opposed to the detached outsider perspective. This notion is based on the view that post-positivist researchers claim that, " ...all human knowledge is fundamentally influenced by the subjective character of the human beings who collect and interpret it" (Adler

& Adler, 1987: 31, cited in Smith, 2002: no page numbers). Smith further asserts that participant observation is 'thoroughly grounded in human subjectivity (*ibid*).

As indicated above, I conducted participant observation during tutorial sessions for assignment four development processes. During these observations I took field notes and tape-recorded the interactions. Merriam (2001: 104) notes, "What is written down or mechanically recorded from a period of observation become raw data from which the study's findings emerge".

I found, however, that the processes of participant observation are not as easy as they sound. I found it difficult to capture continuous written recordings. Shortcomings of note taking during participant observation resulted from the fact that, at times I was involved facilitating aspects of the course in my role as course tutor and could not record at all. Had I (at the time) explored literature on participant observation thoroughly I would have requested someone else to take the notes for me. However, I depended on tape recordings to counteract the problem, though this also had its own problems. Although the tape transcripts provided a lot more detail, even on what I had not managed to record in my notes, it also had obstruction problems. This was more evident when the person that was speaking was a distance away from the tape. However, using both the tape and note taking complemented each other and helped to capture the necessary interactions I wanted to observe in the tutorial sessions.

3.5.2 Field observation

Field observation involved observing and recording learning processes during the lesson (in Messiah's case) and during a club session (in Philile's case). I observed these two research subjects (Philile and Messiah) implementing their programmes at their schools (see section 4.3 and 4.4). As indicated above I also intended observing a third participant's (Nonhlanhla) programme implementation but it was not implemented as she had planned for in her assignment presentation. Messiah conducted a formal lesson with his grade seven class. Philile facilitated a discussion by the Anti AIDS Club at her school.

Field observation involved taking down notes on the lesson processes and tape recording. During Messiah's class I took notes on his lecture presentation and on the summary of notes that he wrote on the board for the students as well as activities carried out by the students. I also collected written notes compiled by the pupils during their discussions in my research journal (see appendix 11). Verbal interaction

during the lesson was tape-recorded and transcribed and I produced a lesson observation transcript, and I drew on this data in compiling Messiah's construction (see section 4.3).

Philile conducted a group discussion session. During the discussion I took notes on the issues discussed and also tape-recorded the interactions. Contents of the tape were transcribed and I produced a lesson observation transcript and drew on this in compiling Philile's construction (see section 4.4). Field observations were followed up with interviews to deepen the data that I had collected through the observations.

3.5.3 Interviews

Based on the assumption that there are multiple realities, interviews were undertaken with tutors and the two case study participants to obtain their descriptions and interpretations (Stake, 1995: 64) of the case. Informal interviews were conducted with the three participants at their schools. The purpose of the informal interview was to probe contextual issues associated with the application of praxis in implementing their programmes at the schools. The interview was tape recorded and transcribed in each case (see appendix 09).

Two tutors were also interviewed to establish how the assignment orientation and discussions influence praxis in the course. A semi-structured interview was conducted with each tutor. Short questions were prepared and handed to each tutor before the interview to probe either a short description or explanation of praxis associated with assignment four (see appendix 09). Tutor interviews were tape recorded and transcribed. Interview transcripts were submitted to the respondents to confirm accuracy of details.

3.5.4 Document analysis

Document analysis involved analyzing assignment four and the pre-course assignments of the two participants involved in the research. The assignments were not necessarily researcher-generated documents but were generated as part of the course requirements. But according to Merriam's definition of researcher generated documents, however, they could fit in this category because they were constructed as part of the research process as participants were aware that the assignments would be used within the research processes. Researcher generated documents are documents prepared by the researcher or for the researcher by participants after the research has begun, for the researcher to learn more about the

situation, or person or event being investigated (Merriam, 2001:119).

Assignments written by the two researched participants (see appendix 03) were analyzed by first including the details under each participants construct (see sections 4.3 and 4.4) as a way of reflecting their experience on the course and were subjected to further analysis in relation to the principles of praxis, as outlined in Chapter 5.

3.5.5 Keeping a research journal

I also kept a research journal, where I recorded all events relating to the research process. I preferred writing my observation notes (tutorial and field observation notes) as journal entries and I found it convenient for reflecting on as the research proceeded. Not all entries in the journal were analyzed, only those that were also tape recorded clearly. This provided detail on the tutorials or observation sessions and was then used in triangulations with other data to develop the constructions, and the interpretations on praxis (as outlined in Chapters 4 and 5).

3.6 Data management and analysis

To probe the research question in some depth, I undertook two 'layers' of data analysis. In the first layer of analysis I developed constructions drawing on multiple data sources (see sections 4.3. and 4. 4) as adapted from Raven (2003) for each one of the two participants. This involved describing their life history in the course and their experiences in assignment four development processes and implementation, using thick description. I also developed a profile of the assignment development process in general (see section 4.2), but not specific to any participants. One participant's (Mdluli's) assignment presentation was used to describe the process of assignment presentations during course processes in more detail, using thick description. It was selected for illustrating tutor-participant and participant-participant interaction. The course processes profile (see section 4.2) and the constructs (see section 4.3 and 4.4) drew on data collected from interviews, observing course development processes during the course orientation, assignment presentations and discussions, assignment writing and the discussion of readings as well as observing assignment application at the participants' field of practice (at the schools). The purpose of these processes was to investigate how the assignment processes reflect praxiological processes and how these play out in practice. The challenge with this layer of analysis was to carefully transfer the interaction events from the

transcripts, field notes and assignments without losing details, nor altering the meanings, by sticking closely to what was said.

The second layer of analysis involved developing analytic memos, based on analytical statements (see Bassey, 1999) derived from further analysis of the course processes profile (see section 4.2) and the individual participants' constructs (see sections 4.3 and 4.4). I generated analytical statements by summarizing the data in relation to the principles of praxis (see section 2.4.2) namely: action and reflection, learning based on real life issues in context and social construction of meaning, within the assignment development and implementation processes. Analytical statements are meaningful statements derived from condensed data based on the raw data (Bassey, 1999).

In this way, I hoped to further probe the praxiological nature of the assignment process, and how praxis was playing out in practice. The first layer of analytic statements, that is draft analytical statements, gave me tentative answers to the research question. Bassey (1999:70) refers to these as 'tentative hypotheses'. Analytic statements on aspect of praxis provided a framework for Chapter 5 (see appendix 04).

I generated the refined analytical statements by further reading and re-reading of the raw data, and by reflecting on the draft analytical statements, and this enabled me to provide more accurate statements on participants' experiences of assignment processes (see appendix 05). The development of these analytical statements provided a framework for a deepening of my understanding of the research question (see sections 5.1; 5.2 and 5.3).

3.7 Validity and trustworthiness

Historically validity is associated with experimental research where researchers conduct experiments and tests to establish the trustworthiness of inferences made from results from measurable phenomena and controlled experiments (Le Compte, *et al.*, 1992). However, (Phillips, 1987: 21; Brinberg and McGrath, 1985: 13 cited in Maxwell, 1992) share the same sentiment when they point out that there are no procedures or methods that will always yield either sound data or true conclusions (Maxwell, 1992). Brinberg and McGrath (1985: 13) note that "... validity is not a commodity that can be purchased with techniques ...". Rather, validity is like integrity, character and quality, to be assessed relative to purposes and circumstances" (cited in Maxwell, 1992: 280 - 281). In other words validity refers to trustworthiness of

findings in relation to context, rather than methodological approach.

Trustworthiness in this research is established through triangulation, and through this process I was able to provide a thick description of the events that occurred. My study is influenced by constructivist assumptions and it employs multiple methods to allow for presenting the multiple perspectives of participants, tutors and the researcher, of their experiences of the assignment processes. Cohen and Manion (1994) describe triangulation as the use of two or more methods of data collection in studying an aspect of human behavior. I triangulated data from observation, interviews conducted with two tutors and participants on assignment processes as well as analysis of assignments to confirm the 'authenticity' of the findings (Janse van Rensburg, 2001: 8). Shipman (1981: 147, cited in Borg & Gall, 1989: 393) suggests triangulation of several methods to study 'confused reality' which is complex to study in its entirety. He claims that triangulation is a form of replication that contributes greatly to our confidence in the findings irrespective of approaches adopted in the study.

Interpretation is also important for the trustworthiness of findings. While in the positivist approach there is a limit to the role of personal interpretations during the course of the research, qualitative designs call for the persons most responsible for the interpretations to be in the field, making observations, exercising subjective judgments, analyzing and synthesizing, while realizing their consciousness (Stake, 1995:41). Stake (*ibid*) emphasizes consciousness in making meaning processes in research, which Lather (1986) describes as processes of self-reflexivity in research.

Borg and Gall (1989: 392) recommends participant observation for 'effective' group interaction. As a co-participant in the course I enjoyed that broad access which Borg and Gall (*ibid*) recommends for avoiding bias and disruption to the normal flow of events. As tutor on the course, my participation in the tutorials was always expected, and was seen to be 'normal', therefore my participation in the settings did not influence the workshop proceedings in any way. I consciously reflected on my role as researcher in the context in my research journal.

However, my role as a co-participant changed when it came to observing at the schools. In this context, I became an 'outsider' observer and I needed to make appointments to ensure that the particular lesson would be taking place as planned with a group of learners. This difference in my role may be attributed to the fact that structures at the schools are different from tutorial workshops where I did not only attend as a

researcher but also as a facilitator. This change in my role influenced what was to be taught at the schools (as I was coming to observe something specifically pre-planned). This may have resulted in bias in terms of what was taught. However, my aim was to observe interactions between the teacher and students, student and students, and interview the teacher in that context. To further enhance trustworthiness in that context, I consciously reflected on my role as researcher in this context in my research journal.

Lather (1986: 270) recommends that "... the techniques of triangulation, reflexivity, and member checks" should be used for assessing trustworthiness in new paradigm research. These techniques have been used in my study to establish data trustworthiness. Transcripts and the first drafts of constructs were sent to the two research participants to read, make comments and corrections as well as sign for approval of the content. Interview constructs were also sent to the interviewees for reading and commenting. A few corrections were made but generally the research participants approved the text as a correct record. Member checking involves sending transcripts and constructs to research subjects to check and confirm the accuracy of the data (Lather, 1986). It was therefore, an important measure applied in this research to ensure trustworthiness. A validity threat associated with this technique, however, is the possibility of encountering 'false consciousness' on the part of the research subjects. That would involve research subjects identifying with 'ideologies, which do not serve their best interests' (*ibid*: 271). In my case it could be that participants may have been reluctant to deny what I had already recorded or to go against my interpretation because they wanted to identify with my beliefs as their tutor (to impress). However, I tried to emphasize the importance of data accuracy and honesty in this research in my interactions with the participants.

Reflexive review of the different data gathering techniques, and comparison of data generated by these different techniques, helped me to ensure the trustworthiness of the findings.

Trustworthiness in this study was mainly determined by triangulation through the use of many techniques, and by careful comparison of the data generated through these different sources and through providing a thick description of the events that occurred. Compiling the constructs assisted me with triangulating the data in the first layer of analysis; and a comparison of perspectives provided in the course process profiles and the two constructs assisted with triangulation in the second layer of analysis.

Trustworthiness in this research was therefore ensured by a combination of member checking, triangulation

and self-reflexivity (or consciousness of my role in this research).

3.8 Ethical considerations

I intended conducting research that takes respect for truth, respect for democracy and respect for persons into consideration (Bassey, 1999). These ethics are closely associated with each other and are associated with the responsibility of the researcher.

The ethic of democracy offers freedom to investigate, solicit information and publish it as a researcher. However, these ethics are subject to responsibilities imposed by the ethics of respect for truth and respect for persons (*ibid*: 74). Respect for truth has to do with the validity or trustworthiness of information in the whole research endeavor, including data collection instruments, the processes of data collection, analysis and reporting (*ibid*). These ethics have been catered for in the research through the methods used and triangulation as well as member checking described in section 3.7 above.

Respect for persons has been considered in terms of recognizing the persons right to privacy and ownership of the data to be used. This ethic has been accommodated in this research through formally inviting the participants being researched by means of writing letters before embarking on the research and negotiating access at the schools. I also asked participants to 'sign off' on the findings, to ensure that they were happy with my interpretations of their experiences in the assignment process.

Negotiating access for observing at workshop sessions was easy because I was taking part in the sessions as a tutor. Hence, the recording was taken as part of the workshop activities. However, I explained that the research was meant to improve the course processes for future benefit. This explanation was meant to make participants feel part of the research and enjoy recognition as participants in the research. At the time, participants did not object to this research taking place, and were willing to participate in the study.

3.9 Conclusion

The study employs a qualitative approach, which seeks to investigate phenomena in its natural setting (Merriam, 2001:15). To be able to explore the situation in greater depth the case study method was used to generate data for a detailed description of the assignment processes in relation to praxis, through

observation, interviews and document analysis.

The choice of methods and design is based on the assumption that multiple realities exist. A constructivist approach to meaning making has therefore been employed in which I considered the views of participants, tutors and my own perspectives. The choice of design has been influenced by the values I developed from the course, as a former participant and a tutor.

Validity and trustworthiness of the research findings is inherent in the data collection methods and analysis (Lather, 1986: 270). Data collection was mainly centered on observing assignment development processes during tutorial sessions, in the real or normal setting typical of workshop sessions. Being part of the group as tutor allowed for participant observation in this situation and for tape recording parts of the tutorial sessions. Normally people are sensitive to being recorded but in this case it did not affect the normal interactions. This was because recording of tutorial sessions started from assignment three of the course and participants got used to it before the assignment four recordings were started. Although the recording was not clear in some cases, I still managed to transcribe and analyze those sessions that reflected enough interaction to identify instances of praxis in the assignment development processes.

The study employed two 'layers of analysis'. The first layer established a profile of course processes associated with the assignment development work and also established 'constructs' of two course participant's experiences in the course. The second layer of analysis centred on the development of analytic statements, which deepened the insight and perspectives on the praxiological orientation to the assignments, and how this orientation plays out in practice. Measures to ensure trustworthiness in this study included self-reflexivity; member checking and triangulation; and ethical considerations were attended to.

The next chapter describes the first layer of data analysis; and presents a) a profile of the course processes associated with assignment four development and b) two constructs describing the assignment development experiences of two course participants.

CHAPTER 4

EXPERIENCES OF PRAXIS BASED ASSIGNMENT WORK

4.1 Introduction

Praxis in the Gold Fields course is perceived as the process of action, reflection on process and evaluation of process (see section 2.5). It provides the theoretical framework underpinning the course orientation. Praxis in the context of the course appears to be defined according to Freire's notion of praxis as described by Grundy (1987:11). It is considered as 'mindful practice' pivotal to which are the ideas of critique and conscientisation (see section 2.5). Lotz (1999: 30) asserts that "... praxis implies a conscious recognition of the relationship between practice and its rationale (s) - the why, what and how of our work".

This chapter discusses opportunities for praxis provided by the Gold Fields course through assignment processes. Praxis opportunities in the course are made possible through learning with a focus on real life issues, planning, and interaction. Praxiological learning opportunities in the course are facilitated during tutorial workshops through assignment orientation discussions, assignment presentations and assessment of the assignment work. These learning opportunities are described in a course processes profile (in section 4.2).

This chapter further presents two constructs describing course participants' experiences of the praxis-based assignment work and how these experiences are implemented in their field of work (teaching) (in sections 4.3 and 4.4).

4.2 Praxiological learning in tutorials: A course processes profile

Tutorial workshops in the Gold Fields course are associated with the construction and transformation of knowledge through the use of dialogue in the "... negotiating of shared meaning ..." (Leach 1996: 105, cited in Janse van Rensburg & Le Roux, 1998: 108). This is where participants have an opportunity to get together and be involved in discussions on critical issues raised on their work, especially the research assignments based on real environmental issues. According to Janse van Rensburg and Le Roux (*ibid.*

109) regional tutorials "... play a vital role in encouraging development through praxis". Praxiological professional development processes in the Gold Fields course are reflected in the assignment orientation, discussion of readings, presentation and discussion of assignments, assignment writing and assessment. Each of these will be discussed in detail below:

4.2.1 Orientation to assignment four

Before participants start working on assignment four they are oriented to the assignment work. According to course tutor and previous course co-ordinator Nyembe (pers. comm., 25/10/03) assignment orientation is necessary because it is where the tutor and participants come to an understanding of what is required of the assignment. Nyembe (*ibid*) refers to assignment orientation as "... drawing the mind map with the participants ..." (*ibid*).

Dlamini, another course co-ordinator and tutor (pers. comm., 30/10/03) stated that assignment orientation "... puts everybody into perspective". He further explained that this is necessary because people perceive things differently and the orientation seeks to put them into focus as to what the requirements are, and what is expected of them. He, however, acknowledges that people differ in their assignment writing but he insists on that the orientation is meant to put them into perspective, to show what is required of them (*ibid*). Nyembe (*ibid*) further contends that the assignment orientation also clarifies a lot of uncertainties relating to the requirement of the assignment.

Assignment four orientation in the Swaziland course involves exposing the participants to changing approaches to environmental education resource and programmes development highlighted in the core text for Theme four of the course (Swaziland course file, 2002: 10 - 14). This involves approaches such as the Research Develop Disseminate and Adapt (RDDA) approach; action research process to engineer change and action research processes that are critical social processes (*ibid*). During this study this orientation was provided through a lecture by tutor Elvis Gule. He used a diagram outlining the characteristics of each one of the above approaches (journal pg. 2). These approaches were described with reference to examples of educational programmes in the country, for example, the work of the National Curriculum Center (NCC), whose approaches to curriculum and materials development he associated with the RDDA approach.

The assignment orientation also involved introducing the participants to a reflexive journal. According to the

requirement of the assignment each participant is expected to keep a journal of the research process. During an interview Dlamini (pers. comm., 30/10/03) stated that the journal shows how the resource was developed. During the orientation to the assignment, one of the tutors conducted a lecture explaining what to include in the journal entries. She described that participants could include a description of the process followed, activities conducted, examples of other resources used; reporting of ideas from consultation; recording dates of activities; and any evaluation processes used.

4.2.2 Discussion of readings

Readings in the course are used to orient participants to the praxiological assignment processes. Participants benefit from the readings in terms of ideas to reflect on during discussions and assignment writing. They are assigned to do reading in groups and they present the content of the reading to share the ideas in that particular reading with each other: (observations: 9/11/2002; journal pg 2 & 6). A selected set of readings is provided with the file and the readings are discussed in relation to the assignment instructions.

In the 2002 Swaziland course, the first workshop on theme four involved discussing a reading related to resource material development and orientation to resource and curriculum development. The title of the reading was: *'Participatory materials development in Zambia: The workshop that worked'* (Lupele, 2000). Participants had been assigned to read the article before the workshop discussion. They were therefore able to make contributions to the discussion and mediators (tutors) would intervene by summarizing major points. For example, Sebenzile (tutor) made two points. One on developing material by drawing from participants' knowledge and the other was emphasizing needs-based material development (journal, pg 2). It seemed participants benefited from Lupele's (2000) ideas on materials development. One participant mentioned that he had used the article in developing his assignment four. I commented that this indicated the importance of readings in the course processes especially in developing resource material (journal, pg 2).

In another workshop a reading entitled *'Growing and Learning'* (Sisitka, 2000) was 'unpacked' through a discussion. As participants discussed the process and outcomes, benefits and sustainability of the project in the reading, facilitators kept referring to the way participants are developing their assignment four (journal, pg. 6). By focusing on someone else's, experience (as reported in the paper), participants were able to

explore what is possible in the context of their own assignments, making it possible for them to identify problems and possibilities in their own work context. For example, from the reading on '*Growing and Learning*' (*ibid*) discussed in the session, I noted that participants seemed to realize the strengths of the participatory approach (involving the people in planning the activities) for the development of ownership, commitment and needs focus (journal, pg. 6).

4.2.3 Core texts

I observed that tutors depend heavily on the core text for their preparation for orientation to the assignment. The ideas shared at the orientation lecture for assignment four appear in the core text for Theme Four (Swaziland course file, 2002: 10 - 13). A tutor, Dlamini (pers. comm., 30/10/03) observed that course participants also rely on the core text for information on environmental learning in the course due to a shortage of learning resources. He feels that most of the information is derived from the core texts due to lack of library facilities resulting in participants presenting the same ideas on environmental education.

I observed that core texts provide a guide to praxis-based learning. For example, tutors use the ideas in the core texts to orient participants to approaches they reflect on as they do the assignment. The lack of reading materials restricts the scope of ideas to be presented by participants for sharing and critical deliberation during the discussions. More readings would help participants clarify their thinking on the ideas they gather from core texts and they would then be in a better position when applying the course learning.

4.2.4 Assignment presentation and discussion

Assignment presentations and discussions offer an opportunity for participants to reflect on their work and on contextual factors influencing it. This is where participants express their understanding through writing and talking, what O'Donoghue (pers. comm., cited in Janse van Rensburg & Le Roux 1998:109) refers to as "being able to profess" which involves a mixture of doing, understanding and articulating this. The presentation and discussion of assignments in the Swaziland course seemed to be an opportunity for interaction between participant and participants, and tutors and participants, leading to reflection on participants' practice in the social context, as well as on the assignment instruction and ideas presented in the course in justifying their actions. This is when participants present their assignment ideas, research process and justification of the approaches they have adopted. When one participant has presented her

work her colleagues probe her work further by asking her questions or requesting her to explain (journal, pg. 6). This process helps participants understand their work better and also aids learning by improving the way they express ideas, relating them to their practice. When asked if this process is helping them in their work, one participant indicated that it is helping her as she develops her resource (journal, pg. 7). However, another participant claimed that it is confusing him and he was requested to try and identify what was confusing him specifically. This indicates the critical thinking that participants get involved with during assignment presentation and discussion. My reflective comment on that particular tutorial was that participants appeared to be more eager to contribute to discussions than before. I also observed that the level of understanding of assignment processes had increased, and participants had become more critical in their contributions (journal, pg. 8).

4.2.4.1 Tutor perspectives on the assignment process

When interviewed on the purpose of assignments Nyembe (pers. comm., 25/10/03) stated that assignments are a way in which participants can show evidence that they have learnt, and that they have actually understood the key concepts. He pointed out that the important thing is that they also show that learning has made them grow as people in the understanding of their own context.

In response to the same question Dlamini said "... the main purpose of assignments in the course is actually to assist participants grow professionally, so that they will be able to apply whatever they have learnt in the course in their areas of work" (pers. comm., 30/10/03).

Commenting on the assignment four Nyembe (*ibid*) pointed out that it is a very important assignment and it is an appropriate place to conclude the learning process. He commented that it actually provides an opportunity for participants to engage in self-assessment in the sense that if they can produce something on the assignment, then they will be confident that they can respond to assignment four adequately. It means that they have understood the key concepts and they have developed the competency intended in the course. It is that point where the participant can say 'I have done this'. He also stated that the assignment provides evidence for every one to see that the participant has developed the required competencies relevant to his or her work (journal, pg. 24).

Nyembe (*ibid*) was also asked to describe the key features of the assignment four-development process. In

response, he stated that assignment four involves curriculum development and / or programme development in the context of the participant's work (*ibid*). He mentioned that it is where the participant puts together the concepts, insights and ideas that have been expressed, developed or formed throughout the course. He contends, "... it's a deeper show of the evidence that people have understood the key concepts" (*ibid*).

Nyembe (*ibid*) was also asked how the assignment four processes are enriching learning, and he responded by stating that assignment four provides participants with an opportunity to reflect more deeply on the concepts, looking at how these concepts are emancipating in the context of their jobs, lives, engagement with social forces and other things. He pointed out that assignment four requires reflection and in that reflection, a deeper understanding and growth actually takes place (*ibid*).

When asked if praxis was one of the concepts he was referring to, he went on to explain that assignment four is not individual work, but it involves research, dialogue and interrogation with others especially within the context of the participants' work. It also involves reading additional readings in order to do well. He added that assignment four is a type of spiral growth that involves reflection accompanied with change and redevelopment of ideas (*ibid*).

When asked what participants reflect on in the assignment he stated that they reflect on the ideas that they have learnt on the course in relation to their realities. Also, how the concepts they have learnt improve their realities by enabling them to do their jobs better, and assisting them have a clearer understanding of a certain problem that they are dealing with.

Dlamini (pers. comm., 30/10/03) was also asked how the assignment four processes are enriching learning. His response was that in the process of resource development, participants are engaged in a process of research (*ibid*). Through this process it is believed that they are interacting with people and in that process they are learning something from the people they are working with, to come up with a report.

From the above interview responses one may conclude that, according to the tutors, the praxis based processes in assignment four development enriches learning by basing it on real issues in context and allowing for dialogue and reflection on contextual factors and theoretical ideas gained from reading. This appears to be an important process that leads to change in professional development.

4.2.4.2 A course participant's experience of the assignment development process

In this section, I have used the experience of one of course participant (Mdluli) to illustrate the interactive processes participants are exposed to during the development of assignment four. Through this case, the processes of assignment presentation and discussion involving participant-tutor and participant-participant interaction are highlighted. In this case Mdluli, an environmental education officer for Swaziland Komati Project Enterprise (SKPE) presented his programme at the workshop of the 30th November 2002.

In his presentation Mdluli narrated that they (colleagues at his work context) are developing an awareness programme for schools in the Komati Downstream project area. He mentioned that it is an awareness programme that does not focus on one issue but on a number of environmental issues affecting the agricultural community involved in sugar cane production along the Komati Downstream project area (workshop transcript, pg. 1). He established the context of his programme by stating that there are a number of issues relating to the impact of development on the environment, so they cannot debate just one impact. He sights this situation as justification of the aim of his program as just an awareness programme. He further mentioned that the awareness programme is meant to enhance children's understanding of mitigation measures needed for the development programmes. He sees that as important 'future' insight for children, to avoid such issues in future (*ibid*).

He stated the objective of the programme as "Making the people understand the concept environment and the importance of the environment" (workshop transcript, pg. 1). The first topic in the programme would therefore look at the different aspects of environment including the social, political, economic and biophysical aspects. He indicated that this would be a response to the problem of people not considering the social and political aspects of the environment (*ibid*). He suggested that the methods to be used within the programme would be those that foster the development of awareness. They would involve discussion and questioning. He also suggested the following:

Outcomes: learners must have information in the form of what they understand as environment.

Resources: chalkboard, flip charts and posters.

Evaluation: That evaluation would be in the form of a questionnaire asking questions leading to understanding what environment is.

(workshop transcript, pg. 1).

He indicated that the next topic would focus on development. This topic would be meant to address issues of people thinking that development means economic growth yet it also means the social aspect. He pointed out that development cannot be measured in terms of having a lot of money only, and that one should also consider social life and health as indicators of development. He highlighted the aim of the topic as, "To understand the concept of development" (workshop transcript, pg. 2). He further stated that activities would include discussion and classroom lecture. Resources would include the chalkboard and flipchart, and outcomes would be that students have information on development. He stated that the programme would be evaluated (*ibid*, pg. 2).

He continued his presentation by outlining the next topic of his proposed programme as being: 'Development versus environment'. Mdluli pointed out that the aim of this topic was for learners to understand that for development to be possible, environment should be considered, and that development impacts on the environment. He argued that the concept of environment in the Komati area is important because in the proposed development people would be cutting trees and using water, hence it is important that people understand the relationship between environment and development projects. Methods for this topic would involve lecture and discussion as well as field observation to observe the activities in the sugar cane producing area, for example, cutting trees, ploughing and others (*ibid*, pg. 2).

Mdluli also described the development process of the programme. He stated that programme development was very participatory. The local community was consulted and they made their contributions. He pointed out that the programme development process had limitations that he associated with the participatory approach. He observed that local community members were reluctant to be included in the already proposed programme but were comfortable with the notion that the educators who were coming up with the programme were learned, and that did not call for them (the local community) to be included in the programme planning. He observed that the local community members were comfortable with the resource materials brought by the SKPE officers. He contends that the reason why they used both methods was to encourage local community members to contribute towards the programme. He also observed that children need motivation because environmental education is not an examinable subject in the school system, and he indicated that they show them videos for motivation (*ibid*).

Following the presentation participants and tutors asked Mdluli questions. One participant asked Mdluli what

programme it was that he was presenting. In response Mdluli pointed out that it was a schools programme. Another participant wanted to know if the programme was for school children or for the community. The presenter stated that it was for school children (*ibid*).

The tutor asked why he was actually concerned about school children when he was working for a community project. In response the presenter stated that if the project or its mitigation would involve the parents/community members only, the children would not be aware of some of the issues. He felt that the understanding of the project and the environmental aspect by the whole community was important because if the children were not in the picture, they would 'counteract' any activity relating to the project. He pointed out that children are part of the community (*ibid*, pg. 3).

The tutor added that the school is the community. She pointed out that those children we teach at the schools are within the community. She further commented that SKPE's approach is interesting because they are showing that they understand what they mean by sustainability of the Komati River Project. She further highlighted that everything SKPE is doing there will be passed on from generation to generation for the project to be sustainable and commended SKPE for considering the school as an important part of the community. She went on to emphasize issues of context, and noted that what might be relevant for SKPE might not be relevant in another context. She advised participants to be confident in whatever they do as long as it is relevant to their context (*ibid*, pg. 3).

Another participant wanted to know if there were any teaching and learning resource materials at the schools where the programme would be implemented. The tutor acknowledged the question as being a good question because in order for any programme to be implemented resource materials are necessary. She further suggested that if the resource materials were not available it would mean that Mdluli would have another assignment after the course, to produce resource material for their learning programme (workshop transcript, pg. 3).

Another participant raised a concern about participants being afforded support for doing their job better using the ideas; programme and resource materials they learnt to produce through the course as this was an important issue to consider for assuring continuity (workshop transcript, pg. 4; journal, pg. 8). In response the tutor indicated that this was an important comment because it touches on issues of continuity. She pointed out that the course tutors are not intending to make participants do certain projects or

programmes after the course, because they have done the course. She stated that the course is structured in a way that once a participant goes through it, she may find herself wanting to continue because of an interest in implement what has been done in the course. She noted that the thinking in the course also tends to stimulate ongoing thinking about these issues, given that the course is aimed at preparing participants for doing something out there (in real life contexts). She mentioned that when the course is over, it often feels as if it is not finished, as participants tend to want to see the programme they have developed work and enjoy its success, and also identify its failures leading to producing a better one in the future. She associated that with the reasons why the assignment is work-based, since if it is work-based one can use it somewhere. She gave an example of her assignment four resource, which she said she found herself using when she taught the topic in class. She also pointed out that she could evaluate her resource by asking students how the resource was helpful to them in dealing with the topic and recommended writing the students' comments down in order to improve on the resource. (workshop transcript, pg. 4).

The tutor also suggested that participants may encourage other officers in their work areas or in similar institutions, to use their resources where they are relevant in case one changes jobs and is not able to use the resource or programme. She gave an example of Mdluli's (SKPE) programme and suggested that it could be used in the schools and its application should be followed up, with the process recorded to identify contextual influences at different schools (*ibid*).

4.2.4.3 Reflection on the tutorial

In reflecting on this tutorial, I observed that participants appeared more eager to make contributions towards discussions than before. This appeared to be related to the 'real life' examples of practice that were being discussed. The level of understanding of assignment processes had also increased and participants had become more critical in their contributions (journal, pg. 4).

Participants also invited contributions from the group during presentations. For example, one participant - Kayise said "*ngifakele Mzala*" [make a contribution to my work cousin] to Jethro (another participant) when she invited suggestions on how her resource could be disseminated through the media. In response, the other participants started suggesting the following: short story, advertisement and so on. Kayise showed appreciation by thanking the group (*ibid*, pg. 5).

My journal reflection on this level of interaction in the tutorials was that assignment discussion appears to be a very constructive process within the broader assignment development process. I observed that assignment discussion fosters participation and co-construction of meaning by participants and tutors as they discuss and interrogate aspects of each other's assignment work. Discussions were mainly centred on the resource or programme being developed in relation to its aims, making it quite contextual (journal, pg. 9).

I also observed that the assignment discussion fostered the development of mediation skills among participants. For example, these discussions were useful in helping me to identify individuals that could serve as tutors in future courses. They seemed to have a good understanding of the course orientation and the processes associated with the assignment and a good command of the subject. Other participants depended on them for contributions towards the development of their assignment programmes or material resources (journal, pg. 9).

At one point in the tutorial, a discussion on participation ensued. This discussion provides further insight into the deliberative nature of assignment discussions. The discussion raised the issue of ambivalence in the perception of participation, when some participants indicated that they were expecting their colleagues to adopt the participatory approach when developing or researching their programmes because the course in which they had learnt from is participatory (journal, pg. 9). One participant asked if it was compulsory, that is, if it was expected by tutors. The answer was no. One participant indicated that he was getting confused because they were advised earlier on in the course to involve concerned parties through participation. The argument on participation went on to indicate that forcing people to adopt participatory processes would be against principles of participation or the participatory ethos of the course, as this would set a hegemonic trend of participation which would be the same as the Research, Develop, Disseminate and Adopt approach that participation was meant to re-mediate or counteract (journal, pg.10).

The above descriptions of the interactions surrounding one course participant's assignment presentation, indicates that assignment presentation and discussion during workshops appears to be an important dimension of providing opportunities for praxiological learning processes and diagnosing participants' beliefs influencing their work by observing interaction. Praxiological learning processes in the course are also reflected in assignment writing and assessment processes.

4.2.5 Assignment writing

Based on my observations, it would seem that assignment writing appears to offer further opportunities for fostering a praxiological approach to learning. Janse van Rensburg and Le Roux (1998: 109) assert that assignment writing in the Gold Fields course is viewed as an "... opportunity, and a process of personal development". It supports participants in doing their job better by exposing them to the practice of drawing on and making links with their job (*ibid*) as they follow the assignment instruction (see section 2.5.2).

Assignment writing and presentation also contributes towards skill development by providing opportunities for practicing such skills. According to Janse van Rensburg and Le Roux (*ibid*: 85) many participants commented that the course contributed to their writing and presentation skills through practice, with support from tutors and other participants. Skill development in writing in the context of the course is also important for praxis, in that it enables improvement of participants' writing work in the workplace, as they write work related reports. This practice is enabled through written reporting on research and other processes during assignment development processes (assignment writing). One participant in the Gold Fields Course commented that her report writing at work has improved through her involvement in assignment writing in the course (*ibid*). One of the ways, in which these writing skills are developed, is through a process, which encourages participants to produce more than one draft of the same assignment. This means they need to write, receive comments on their writing, and re-write for improvement (see section 4.3 and 4.4 below).

Work-based assignments also enable praxis by encouraging participants to think and write about what they think in relation to their work and social context. For example, Messiah (a participant in this study) teaches at a school near the SAPPI pulp mill and in his assignment he wrote about a problem posed by operations in the mill that applies in the socio-economic and ecological areas of the community he is part of (see section 4.3). As he went about developing his assignment he reflected on these aspects of his environment and how they relate to either the problem or possible solutions.

4.2.6 Assessment

The assessment of assignments is also viewed as a praxiological learning process in the course. According to Janse van Rensburg (cited in Raven, 2000:78):

The process of assessment as learning supports the reflexive orientation of the course in that it encourages participants to take responsibility for their learning and question their practice and personal and professional development in the course.

The assessment of assignments involves observing participants' professional growth against the assignment instruction based on the assessment criteria and course orientation, comments by other participants and tutor comments on the assignment drafts. Having participants submit three assignment drafts, which are supposed to be read by other participants and tutors who make comments on that draft facilitates this process. It is also supported by the general expectation that each regional group negotiates assessment criteria relevant to their context (professional development needs as indicated in the pre-course assignment) against which they will be assessed (*ibid*). Professional development or growth is assessed through observable improvement in the writing of the assignment by considering comments made by tutors and other participants. This process facilitates learning by involving the participants in the negotiation of assessment criteria and commenting on written work against the established criteria for the assignment.

When asked what praxis means Dlamini (pers. Comm. 30 - 10 -- 03) pointed out that praxis has much to do with the nature of the assignments. He stated that "... the assignments are equipping the participants with some kind of skill and the process of assessment will help the participant identify this skill in resource development in such a way that we believe they are growing professionally". This may be achieved through reflection on his actions in the development of the assignment in context (*ibid*). In the case of assignment four, the construction of a journal for describing the research process also supports the reflexive orientation of the assignment process and course orientation. Through it, participants are exposed to opportunities of learning from their mistakes, hence providing them with further opportunities to improve practice through self-assessment and reflexivity.

4.2.7 Summary

This course processes profile reveals that participants in the Swaziland course are exposed to a number of opportunities for professional growth, through praxis-based experiences in the assignment development process. These include the assignment orientations and engaging with relevant reading materials; discussions and presentations; assignment writing; journal writing and interactions in the assessment process. Key to these processes are the tutor-participant and participant-participant interactions in tutorials, as highlighted through the case of Mdluli's assignment presentation process.

However, these are not the only processes that foster praxis. This study further investigates praxis at the level of implementation of assignments in context that reach beyond those confined to the course processes (readings; tutorials; assignments) and explores how the assignments are applied or used in practice. To investigate this aspect of praxis, two participant's experiences of the praxiological assignment processes and its implementation in the field were analysed, and are presented in the form of constructions (profiles) in section 4.3 and 4.4 below.

4.3 Messiah's experience in a praxis based course

This section considers Messiah's experiences in the course. To compile the construction of his experiences, I drew on his pre-course assignment, observations of his interactions in course tutorials, his assignment four (all drafts) and I observed him using the assignment in his workplace. I also conducted interviews with Messiah, and discussed the construction once I had developed the first draft. He was able to comment on the first draft of the construction, and I was able to refine certain interactions, and probe some of the issues in more depth in conversation with him (see chapter 3).

4.3.1 Academic and work background

According to his pre-course assignment Messiah is a Primary School teacher. He holds a Primary Teachers' Diploma, which he obtained at Ngwane teachers' College in 1990 and a certificate in agriculture (pre-course assignment, pg 1). He has served in three schools, including Ngwane Practicing, his second school and Emhlangeni Primary, his present school. At this school he teaches Agriculture and Science mainly, though he teaches other subjects as well. He also teaches environmental education by infusing it into Agriculture and Science (workshop transcript, pg.16).

4.3.2 Involvement in environmental education

Messiah has attended a number of Yonge Nawe workshops for teachers in environmental education. He has also been attending the Environmental Education Association of Southern Africa (EEASA) Conference since 1999 when it was held in Grahamstown. This is where he first met environmental educators from all corners of southern Africa (pre-course assignment; journal pg. 14). In 2001 he attended the EEASA

conference in Lesotho where he observed the Katse, the biggest dam in southern Africa and serious problems of soil erosion.

After attending the first Yonge Nawe workshop, Messiah conducted clean up campaigns around Nhlanguano Town. He also established a new environmental club at Emhlangeni Primary School after being transferred from Ngwane. The club has planted trees to serve as wind breaks around the school and has also been involved in donga reclamation with the local community. By 2002 the club was in the process of establishing a nursery and was also planning to embark on a project on air pollution with Yonge Nawe. At Emhlangeni he was also involved in a community garden project (pre-course assignment, pg. 1&2).

4.3.3 Participation in the Swaziland course deliberations

When he registered for the Swaziland course he thought it would help him to "... work easily with students on environmental issues, by bringing in knowledge and ideas for sustainable development in a sound way" (pre-course assignment, pg. 3). Through the course he also intended to further his studies in environmental education to obtain a degree, a sentiment he also shared with me when I visited him at Emhlangeni to collect data for this study on his programme on air and water pollution (journal, pg. 17).

As noted earlier, the Swaziland course fosters professional development through participation in praxis-based assignments (see section 2.5.2). Messiah started working on his assignment even before he attended the assignment orientation workshop (journal, pg. 1). This became evident when he presented his assignment idea at a group meeting. He offered to present his assignment for the purpose of sharing it with the other participants in order to help others have an idea of the expectations of the assignment. He gave the topic of his assignment and stated that he wanted to make a poster (journal, pg. 1). The topic of the poster was: '*Air and water pollution case study at SAPPI Usuthu Company (Bhunya)*'. This topic was in line with his earlier plans of embarking on a project on air pollution, though he had not clarified what type of project it would be in his pre-course assignment (pre-course assignment, pg. 2&3). The focus of his assignment was on the role of government and the public in implementing policy for environmental protection, pollution control in particular, and natural resource management (journal, pg. 1).

The assignment idea was shared amongst the group through a discussion. A question was asked by one of the participants on how such a policy would be effected and what instruments could be used. In response

Messiah emphasised the need for policy to be effected through partnerships between all stakeholders in liaising and cooperation with regional and international organisations. Kayise (a course participant) raised another question about the possibility of effecting Messiah's idea in the context of Swaziland and the dual system of governance (journal, pg. 1).

A heated discussion ensued as participants reflected on the problems encountered when implementing development projects in Chiefs' areas (Swazi Nation Land) where decisions are made by two systems (traditional and civil) operating along different legal standards. The deliberations on the issue associated with the dual system of governance appeared to be a significant meaning-making interaction amongst participants, as they appeared not to have been fully aware of the problems of this system of governance (journal, pg. 1). This was evident when Nathi (another participant) commented, " this course is an eye opener" (journal, p. 1).

4.3.4 Assignment presentation

Messiah presented his assignment at a tutorial workshop on the 30th November 2002 at the National Curriculum Centre (NCC), in Manzini. He presented his ideas on poster development to raise awareness of pollution at Bhunya (the pulp mill) (journal, pg. 8). He mentioned that his assignment seeks to involve the people from the local community to find out if they are aware of air pollution emitted by the pulp mill. He pointed out that some of the local community members are aware of the pollution and that the air is corroding their corrugated iron roofs and causing sicknesses like asthma. Although he was not sure how true it was, he had gathered that people who go to the clinic from around Bhunya have been found by doctors to have sicknesses like asthma (workshop transcript, pg. 4).

Messiah also mentioned that when he interviewed some company officials at the pulp mill they agreed that there is polluted air, though some did not agree that they have polluted the air. He indicated that he is also going to find out if people are still collecting fish along the river and whether they get it dead or alive. He also indicated that he is going to interview government officials to find out if they are still following their laws. That is, if they are still monitoring the air and water pollution (*ibid*).

Messiah stated that his poster would target school children, workers and adult community members. He made special reference to workers whom he felt were more exposed to the chemicals and by the time they

get their pension they already be sick, and will have a meager package to take care of themselves (*ibid*, pg. 5).

After the presentation one participant asked Messiah questions based on his plans for the interviews. He wanted to know what Messiah wanted to find out from the interviews. That is, if it was to find out that the polluted air is a problem. He wanted to know if the community members were aware that the polluted air was a problem and if they (the community members) were aware that the air was polluted or not (*ibid*).

Another participant (Mdluli) raised the following concern:

The objective of the poster is to raise awareness... what should be done after that? Is that the objective because as it is they are aware that the water is polluted? Is it to make them not to use the water [stop them using the water]? Or is it to try to rectify [the situation, by encouraging them to]... stand up and approach the company? (Mdluli, cited in workshop transcript, pg. 5).

In response to these questions, Messiah stated that the poster is meant to make the local community more aware of the situation because as it were, the people were aware but at times they keep quiet and did nothing about it (*ibid*), thus reflecting his view that awareness may lead to action.

Following this response, Mdluli then advised Messiah that he needs to focus on whether he wants the company or someone in the affected area, like a member of the community to talk to before he comes up with the idea of making a poster. He asked Messiah what he would like the poster to be like. Mdluli also raised the issue that there might be politics involved in this issue. He gave an example of a case where the people would say their hair is affected by pollution and asked Messiah what evidence he had that he would use to prove that it is the pollution that is affecting their hair. Through this comment, he drew attention to the fact that people may react in different (and unexpected) ways when they see the poster, and their responses may be political in nature. He felt concerned that the local community may not perceive Messiah's poster in the way that Messiah wanted, and he wanted to alert Messiah to these issues. He indicated that Messiah himself should be clearer on the exact message he wanted to convey in the poster, and that he should verify how people may react to this message, before producing the final poster (workshop transcript, pg. 5).

Another participant suggested that Messiah opts for a resource that will distribute information and that he

should think more carefully how people might behave after having received that information. She anticipated that Messiah might find that he stepped on the company's toes (offended the company) and that this might cause a negative response from the company (*ibid*).

During the final workshop Messiah also presented his assignment, though it was still not complete. This time he presented an environmental fact sheet on air and water pollution. He mentioned that the fact sheet would highlight major issues on air and water pollution. He felt that the major issue was that most of the people were aware of air and water pollution but just cannot do anything (workshop transcript, pg. 6).

Messiah also highlighted policies as the major response by government. He also stated that the role of government is supposed to be to promote environmental education but this seems to be on a very small scale in practice (*ibid*).

Messiah went on to present part two of his assignment where he justifies his choice of resource material, a fact sheet. He mentioned that at first he had decided to produce a poster (as stated in his last assignment presentation); but during his presentation and discussion participants in the discussion felt that a poster would be sensitive to the people around Bhunya, mainly the company, since the poster would be critiquing the company practices, and this may cause dilemmas given that many of the community members were employed by the company. He pointed out that SAPPI Usuthu is one of the companies that deposit toxic waste in rivers but because there is lot of politics involved, government is silent. Messiah went on to state that due to these issues participants felt he should develop a fact sheet because it would be less confrontational, and could be used educationally by both the company management and the public (workshop transcript, pg. 6).

Messiah also discussed the intended target group of his resource. He said schools, colleges, universities and workers could use the fact sheet. He pointed out that it could be a useful resource for workers so that they learn more about the environment since the toxic air pollution deposits chemicals and gases that are inhaled by people. He felt people were ignorant of what was happening and when the company closes down they will be left to suffer (*ibid*, pg. 6). Messiah went on to mention that he heard people complaining that their hair is affected by the pollution and that the pollution is damaging their corrugated iron roofing (*ibid*).

Philile (another course participant) wanted to know if the management would get to see the fact sheet and wanted to find out what Messiah thought their reaction would be. She specifically wanted to know if the use of the fact sheet would be different from that of the poster. In response Messiah stated that the basic idea of the fact sheet would be to educate the people about air and water pollution, since at times the managers hide some of the things from the workers and community. That is, that they are practicing unsafe environmental activities (*ibid*, pg. 7).

Philile went on to ask him the following questions:

But how do you think they will feel? Won't it cause the same problem when they know that now there is somebody who has been giving it out to the community, about something that they are actually hiding from them? Won't it cause the same scam [problem]? (Philile, cited in workshop transcript, pg. 7).

Another participant commented that the fact sheet would seem to be more relevant in this sense than the poster because they would not know how many had been distributed, nor where they had been distributed. She, did, however, feel that even though fact sheets may be more effective in terms of wider distribution and broader access through less 'control'; the poster may have had a bigger impact, and could have elicited more of a 'collective' response, as people react differently to the way they would react to a fact sheet (*ibid*).

This point was supported by a third participant, who joined the deliberation and commented that the poster would be more effective in reflecting the exact issue, and that people may become aware of the issue more quickly, which would allow for a quicker reaction. She commented on the issue that even though people are aware of the bad smells from the factory, and that they are aware that there is 'something wrong', they have not gone to the extent of acting upon the issue (*ibid*). The group agreed with the last speaker by commenting 'yah' and the tutor further commented that, given the debate, one might feel that a poster is more relevant. The group also agreed. The tutor further commented that it has to do with different contexts and that the poster may be more relevant depending on where you put it. The discussion on the issue continued, with one participant indicating that she thought even the people who are living around Bhunya will have a problem with their chests. Another participant (Nokuthula, a community member of Mankayane) added that the smell is experienced as far as Nqabaneni and Mankayane. The group asked if she was sure, in disbelief of what she had said. Another participant added that the smell also goes as far as Manzini. Following this, another participant asked Messiah if there was anything said about this smell when he asked the company officials. Messiah indicated that the company appeared to have a limit on the information they

released for his consumption (workshop transcript, pg. 7 & 9).

To explain this situation further, another participant gave an example of a case of a friend who was doing a project at Kwaluseni on a similar study and was supposed to test water but was refused permission to conduct tests. Instead the company concerned offered to conduct the tests and give her the results. 'Hawu!' commented the group in shock. The participant continued and gave another similar case example of someone who was researching the paper mills. Here the company also offered to conduct tests for her. She commented that this was because the company wanted to 'cook' (influence) the results. The tutor commented that such things affect the validity of the results of the studies. She felt if one would conduct the tests the results would be different from when done by the company whose actions may be questionable (*ibid*, pg. 8).

These deliberations appear to be interesting from a praxiological point of view, given that they indicate much concern and consideration for how the educational process and product (poster or fact sheet) is likely to play out in reality, and how effective it may be in a complex social context. The deliberations around Messiah's assignment plans indicate the difficulties of fostering environmental change in complex social settings where power relations are unequal (the company being the most powerful in this setting); and where people appear to have little agency to respond actively to the issues arising in the setting. Messiah's (and the group's) concern appear to be closely related to the most effective and strategic approaches to a) deal with politically sensitive issues through education and b) the most effective strategy to elicit a meaningful community response through an educational intervention.

4.3.5 Assignment Writing

As indicated above, Messiah developed a fact sheet on the pollution of water and air at Sappi Usuthu Company as his assignment. The fact sheet highlights the dangers of air and water pollution to the neighboring communities, which he contends, are major environmental issues. He asserts that the increase in pulp production to meet the growing demand for pulp leads to an increase in the production of more air and water pollutants. He also describes the form of pollution produced during the processing of pulp and gives examples of the pollutant gases and states its impacts (assignment 4 part 1, pg. 1) (see appendix ...).

He further states that the resource will help raise awareness amongst the people, so that they can 'stand up

and fight' for their environmental rights, for example, by organizing a demonstration in the company premises (assignment 4 part 2, pg.1). He hopes that his resource will raise awareness that the government has a major role to play in the issue so that community members can put pressure on government to protect the environment. He describes the government's responsibility to intervene where necessary and in accordance with the law in protecting natural heritage for the benefit of the present and future generations (*ibid.* pg. 2). Messiah contends that his resource is suitable for students from school through to university level because they are the future leaders and it is ideal for them to gain a better insight into environmental issues to be better leaders in future.

Messiah highlights the influence of tutorial discussions on the development of his resource when he says:

At first I wanted to develop a poster as a resource material to show air and water pollution. During a class discussion with my colleagues or participants it was highlighted that a poster will be too offensive to the managers of the company. Then I changed to develop a fact sheet, which could be easily used by learners (*ibid.* pg. 2).

Messiah asserts that the development of his resource reflects aspects of a behaviorist orientation to education, but he concludes that through awareness raising activities, he hopes to foster participation and active involvement of the community (*ibid.* pg. 3). He motivates for this by noting that most of the time the government formulates environmental laws without involving the stakeholders including industries, business communities and the people at large. Thus, he feels that his resource may be able to engage people more actively (*ibid.*).

To develop his resource, Messiah conducted research, and drew on a number of sources, some of which he listed as references in the last page of the resource (assignment 4 part 1, pg. 9). He also consulted the company's environmental officer. From the environmental officer he gathered that there were problems arising from the manufacture of pulp including: pesticides used in the forest plantation that are washed into rivers during rainfall, weed killers threatening plant life and chemical emissions from the plant that are washed into the great *Usuthu River* (*ibid.*). Written sources included a course reading by Gourlay (1995) '*A World of Waste*', where he read about the effect of radioactive waste, air pollution and acid rain as well as greenhouse gases and climate change.

Messiah does not justify why the resource was developed the way it was developed nor does he suggest

how he would do it next time, as per the assignment instruction.

An analysis of the fact sheet content reveals that Messiah feels pollution from the pulp mill impacts negatively on ecosystems and people using the river for domestic purposes. He also identifies government legislative instruments meant to enforce standards and laws for the protection of the environment against air, water, land and noise pollution (assignment 4 part 1, pg. 4). Messiah further recommends that the role of government in environmental protection is to work in partnership with the public in general, and particular communities and organizations to achieve the objectives of the national environmental policy and he lists these objectives (*ibid*, pg. 4 & 5). He feels the policy will provide an essential mechanism and basis for coordinating the objectives of many government ministries, traditional structures, municipalities and organizations involved in environmental and natural resource management (*ibid*, pg. 6). In the summary of his fact sheet, Messiah highlights the importance of a comprehensive environmental policy by reflecting on a report submitted by Swaziland to the 1992 United Nations Conference at Rio de Janeiro, which identified the absence of a comprehensive environmental policy as a significant obstacle. His summary focuses on policy issues and it gives a historical view of policy processes that involve consultation, which are meant to respond to policy problems (*ibid*, pg. 8).

In his resource Messiah also discusses the role of the public and social responsibility of individuals and collective responsibility in organizations. He says, "... environmental responsibility draws attention to our personal and collective responsibility for environmental protection" (*ibid*, pg. 7).

4.3.6 Taking the assignment further

Messiah used his fact sheet at the school where he teaches. I went to observe his lesson on the 4th July 2003 at Emhlangeni Primary School. When I got to the school Messiah introduced me to the head teacher. The head teacher indicated that Messiah was trying very hard to strengthen an environmental education focus in the school but there many constraints frustrating his progress. He cited fire and animals destroying plants that Messiah plants in the yard as two examples (journal, pg. 14).

As we walked down to his classroom he told me that he attended this year's EESA Conference in Namibia and attended a presentation on infusing environmental education as a cross-curricular concern in formal education. That is basically what he said he was doing with his agriculture classes, through including his

topic on air and water pollution in his local area Bhunya.

Following this introductory discussion, I observed a lesson taught by Messiah, in which he used the fact sheets developed as his assignment four in the course. Messiah introduced the Topic as "*Air and Water Pollution at Bhunya*" and wrote it on the board. He then proceeded to establish the context of the issue by saying, " We know that our fathers are working at Bhunya so we benefit a lot from that company" (*ibid*). He indicated to the students that a lot of damage is being done to the air and to the river, the Great *Usuthu* River. He referred to the river as the river that the students cross everyday, to encourage observation by the students, as most of them cross the river when coming to school (*ibid*).

After the introduction he divided the students into two groups (A and B) to discuss the effects of air and water pollution respectively (*ibid*). He requested that one person from each group report on the group's discussion. To draw student's attention to important points to be considered during the discussion on air pollution he asked them a number of questions concerning the smoke that comes out of the plant, including the following: " What is air, what is going to happen to us?... How is this smoke going to affect us? Is this smoke real smoke or gases"? (*ibid*). He drew the attention of the group that was discussing water pollution to the chemicals that are deposited into the river by the pulp mill in relation to life in the river. He asked both groups to list their discussion points stating how air and water pollution would affect life. Both groups had a discussion and made a list of their points. The presenters used the list of points to report on their discussion Messiah summarized his lesson and highlighted the following points:

- There is nothing we can do to the company as individuals because we cannot go to the company and accuse them of polluting the river.
- We look at government environmental policy to assist with the issue.
- Although we need industries in order to earn a living, we also need a better life and therefore' we should bear in mind how the pollution is going to affect us in the long run.
- There is also water pollution because of domestic purposes (these also disturb the ecosystems).
- Ecosystems are made of those animals that live in the river and their interactions. For example, fishes, birds and snakes.
- That government has a lot of policies that they formulate to take care of air and water.
- Since the students know that the water is being polluted they need to talk to government to enforce the environmental policy (*ibid*).

To conclude his lesson he said, "...it is up to us now that we want to continue living in a place where the company is polluting the environment and people doing nothing" (*ibid*). Messiah also pointed out to his students that although they need employment, they should do something to reduce the degradation of the

environment. He further suggested that learners should talk to government to enforce the laws that she has made, because otherwise in the future they are not going to have enough air and they are going to drink dirty water. Finally, he assigned the students to observe the colour of the *Usuthu* River and also note the smell when they cross the river, both in the morning and in the afternoon (*ibid*).

4.3.7 Further perspectives on the assignment process and outcomes

Following the lesson observation, I asked Messiah how the assignment development process contributed towards his teaching in an interview. He stated that it helped develop him in many ways including planning and directing his focus to what he should teach the pupils (Messiah, pers. comm, 04/07/03). I also asked him how he found developing the programme. That is, if he found it manageable. He pointed out that he found it easy but complained about not having had enough time. When asked to explain how he actually used the assignment in the end, he stated that he uses his programme when he teaches agriculture (*ibid*).

I also asked him to highlight the problems he experiences as he implements environmental education at the school, as per the head teacher's comment. In response he raised two problems. One being animals destroying his plants in the school yard and the other being that there was not enough time to do environmental education because of time constraints within the school time table. He stated that activities like cultural activities and sports take up teaching time, thus leaving little extra time for environmental education (*ibid*).

I then followed up with the probing his general feelings about his programme. He mentioned that he intended to raise awareness amongst the people because some people are aware of the pollution but just can't take action (lesson transcript, pg. 17).

Messiah did not indicate any means of evaluating his programme but when asked if it was possible to evaluate it he stated that he could evaluate it by observing changes in attitudes (*ibid*). This seems to affirm Messiah's belief that awareness raising will lead to behavior change (a classic behaviorist assumption - which appears to be an assumption that seems to underpin his entire programme).

When Messiah was asked why he decided to do the assignment on air and water pollution at Bhunya, he pointed out that he considered the area around Emhlangeni and mainly that most of the people in this area

work at Bhunya. He stated that by this assignment he was trying to raise the peoples' awareness of air and water pollution since the smell and pollution of the river is affecting them. (Messiah, pers. comm., 01/11/03).

During the interview I was not sure whether the smell comes from the polluted river or from the air pollution. Messiah explained that the smell is from the factory and that it is actually gases that are emitted by the mill (*ibid*).

I referred Messiah back to a discussion that participants engaged in after he had presented his assignment idea in which the discussion ended up focusing on the influence of the dual system of governance on policy implementation. He was asked how he found the discussion relevant to his assignment. Messiah explained that he found the discussion relevant for his assignment because it was on policies on air and water pollution and government implements most of the policies without involving the people or stakeholders. He pointed out that what he found interesting in the discussion was that it was mentioned that the people are left out of the discussions when the policies are made and this makes it difficult to implement (*ibid*). When asked how the dual system of governance would affect policy implementation in his study area, Messiah explained that when implementing something in his area the people are called to the Chief's kraal and the Chief explains what is going on to them, but at times government would talk straight to the company without involving the people, yet they are the ones who are directly affected. Messiah feels that when the people are left out of the discussions they just keep quiet, mainly because they are not very informed about the issues and risks (*ibid*).

I also asked if Messiah had taught any other lessons on the topic before the one which I observed. In response Messiah stated that he implements environmental education whenever he teaches agriculture or Siswati. I then asked him how he disseminated the information from his assignment to the students. I ask him this question because I noticed that the discussion was based on information contained in the assignment, which is why I wanted to find out if he had had another lesson on the topic before. Messiah's response was that he displays posters that are relevant to the topic and holds probing discussions with his learners. When asked how the poster portrays the points to be discussed he pointed out that he puts up the poster and they have a discussion or browse over it (*ibid*).

These 'follow up' questions were aimed at probing some of the issues that were arising in the development of this construction on Messiah's experience of the assignment process in the course. The additional

insights shed further light on a) Messiah's strong feeling about participation in governance associated with environmental issues and risks b) his teaching practice, and the use of his assignment 'product' in the classroom. It also affirms Messiah's beliefs that awareness raising leads to behavior change and that environmental education processes aimed at action, should be fostered through awareness raising.

4.3.8 Summary of Messiah's experience in a praxiological course

This description of Messiah's experience in a praxiological course (above) has raised some interesting insights. Messiah is passionate about community participation and action for change, and this motivates his choice of assignment topic and focus. His fellow course participants appear to be equally interested in this dimension of Messiah's work. The content of his assignment is political and strongly emphasizes the responsibility of government, and governments' role in enabling more democratic approaches to environmental governance.

There also appears some complexities in the choice of topic, given that most of the community members are employed in the factory that produces the pollution (these are the parents of the learners in his class). The company is in a powerful position, and community members are apparently not able to engage in activism against the industry, due to their dependence on the company; and to a certain extent their 'ignorance' of the real issues, even though they appear to be aware that these issues do, in fact exist, (given that it is hard to ignore the air pollution and the smell of the polluted river water). The power dynamics (linked to economics) make environmental education for community activism difficult in this context.

In response to the environmental issues and risks, the political issues associated with environmental governance, and the power issues related to the socio-economic situation, Messiah plans an educational programme that is intended to 'raise awareness'; and through this he hopes to change behaviour and encourage greater community participation and action. Some debate ensues as to whether a poster or a fact sheet is the most appropriate mechanism / strategy for awareness raising in this context. The discussion is based on whether the fact sheet or the poster will elicit community action taking, and are also centred on which of the two strategies are more / less controversial. However, little debate arises whether awareness raising strategies are, in fact, the most appropriate educational approaches to respond to the complex set of issues raised in Messiah's assignment work. Despite his strong interest in political activism in this context, Messiah uses the fact sheets to raise awareness amongst the learners in his class, and

suggests some observation activity (when they cross the bridge). It seems he did not really use the material in a community context; and little or no effort was made to educate the management or workers in the industry, even though it seems that the fact sheets were intended for the workers.

From an *educational praxis* point of view, however, the course assignment process has assisted Messiah to develop some resources that are relevant to a burning issue in his context. In addition it has encouraged him to deliberate on which may be the best option to consider on his awareness-raising programme (poster or fact sheet). He has also applied these materials to an educational activity in his context (the learners in his classroom).

From an *environmental praxis* point of view, however, it would seem Messiah's attempts at addressing the environmental issues and risks through an educational response, may not have been the most effective approach in the given context. This may partly be due to the 'fit' between his educational assumptions (which reflect classic behaviorist educational assumptions) and his political interests (which are to engage communities in action in response to environmental justice issues). It may also be due to fact that power relation structures (economic and political) in the context appear to be placing severe constraints on individual and even community-based agency (see section 2....) (Messiah's agency as an activist educator and community-based agency in response to the issues and risks that have arisen in the Bhunya context).

In the next section I describe the course experiences of a second participant in some detail.

4.4 Philile's experience in a praxis-based course

This construction of Philile's experience in a praxis-based course was compiled in a similar way to the construction of Messiah's experience in the praxis-based course (see section 4.2 above). I used similar data sources, and a similar process of analysis to compile the construction (see chapter 3). The first draft of the construction was shared with Philile and she made some changes to the data in the form of corrections.

4.4.1 Academic and work background

According to her pre-course assignment, Philile is a High School teacher. She holds a Bachelor of Science in Agriculture (B.Sc.), which she obtained at the University of Swaziland in the year 1991/2. She has been

teaching Agriculture at high school and Science at junior secondary level since she completed her degree. She has served in two schools including Lomahasha her first school, where she served for two years. She is now at St. Joseph's High school, her second school where she has served for seven years to date. At her first school she was involved in extra curricular subjects such as drum majorettes and African dance with the students, from which she claims that she learnt that students were more relaxed outside than in the classroom. She asserts that 'you get to know them better as people' outside the classroom (pre-course assignment, pg. 1).

4.4.2 Involvement in environmental education

In 2000, Philile was sponsored by Yonge Nawe to attend the Environmental Education Association of Southern Africa (EEASA) Conference held at Kwaluseni campus of the University of Swaziland. She asserts that attending this conference broadened her appreciation for environment and environmental issues, including some areas of environmental education. She also pointed out that she enjoyed listening to the various speakers in the parallel sessions and gained greater interest in environmental education. She claims that at that time she resolved to be involved in the EEASA Conference in future by writing articles for presentation (*ibid*, pg. 2).

At St Joseph's Philile got involved with Yonge Nawe as a nature conservation and awareness club advisor. She claims that here she enjoyed working with students in a number of activities including a sponsored clean up campaign stretching from the Manzini post office to the Matsapha complex. With the money they raised at the sponsored walk they funded a nature awareness trip to Mlawula nature reserve. Philile points out that at Mlawula they had a fun-filled education trip, which involved hiking for twenty kilometers on trail and camping in tents in the wilderness to make students aware of the natural setting with wild animals at night. They also had a *braai* and engaged in scary mountain climbing using ropes, which left all of them with great memories that Philile felt they were unlikely to forget (pre-course assignment, pg. 2).

4.4.3 Participation in the course

In the year 2002 Philile was invited by a friend to join the Swaziland course. She states that she just joined the course to broaden her sphere of friends as she was going through a difficult period in life at that time. She was also hoping to achieve more knowledge about how to contribute articles to future EEASA

conferences and to gain confidence in public speaking.

She also hoped that by the end of the course she would be able to analyze all aspects of environmental problems, including learning to accept other people's opinions in problem solving. Her other point of interest was to further her studies. She hoped to do the master's degree programme with Rhodes University on completing the certificate course (pre-course assignment, pg. 2 & 3).

Philile participated in the course through her contributions towards assignment presentations and discussions. An instance of that is reported in section 4.3 when Messiah presented his assignment development process. From the evidence presented in section 4.3, Philile shows an ability to be an active, engaging course participant, given that she continued her line of questioning when discussing the issue with Messiah.

4.4.4 Assignment presentation

Philile presented a fact sheet as her resource (assignment) for use by her school club (workshop transcript, pg. 8; journal, pg. 11). She pointed out that the fact sheet provides information on the issue and gives a simple message to educate the school going youth. She raised the following two issues: teenage pregnancy and the issue of HIV/AIDS and HIV status. She pointed out that the aim of the fact sheet was to provide more information on the issue of teenage pregnancy. She mentioned that a lot has been said about the issue and referred participants to an article in the local newspaper, '*The Times of Swaziland*' on the issue. She stated that the newspaper article draws attention to the fact that some students get pregnant without even knowing their HIV status, which she noted, is a serious current issue (workshop transcript, pg. 8).

She pointed out that the aim of the fact sheet is also to create greater awareness on HIV/AIDS related matters amongst school going youth. She mentioned that the information is meant specifically to cause behavioral changes in the youth. She argued that information is power, it would provide the children in the school situation with some of the facts pertaining to some phenomena that are either not known or misconstrued by the children (*ibid*).

She gave one example of what she called a terrible misconception, that some people believe that if they have sex with virgins and they are HIV positive, they will become negative. She noted that these

misconceptions are coming from parents and are also interpreted among children causing a lot of destruction. She pointed out that there is therefore a need for some 'accurate facts' to be 'given out'. She provided insight into the context in which the fact sheet will be used by the youth. She stated that it would be disseminated within an existing school health and anti-AIDS clubs. She mentioned that disseminating information through the fact sheet is based on the realization that there are a whole range of interlinked sexually related matters. She stated that it is not only AIDS related matters but all such matters as teenage pregnancy and other issues that have been left out before in educational programmes aimed at school going youth (*ibid*, pg. 9).

Philile associated her work with behaviorist theories in education, which she notes as assuming that awareness or knowledge causes behavioral change. She mentioned that the reason why the fact sheet is being used in the school health club rather than being incorporated within the school curriculum is because learning takes place much more efficiently in a relaxed atmosphere (*ibid*). She believes that when children are relaxed and entertaining themselves they are more likely to participate in discussions and debates. They are also more likely to bring out more of their individual experiences, things that they come across from day to day even at home, within the community and so on. She also believes that it is easier for children to participate within their peer groups in club settings. She thinks learning will obviously proceed much faster since the students will be free as opposed to 'constrained' in the formal classroom set up (*ibid*).

She pointed out that the fact sheet would be used to substantiate the information during discussions or debates undertaken during health club sessions. Depending on the programme she suggests that learning would take place once a week or bi-weekly, or sometimes students may decide to have their presentations during assembly. She also suggested that the fact sheet would be given out to the club members at executive level so that they can participate and deal with these issues proactively, given that they are tomorrow's population. She pointed out that by disseminating the information in the fact sheet the rest of the children at the school; especially the club members will be exposed to the impact of the issues it addresses. She feels this is important because some of the children may not have money to subscribe to the club (*ibid*, pg. 9).

Philile mentioned that the fact sheet is basically meant to encourage active learning. She defined active learning as "...a process of encounter, dialogue and reflection actually taking place" (Philile, cited in workshop transcript, pg. 10). She recalled that at the beginning of the assignment some of the information

was gathered from the children by using a questionnaire because she knew that they already had substantial information on the issues she wanted to address. She pointed out that if she would show participants the questionnaire they would be surprised to see that many of the issues had been included and dealt with in the resource. She noted that some of the students know so much and were able to offer so many solutions, and their 'knowledge' has provided the background of the whole project, and the resource she developed (workshop transcript, pg. 10). This approach to the development of her resource reflects a constructivist approach to teaching and learning (Janse van Rensburg & Lotz-Sisitka, 2000; Moll, 2002).

She also stated that the students will also be doing field visits as part of club activities and that the fact sheet will inform and substantiate some of the field work interactions. She mentioned that the facts would also allow for dialogue since the students will be using some of the facts for further research as they proceed with discussing and debating the issues. She suggests that it will provide background information for the students to reflect on since they will have to think about the issue so that action may be undertaken by the youth. She contends that this will happen much more effectively if there is a strong 'starting point' or 'base', removing the misconceptions that have become 'common sense' (workshop transcript, pg. 10).

She cites O'Donoghue (2000) whom she claims pointed out that learners construct personal meaning within new value orientation frameworks, as they become committed to environmental conservation. Philile considers these processes to be processes of active learning. That is, when you involve the students. She recognizes that behavior change is not a quick fix, but that it is likely to take a long time and lots of interaction, dialogue and learner involvement (*ibid*).

Philile pointed out that evaluation of her programme would involve preparing a worksheet (she would prepare it) and disseminating it to the youth in the clubs at regular intervals, to gather information on what they know, and to solicit insights into their (changing) personal knowledge and meaning. She believes that through these educational processes, children will undergo personal changes in thinking, which will contribute to changes in behavior. She pointed out that there will be trials for implementation done in the school health clubs and feedback will be solicited by using questionnaires, which will either be given to the club leaders or to the students themselves (*ibid*).

She commented further that the strengths of the resource would be to provide accurate more detailed information for discussion and debates. She insisted that the resource would stimulate the youth to act to

solve impacts of the problem from club level to the students' local communities, leading to behavior changes (*ibid*).

Philile also outlined the potential weaknesses of her resource. She said "... it's somehow narrow in scope"(Philile, cited in workshop transcript, pg. 11), since it provides a mode of information transmission. She recalled that in the justification she did mention that at least she is hoping that active learning processes will take place, using the fact sheet in combination with other activities (for example, field trip; dialogue and debates), leading to changes in behavior. She also mentioned that she hopes the resource needs to be used and in the process, and through its use, insights will be gained to improve it for future use (*ibid*).

Based on her knowledge of the fact sheet of the time, Philile discussed possible ways of strengthening the resource (indicating some of the possible changes for the second draft of the resource). She suggested improvements such as making the emblem sketchier or having something that will arouse interest amongst the students, for example, including having artistic diagrams of girls being pregnant and so on. She further suggested using more colour as she believed colour would be attractive to the students and would attract the children's interest. She thought, as a way of improving her resource, she may even produce a colour poster to accompany the fact sheet (*bid*, pg. 11).

Philile described the development process associated with the fact sheet. She pointed out that the idea of a fact sheet was first conceived after several discussions with fellow participants and some tutors. She indicated that in this process she needed to argue the case for making a fact sheet. She also mentioned that she drew on an article on resource material development in Zambia, (one of the course readings) written by Lupele (Lupele, 2000). She says this article inspired her a lot, since it was about 'a workshop that worked', which described a process of collaborative resource material development. She pointed out that several drafts of her fact sheet were developed and discussed with fellow participants and tutors as well. Her final document was produced after more meetings. She stated that she also included facts from newspaper articles and brochures from the library (workshop transcript, pg. 11). She also acknowledged the Schools Health and Population Education (SHAPE) Department for being helpful since they provided her with basic information containing the facts and statistics on HIV/AIDS based on earlier research conducted in the department. She also mentioned that they were friendly and gave her their constitution and explained that they would be running a number of teacher training programmes that she could take part in

(*ibid*). Philile also indicated that a member of SHAPE encouraged her to produce the resource with more depth, as they (SHAPE) were interested in seeing it when it was complete, and they were interested in following up on its use with students and communities (*ibid*, pg. 12).

When comments were invited after her presentation, participants felt that she had done an excellent job and there were no further comments.

4.4.5 Assignment writing

As indicated above, Philile presented a fact sheet as her resource. In the assignment she firstly presents a description of the design of the resource and relates it to the purpose of the fact sheet. She mentioned that it has a scroll on the front page, and that it uses bold letters to draw attention to HIV/AIDS related issues. She pointed out that the aim of the fact sheet is to create greater awareness of HIV/AIDS related matters amongst school going youth (assignment 4 part 2, pg. 2).

She also points out that the fact sheet provides information that will lead to behavioral change amongst students. This information is also meant to correct facts that have been misconstrued by the youth. She cites the following examples of misconceptions about HIV/AIDS:

- 1 If someone who is HIV positive has sex with a virgin he becomes negative.
- 2 If a person who is HIV positive drinks aloe herb the virus disappears. (assignment 4 part 2, pg. 2)

Philile believes that these are potentially damaging to the youth, hence she sees a need to provide correct facts to correct these misconceptions (*ibid*).

Philile acknowledges the relevance of the fact sheet to school health clubs and anti-AIDS clubs for addressing sexually related matters such as HIV/AIDS and teenage pregnancy, affecting school going youth. In her assignment she suggested that the fact sheet would be used within school health clubs rather than being incorporated into the formal school curriculum. She believes that under these conditions participation will be natural, and learning and behavior change will proceed faster. The fact sheet will be given out to club members to distribute to the other students or use. (assignment 4 part 2, pg.3). Her assignment further describes her interest in active learning processes, and ways of stimulating dialogue and debate amongst learners (as described in her presentation). She also describes how she will evaluate the

fact sheet (as described in her presentation), and identifies the following strengths of the resource as related to it providing more accurate and detailed information, and its intention to clarify misconceptions held by the youth. She sees a potential weakness of the resource being that it is 'narrow in scope' in the sense that it is merely an information resource. She does, however, intend to use it in a combination of other interactive learning processes (as described above).

4.4.6 Taking the assignment further: St Joseph's High School

Following the development and presentation of the assignment in the course context, I visited Philile at her school to conduct observations on how she was using the materials. The observation took place in the context of the environmental health club at the school. Philile started by introducing the topic of 'love and lust' and mentioned that it was a continuation of the last discussion they had had. The focus of the discussion was to look at the difference between love and lust and how it affects school going youth. She invited one student to start the discussion. (lesson transcript , pg.17).

One student noted that love and lust go together. Another student presented a different view that love and lust does not go together. She pointed out that one has to know the character of someone in order to love her. She went on to explain that lust is only for a short time and is normally associated mostly with appearances. Another student agreed with the first speaker that love and lust go together. He pointed out that in order to love one has to be attracted to that person first. (*ibid*).

Philile made a summary of their presentations and mentioned that it seems that boys believe that love and lust go together and girls feel that love is a process of appreciating the personality and character of a person, whereas lust is 'petty' or superficial. Nomphilo, a female student, followed up after Philile's comment and emphasized that lust and love are two different things (*ibid*). A male student then commented that boys know more about these love - lust issues. He pointed out that in order for one to love someone, requires 'going back' to establish whether it is possible to stay with that person (woman) for a long time, unlike lust. He emphasized that love has 'no colour and no shape' (*ibid*). Philile intervened and asked the students how love and lust issues relate to the HIV/AIDS epidemic especially among school going youth. A student responded by clarifying that lust has to do with wanting something for that moment whereas if you love a girl you would want to do it the right way. Noting that the students were not answering her question, Philile repeated the question on how love and lust relate to AIDS and requested another speaker to comment.

Another student responded by pointing out that lust leads to the escalation of HIV/AIDS because with lust you only need that girl for that moment and yet with love you can give the girl time to mature before engaging in sex, since love is patient, unlike lust. (*ibid*).

Philile then summarized the discussion as follows:

... I think yes, it is true. It [lust] does make people engage blindly in sex. Let's have another response by somebody else. You seem to all agree that love is patient. It goes deeper affecting somebody from within. You give the person time to mature and establish their career, whereas, lust is something of a short duration. Basically it's some form of selfishness. Of course it will spread the HIV/AIDS pandemic. Because people will love one another ... and what guarantee do you have that you will not do that on the following day after another person (Philile, cited in lesson transcript, pg. 19).

She then asked for another comment, following the summary. A student pointed out that when sexually engaged, you find that you are rushing and you forget to use a condom and you cannot be sure that you are protected. Philile thanked him for saying that and requested another speaker's comment. Another student supported the last speaker on that love and lust have a wide potential to spread HIV/AIDS because people believe that one expresses love with sex and that is the way AIDS is spread and the same applies with lust (*ibid*).

Sakhile, another student, commented that he found the discussion useful for them as students. He added that with the issue of love he thinks that even if you are in love you can still get HIV. He further wanted to know what one would do if he found that somebody he is in love with is HIV positive (*ibid*, pg. 20). The dialogue continued when another student pointed out that it is important that people do not lie about their HIV status and insisted that if you are married it is only the partner that will be infected. He indicated that engaging in sex early has more potential for spreading the virus (*ibid*). In response to Sakhile's comment, another student contended that before someone gets married they should have an HIV test, and if they are both negative the marriage can continue. If one of the partners is positive then obviously the marriage should not continue. There was laughter by the group. Another student argued that HIV positive people are part of us and should not be ignored. She added that even if one is positive people should continue to get married. The group sighed 'woops' in discontent (*ibid*).

Philile observed that the discussion was 'getting heated'. She summarized again, by noting that through the

dialogue, we have seen that love and lust does affect us when it comes to protecting ourselves against the HIV /AIDS pandemic. She suggested that students love rather than lust after their friends. She further commented that she liked what one of the students had said when she mentioned that they are not ready. She felt that the fact that the students are presenting so many conflicting views indicates that they are not ready to indulge in love relationships. She suggested that students love each other like brothers and sisters, but observed that some students were not happy about her suggestion (*ibid*).

Philile used the fact sheet for her own reference when conducting these club discussions. She assigned her students to go and do research on sub-topics relating to HIV/AIDS and related issues as indicated in an instruction where the students had been assigned to go research on the topic 'early indulgence in sex' (journal, pg. 12).

4.4.7 Further perspective on the assignment process and outcomes

When I asked Philile why she continually summarized what the students had said, her response was that she realized that students have more information than she thought and she thought they might come up with solutions as to how the problem of the pandemic may be solved. I asked her to reflect on how the course has influenced her practice. She stated that the 'social constructivist school of thought' had influenced her way of teaching, and went on to explain that social constructivist thinking puts forth that you can get a lot of information from the audience, the key people who are affected by that particular issue (Philile, pers. comm., 10/04/03).

I also asked if assignment four-development processes had contributed towards the way she was running the session. She answered, "Yes, of course that assignment really helped us... not to consider one way of doing things all the time, but many other possibilities as well"(*ibid*).

4.4.8 Summary of Philile's experiences in a praxiological course

The description above of Philile's experience of the assignment process (development and implementation) provides some useful insights. Philile came to the course with an interest in 'extra mural' activities in a school context. Her previous experience of extra mural activities with students appears to have been positive, and she feels that this is where 'more relevant' work can take place with students, given that the

atmosphere is less structured and 'more relaxed'. This is reflective of the context of education in Swaziland, where formal schooling is controlled by syllabi and examinations, and there is little space for educators to introduce other, often more relevant issues (see section 1.4).

She, in the context of the course, decided to develop a fact sheet in response to a very serious issue affecting the lives of the young students she works with, notably HIV/AIDS. In particular, she is concerned with socio-cultural misconceptions in the community, which she perceives to be dangerous for school going youth. In response to the issues of 'mis-information' about HIV/AIDS, she decides to develop a 'fact sheet' with more accurate information. She intends using this fact sheet in the context of her club activities. She undertakes research to develop her fact sheet. In this research process she draws up a questionnaire to explore what her students already know about HIV/AIDS and she also seeks expert advice and accurate information the issue. She uses this to compile the fact sheet.

Philile plans to use the fact sheet in process of 'active learning' in which she will encourage dialogue and debate amongst students; and build on their existing knowledge of the issue. She hopes that this process will lead to behavior change, and thus describes her educational practice as 'behaviorist'. She, however, indicates that social constructivist perspectives (introduced in the course) have influenced her practice, and there is some evidence of this in her practice.

In the lesson, she is trying to apply pedagogical processes that encourage dialogue, interaction and meaning making. She thus 'starts a debate' and encourages learners to contribute to the debate. She periodically summarizes the debate, and requests learners to take the debate further. However, she does not seem to make the most of the learning interactions, as she does not 'pick up' on any of the openings created by learners to challenge their perspectives. She does not, for example, challenge the blatantly sexist statements of a male student who feels that males know more about 'love and lust' than women; and thus misses an important opportunity to explore socio-cultural perspectives on HIV/AIDS issues in more depth. The lesson illustrates that she is trying to effect changes in her pedagogical practice, but it would seem, from her assessment of her own work as being 'behaviorist', but with evidence of social constructivist thinking on her practice, that she has not clearly grasped the full implications of the terminology which she applies to descriptions of her practice, and there is some evidence of this in her practice. This could be described as a 'praxis problem' in the sense that the ideas that influence her actions are somewhat 'confused' and unclear in her own mind. These challenges are not picked up in the course by tutors or other

course participants, as every one felt she had done an 'excellent job'. Thus, it would seem that the 'praxis problem' lies not only in Philile's own perception of her practice, but also in the course processes and the engagements in the context of the course.

4.5 Conclusion

This chapter has presented and described the opportunities for praxis within the assignment development process in the Swaziland course. This was done through a review of the assignment development processes, involving providing orientation to the assignment; working through the core texts and a number of supplementary readings; assignment presentation; assignment writing and assessment processes. To illustrate the kind of interactions in this process, I drew on the course experience of Mdluli, one course participant; and I observed interactions in the tutorial workshops. I also drew on the views of two course tutors.

Further dimensions of the assignment development process were explored through developing detailed 'constructs' of the assignment development experience of two course participants through providing a thick description of these experiences. This involved observation of how they used their assignment 'products' in practice and observations and probing of the ideas that inform and shape their educational practice. Both cases provide insight into issues of structure and agency and praxis (as outlined in Chapter 2). These descriptions of assignment development experiences also provide useful insights into the 'features of praxis' (as outlined in Chapter 2) and how these play out in the context of the Swaziland course. The next chapter will discuss these insights in more depth.

CHAPTER 5

PRAXIOLOGICAL PROCESSES AND ASSIGNMENT WORK

5.1 Introduction

In chapter four I described different course participant's experiences of assignment development processes in some detail. This chapter discusses the research findings in more depth. Chapter four findings have been further analysed through a second layer of analysis (see analytic memo in appendix 05) This analysis provides further evidence of the praxiological processes associated with assignment four of the Swaziland course. This analysis also draws on the constitutive elements of praxis in curriculum contexts (as outlined in section 2.4.2) to consider the praxiological processes associated with the assignment four development processes.

As can be seen from the descriptions in chapter four, the assignment four development processes in this course have enabled praxis through encouraging learning through real life experiences; encouraging action and reflection; and through deliberative processes in tutorials which foster the social construction of meaning. The research has further illuminated that implementation of the assignment 'product' or programmes and resources also support praxis-based processes. This chapter considers each of these 'constitutive elements of praxis' (see section 2.4.2) in the context of the assignment development process in the Swaziland course.

5.2 Learning through real-life experiences

Assignment four has been noted by Lotz (1999: 32) for being praxiological, allowing for participants to develop and implement learning resource material through praxis-based processes including basing learning in real life situations (see section 2.5.2). This research has also shown that assignment four development processes and participants' learning programmes and resources (the products of the assignment) indicate that learning in the course is based on real life experiences in context.

As noted in Chapter 2 (see section 2.5.2), a key focus of the Gold Fields courses (including the Swaziland

course) is the work-based assignment work. It is the work-based focus of the assignments that allow for learning based on real life experiences in context. At the time when this research was done participants completed their assignments following the assignment four instruction (see section 2.5.2). They developed learning programmes and / resource materials to support work in their field of practice addressing real life issues in context. For example, Mdluli, from Swaziland Komati Project Enterprise (SKPE) developed an environmental awareness programme for schools in the Komati Downstream project area, with his colleagues at work (see section 4.2). The programme focused on addressing problems affecting the agricultural community involved in the production of sugar cane in the area. Messiah developed a fact sheet aimed at addressing pollution near the pulp mill in his community (an issue that was affection the health and well being of the community) (see section 4.3) and Philile developed a fact sheet on HIV/ AIDS to address mis-information about HIV / AIDS issues amongst the youth (see section 4.4).

The focus on learning based on real life experiences in context is an important aspect of praxis in professional development as suggested by Robottom (1987: 297; see section 2.5.1.4). It concurs with the Freirean perspective of praxis, which holds that learning takes place in the “real not hypothetical world” (Grundy, 1987: 115). This aspect of the assignment work in the Swaziland course makes the assignment process praxiological.

However, it is not simply the ‘work-based’ focus of the assignment which fosters learning through real-life experiences in context. Observation of tutorial workshop processes and tutor interviews in this research has indicated that opportunities are provided in the assignment development process for participants to develop a deeper, more critical understanding of issues associated with their work context (‘real life experiences’) through *deliberations*, (for example the deliberations surrounding Messiah’s choice of assignment topic); use of *texts* (for example, Philile indicates how she drew on one of the readings to guide her materials development work), and through the *assignment development processes* itself (for example, Philile’s research that she undertook to compile the fact sheet). *Assignment implementation and participants’ experience in context* further foster learning based on real life experiences in context. In the next sections (5.2.1; 5.2.2; 5.2.3) I consider how assignment development processes fosters learning through real-life experiences in context (which I have identified as a key feature of praxis).

5.2.1 Deliberations, use of text and context

Evidence from workshop processes and tutorial presentations show that Mdluli, Messiah and Philile developed their programmes with the support of assignment orienting processes which included providing orientation to participants, deliberations and use of readings (texts).

From the reading and discussion of the paper '*Growing and Learning*' (see section 4.2), I observed that participants recognized the potential of participatory approaches for involving others in planning for the activities of the project and for the development of ownership, and commitment, as it responds to an identified need (journal, pg. 6). This text therefore, assisted course participants to consider the notion of context, by enabling them to deliberate the need to act in response to a problematic situation in socio-cultural context (see section 2.4.2.2). The paper indicated that awareness of a need has the potential to generate a commitment to respond to the problem at hand. For example, in the reading the most basic need met was the provision of vegetables for a student's feeding scheme at school. Grundy refers to this notion as 'social praxis' and she asserts that it takes place in the real 'not hypothetical' world, with people acting 'with' but 'not upon' others (see section 2.4.2.2).

Further evidence that attempts are made to focus on learning based on real life experiences came through interviews with course tutors. Nyembe, (pers. comm., 25/10/03) pointed out that "... the important thing about assignment four is that participants show understanding of their own context". He went on to explain that understanding context means understanding the issues and activities playing out in practice. Nyembe (*ibid*) raises further evidence that assignment processes aid understanding of context by stating that in the assignment processes participants reflect on what they learn from the course readings by discussing them relating to their realities. He explained that use of texts enrich learning by providing participants with opportunities to reflect in a deeper way on the concepts that are introduced, through considering how these concepts are 'emancipating' for participants in terms of their lives, jobs and engagement with social forces (*ibid*).

Mdluli, for example, showed understanding of the context of the Komati Downstream project in the development of the environmental awareness programme he developed in response to it. He indicates this understanding of context in the justification of his programme where he emphasized the need for the project to "... raise awareness and help children in the project area understand their context and be tolerant to

change" (workshop transcript, pg. 1). Mdluli also indicated understanding of context in the approach he employed to develop his programme. He stated that his programme development was very participatory, an idea that was shared during a discussion (see section 4.2). By that he meant that the people at the Komati River project area were consulted and they made their contribution. His assessment of the ambivalence inherent in participatory approaches (see section 4.2) provides further indication of his understanding of context, when he noted that not everyone was interested in participating in his project, but some merely wanted the resources. This challenged Mdluli to consider his earlier assumptions (which were guided by the reading in the course), and he was faced with the challenge of identifying relevant approaches to his project in context. This example concurs with the notion that environmental education practice is constrained by the theories and beliefs of those forming the structures in the field of practice (see section 2.5.1.2). While the SKPE programme developers idealized participatory approaches the community did not see the point in participating in the planning processes. Participation was not 'the practice' in the area, which created a challenge to the programme implementer (Mdluli) to develop a working theory relevant to that particular context.

Messiah also showed an understanding of context in his response to air and water pollution at Bhunya. He did that by considering political, economic and social issues surrounding the production of pulp and the resultant air and water pollution emissions from the mill. Evidence from Messiah's experience indicates that simply having an understanding of context may not be enough to meet or respond to contextual needs. Evidence suggests that the focus of Messiah's resource was to raise awareness amongst community members living and working near the mill. He wanted to inform people of policy issues surrounding air and water pollution (see section 4.3). Pollution of rivers and the atmosphere is one of the major environmental risks in the context of Swaziland (see section 1.3). Policy issues are critical and they relate to issues of governance. Of relevance to the surroundings of Bhunya are issues that relate to civil and traditional systems of governance in rural areas. Messiah showed his understanding of context by capturing the problem that government does not involve the traditional institutions when dealing with policy issues (see section 4.3). Consequently policy implementation becomes a problem. Through his resource Messiah seeks to conscientise community members on their right to a safe environment and through this, he hopes that they will become active in policy issues, which he sees as a way of responding to the air and water pollution problems (see section 4.3). Messiah's thinking appears to reflect a belief that the Swaziland political context is/ can be subject to historical change, from a culture of silence to a culture of dialogue on environmental issues. His beliefs seem to reflect some of the beliefs associated with the Marxian view of

praxis that focus on the notion of 'willed action' (see section 2.3). Through his educational programme, he aims to conscientise and influence people towards selective purposive behavior aimed at influencing policy implementation for pollution control. He confirmed this thinking during the interview when he stated that he would evaluate his resource by observing attitudes (see section 4.3).

What is interesting in Messiah's case, however, is the fact that he does not attempt to address the 'real cause' of the issue. He does not aim to change the behaviour of the industry managers, but rather the community members. His practice appears to be influenced by the sensitivities of environmental activism in a context where community members are dependent on the Bhunya company for their livelihoods, and he therefore seems to avoid direct confrontation with the industries (note his decision to change from a more confrontational poster to a fact sheet, described in section 4.3). This reflects some of the dilemmas associated with structure and agency within environmental education processes that take place in contentious complex 'real life contexts' where power relations create situations of disempowerment. In Chapter 4, I described this as a 'praxis problem' (see section 4.3).

These are, however not the only structural constraints that influence Messiah's work. Evidence from interview data suggests that Messiah experiences constraints emanating from the structure of the school system as an issue affecting the use of his resource, which may affect its purpose. He cited time for teaching environmental education in the timetable as one such problem (see section 4.3). Cornbleth (2000:2) stated that education and curriculum matters are political in nature (see section 2.4.1). In the Swaziland system, such politics are associated with the fact that environmental education is not examinable in the schools. Hence examinable subjects and specifically prescribed cultural activities have a priority over environmental education work in schools (4.2).

There is no indication in the implementation process showing that Messiah's students or the community he originally intended to influence will get to a stage where they will take action as he articulates in the aims of the resource. It would therefore seem that structural constraints such as the governance system and the power of the industry in the community context; as well as structural constraints in the schooling system have all influenced Messiah's 'agency'; or ability to foster change in the way he anticipates. Added to this is the 'misfit' between Messiah's approach to education, which reflect traditional behaviorist assumptions (Hungerford & Volk, 1991) and his aim to foster community based action. It would seem that, despite transformation aims, Messiah's educational practice is in itself not transformational, and it seem that he did

not explore other approaches such as action research and community problem solving or action competence approaches to his educational practice in the course (Swaziland course file, 2002), despite his strong passion for community action in response to the issues he highlights (see section 4.3). Learning through real life experience in context would seem to require different educational practice that is contextually appropriate in relation to the educational aims.

Philile also responded to context by producing a fact sheet on sexually related matters and HIV/AIDS issues among teenage students at her school, in response to misconceptions about HIV/AIDS and behavior change (see section 4.4). To deepen her understanding of context she collected information from students through research in her first assignment where she states that she wanted to know how much the students knew about HIV/AIDS, newspaper articles and she consulted SHAPE, an NGO dealing with HIV/AIDS issues (see section 4.4).

She also considered students' knowledge or understanding of context when she implemented her resource. She allowed for a discussion where students drew from their experiences to collectively understand the situation about HIV/AIDS related issues among them (see section 4.4). Thus in Philile's case, it seems that an understanding of context in educational praxis requires consideration of the issues arising in a particular context (such as the misinformation); consideration of students' prior knowledge and other available information as well as a process of engaging with students' knowledge and experience during the learning process. All of these processes appear to be important in learning based on real life experiences in context.

5.2.2 Dimensions of learning based on real life experiences in context

The discussion above has highlighted the many dimensions of learning based on real life experiences in context, which is a key feature of praxis. Real life learning in context involves focussing on issues or needs that arise in work-place based or community settings. However, it seems that it is not only the focus of the assignment which is important, but that it is also the interactions with people, text and context that provide for learning based on real life experiences in context. Evidence in this study has illuminated that readings provide orientation to this learning, but that engagement in context requires participants to evaluate the assumptions in the readings (as in the case of Mdluli). Deliberations in course sessions also assist with learning based on real-life experiences in context, where participants are challenged to think about the appropriateness of their choices in relation to their aims (as in the case of Messiah).

Praxis-based assignment work appears to require more than just an understanding of context to ensure learning based on real-life experiences, it also appears to require careful engagement with issues of structure, agency and power (as in the case of Messiah); and a consideration of appropriate pedagogical processes relevant to the aims of the resource or programme (as in the case of Messiah). Philile's case illustrates what some of these pedagogical processes may involve drawing on learners' prior knowledge and creating opportunities for them to share their knowledge and experiences in interaction with each other.

Thus it would seem that learning based on real-life experiences in context is an important feature of praxis-based assignment work. From the above, however, it would seem that there are a number of dimensions to this feature of praxis-based assignment work. I turn now to a discussion on another feature of praxis-based assignment work, notably action and reflection.

5.3 Action and reflection

Socially critical educators assert that praxis in curriculum denotes practice that constitutes action and reflection. It is an active process involving planning, acting and evaluation leading to professional development in environmental education (see section 2.4.2.1). This notion highlights that praxis is a process rather than a product. This research has also indicated that the development of programmes and resource materials by participants involves a process of action that supports reflection on theory, their actions, and experiences which include reflection on socio-economic and political factors in the environment. Nyembe (pers. comm., 25/10/03) stated that assignment four processes enrich learning by providing participants with opportunities to reflect on concepts learnt in the course and how they are 'emancipating' for participants in their engagement with social forces. Observation of assignment development processes revealed a number of opportunities for the development of action and reflection, which are key to praxiological processes.

5.3.1 Orientation to assignment four

There is evidence in section 4.2 that the orientation to the assignment four process supports action and reflection processes, by providing ideas which participants can apply and reflect on as they do their assignment. A further assignment strategy that aims to foster action and reflection is the introduction of the

reflexive journal (see section 4.2). Participants reflect on the theoretical ideas presented by tutors as they work through the assignment development process (see section 4.2). For, example Mdluli reflected on the notion of context in the justification of his programme and identified relevant concepts for the local community to engage with, in relation to the issues he was trying to address.

Dlamini (pers. comm., 30/10/03) identified the journal as one of the key features of assignment four processes. It is where participants show how the resource was developed, allowing for reflection in action. Evidence was presented in part two of assignments that participants had, in fact, engaged in action and reflection processes in the development of their assignments (see sections 4.3 and 4.4.). For example, Philile was able to describe and reflect on the processes she undertook to develop the resource; on the appropriateness of the information provided to her; and on the strengths and weaknesses of her assignment.

Another dimension of the assignment development process that fosters action and reflection, is the processes of engaging with texts (see also section 5.2 above). In an interview Nyembe (pers. comm., 25/10/03) indicated that participants reflect on ideas they learn in the course through readings, in a process involving research, dialogue and interrogation of readings and ideas during assignment development. Through this participants "... attain a deeper understanding of the ideas and personal growth" (*ibid*, see section 4.2 and 4.4). A case example has been provided above in relation to Mdluli's engagement with readings in the course, and how this influenced his practice. The case example illustrates that Mdluli was able to reflect on the texts, in context. Philile also indicated during the presentation of her resource and also in her assignment that she reflected on theoretical ideas and information she got from text when she wrote her assignment (see section 4.4). She acknowledged that her students also reflect on text when they engage in discussions and debates, when she stated that her fact sheet will provide information to reflect on (see section 4.4). According to Grundy (1987: 104) theory and practice have a reflexive relationship. Grundy further states that knowledge builds upon theory in the process of action and reflection. The above findings therefore indicate that assignment four readings support the learning of the participants, and allows them to engage in reflection on / and in action, and thus enables them to try out new ideas, and do things better. It seemed from the readings that were utilized, that readings which share experience of other peoples' practice (for example, the reading on the school feeding scheme vegetable garden project and the reading on the materials development process in Zambia) were both well utilized and both stimulated action and reflection. There are other readings provided for this theme in this course, but it seems that the other

readings did not carry as much significance.

5.3.2 Action and reflection in assignment writing and presentation processes

Evidence provided in chapter four indicates that participants engage in action and reflection as they write their assignments and during assignment presentation and discussion, and this reflection supports changes in thinking and practice. For example:

- 1 Messiah reflected on the political context of Swaziland when he considered policy development and implementation issues discussed in his resource. He gave a historical view of policy processes involving consultations responsive to policy problems (see section 4.3),
- 2 Messiah reflected on the activities and experiences of people involved in air and water pollution issues during his research process (see section 4.3),
- 3 Both Messiah and Philile reflected on previous assignment discussions for improving their resources, involving changes from posters to fact sheets in response to issues raised about the context in which their resources would be used (see section 4.3 and 4.4),
- 4 Philile reflected on the quality of the information she was gathering for the compilation of the fact sheet (see section 4.4) and she also reflected on the strengths and weaknesses of the fact sheet as a resource (see section 4.4), and
- 5 During a discussion one participant indicated that she keeps reflecting on the assignment instruction as she develop the assignment, by advising another participant to check with the last part of the assignment instruction (see section 4.2).

In all these cases participants reflected either on their experiences and their actions or other peoples' actions in developing their assignments through different processes as they strive for improvements in their particular projects, and in response to environmental and educational issues participants were dealing with. Grundy (1987) claims that whatever we do is informed by some kind of thinking emanating from our past experiences (see section 2.4.2.1). This notion holds that the past has both positive and negative

experiences and we capitalize on the positive to shape our action towards future developments. In this sense the assignment development processes offers opportunities for participants to improve their professional practice in environmental education through action and reflection. From the above examples of reflective activities observed in the course, it would seem that this involves reflection on contextual issues, educational issues and practice as well as reflection on the processes of assignment development. These reflective processes appear to assist participants with adapting to challenges through changing their actions.

Praxis in the curriculum context of the Swaziland course is a response to the complex environmental issues and risks that participants are grappling with in diverse contexts (Lotz, 1999). The intention is that this curriculum feature of the course will provide a challenge to technisist education that seeks to produce a society that is defined by the objectives of curricular that is dictated by the State, and which does not allow for meaning making in context. Praxis in this curriculum context is focused around the idea of reflection as Edwards (1997) locates it in the discourse of professional development in adult learning (see section 2.4.2). What makes it relevant here is its potential for education processes that enable diverse responses to complex environmental issues as described by in section 1.3 and by authors such as Beck (1992), Lotz and Robottom (1998) and others.

As indicated above participants' experiences show instances of action and reflection. These are mainly situated in the realm of *educational praxis* (engagement with educational practice). There is, however, a clear link to *environmental praxis* (engagement with the way in which educational practice will address environmental issues). Reflections associated with the latter appear to be mainly focussed on the processes involving the identification of the issue to be addressed by the educational process. The link between educational praxis and environmental praxis appears to be a complex terrain. Attention is given to *how educational practice* is addressing environmental issues, but this appear to be hampered by behaviourist assumptions and failure to explore other educational orientations which may be more appropriate, such as action-centered approaches in environmental education (in the case of Messiah) and by some confusion associated with behaviourist and constructivist approaches (in the case of Philile). Mdluli also engages this relationship between educational praxis and environmental praxis when he reflects on the ambivalence of the participatory approach he adopted. In both Philile and Messiah's case, I was able to establish that they were able to reflect on the implementation of their assignments (in the follow up interview), but it seems that their reflections were more limited to the actual educational activity, rather than the broader environmental

praxis issue which their educational projects are aimed at addressing (see section 4.3 and 4.4).

One area of educational praxis that was not fully utilized in the Swaziland course is the aspect of assessment. In my view this process has not been maximized to encourage action and reflection. The assessment of assignments in the course is described by Janse van Rensburg and Le Roux (1998: 31), Lotz, 1999 and by Raven (2000:93) as a process of learning involving action and reflection processes (see sections 2.5.2 and 4.2). The assessment process requires participants to submit more than one draft of their assignment, and tutors comment on the assignments, using a questioning orientation. In the Swaziland course participants submit three assignment drafts. Participants (peers) and tutors both read the assignment drafts and make comments for the writer to improve his/her work by considering the comments. This process means that besides learning from the processes already described, participants also learn to write their assignments by reflecting on tutors' and other participants' comments as well as their own mistakes as individuals.

Evidence of assessment process associated with the two case study participants in this research indicates that that assessment has not been fully maximized as a learning process and one could therefore conclude that participants' reflexive competencies have not been enhanced as per the expectation of the course orientation (see section 2.5.2). Although one participant cites having produced several drafts in her presentation; an analysis of the assignment text indicates that they are deficient of comments. Raven (2000) made a similar observation on assessment of assignments, though she was not specifically referring to assignment four. She concluded that participants and tutors had not fully understood the concept of reflexive competence. However, I feel even if the concepts of reflection and reflexive competence were not understood, participants would benefit from the process if they have time to write and rewrite the assignment, aiming at targeting producing more than two drafts in line with the course orientation. They would have undergone the important praxiological process of 'thinking and re-thinking practice' leading to better practice noted by Raven (2000: 93). Also, by observing negotiated assessment criteria, the assessment process would have further allowed for improved praxis. As seen in the descriptions in section 4.2 this was not done in the Swaziland course. It would seem that contextual factors surrounding issues of assessment in this case have to be explored further.

The above has illuminated that there are different dimensions associated with action and reflection in praxiological assignment processes. Action and reflection is seen to be an important feature of praxis (see

section 2. 4.2.1). This study has revealed that in environmental education, this involves action and reflection associated with educational praxis; and action and reflection associated with environmental praxis. The challenging area however, seems to be action and reflection on the *relationship between* educational praxis and environmental praxis, as shown by Messiah's case in particular where his educational praxis seems to be limited by behaviorist approaches to education, and by structural constraints. He thus seems unable to address environmental issues in the way he anticipates through his educational project. I turn now to another, related feature of praxis namely processes of meaning making.

5.4 Processes of meaning making

The phenomenological perspective of praxis holds that meaning refers to the content of the mind that includes such acts as perceiving and remembering, amongst others, that directs our actions (see section 2.2). According to Grundy (1987: 105) meaning making is a praxiological process. Berger and Luckmann, (1967, cited in Janse van Rensburg & Lotz Sisitka, 2000: 12) contend that meaning and knowledge is socially constructed by humans through interaction in socio-cultural contexts. In the curriculum context, Grundy (*ibid*) asserts that meaning making is central to knowledge and that knowledge is a social construction (see section 2.4.3). Being a praxiological process, meaning making therefore involves knowledge creation through interaction involving reflection on- and within socio-cultural contexts.

This study has revealed that the whole process of assignment four development, including orientation to the assignment, interaction with texts, and assignment presentation and writing involves the construction of meaning through interaction in the socio-cultural context.

5.4.1 Meaning making processes in workshop interactions

The orientation to the assignment involved a lecture (see section 4.2) allowing for interaction in the context of the course. Nyembe (pers. comm., 25/10/03) asserts that the orientation to the assignment is a necessary process because it is where "... tutors and participants come to an understanding on the assignment requirement". Dlamini (pers. comm., 30/10/03) also acknowledges the importance of the assignment orientation for "... putting together the differing human perceptions to ... focus [on the] assignment instruction". The use of real life examples within the lecture indicated a process of reflection on the Swaziland education and environmental context (see section 4.2). The lecture on the research journal

encouraged reflection amongst participants on the process of assignment development. All these features of the assignment orientation are characteristic features of meaning making in context as discussed in section 2.2, 2.4.2.4 and 2.4.3. Interaction was allowed through sharing of ideas from the core text and personal experiences through the use of language in the meaning making process. Of significance, seems to be processes required to establish 'a common understanding' of the assignment development process.

It was evident from the discussion of readings that participants interact with the reading and construct meaning from their understanding of the text (see section 4.2, 5.2 and 5.3 above). Ideas from the readings were discussed with reflection on the socio-cultural context and participants even suggested some changes to the ideas presented in the readings, based on their observations and experiences of their realities. For example, one participant suggested that for development programmes to be sustainable they should be needs based, because that is what she found to be supportive of project sustainability in the reading (see section 4.2). Such suggestions and comments show that participants make meaning of the readings, in discussion with each other, through considering the readings in relation to context.

Assignment presentation and discussion processes in the workshops, also indicated instances of meaning making in context among participants. On presenting the assignment ideas participants make a contribution to collective meaning making in the course. They present the meaning they are making of the reality they are responding to through their assignment programme or resource material. The meanings they present are shared and deliberated in discussions with the rest of the group, who collectively reflect on the contextual relevance and significance of the proposed ideas. When interviewed on the importance of assignments Nyembe (pers. comm., 25/10/03) commented on the development of competency through the understanding of key concepts in the course and that assignments help provide evidence that participants have learnt (see section 4.2). He also mentioned that assignments allow for the sharing of ideas that have been developed in the course (see section 4.2).

Assignment presentations also provided evidence that assignment development process by individual participants is an important meaning making process in the course. In his assignment presentation Messiah described a research process that allows for reflecting on the socio- economic and cultural context to arrive at an understanding of the situation (see section 4.3). Through this research process he wanted to confirm his already existing perception of the pulp mill as a cause of air and water pollution in his area by arriving at a new meaning of the situation. He also arrived at a new understanding of the situation when co-

participants critically commented on his idea of producing a poster, which caused him to change his response to the situation to a fact sheet (see section 4.3). This case demonstrates the potential for assignment discussion to facilitate changes in one's perception of reality through interacting with others reflecting on the socio-economic context. This appears to be an example of what Grundy (1987: 115) refers to as 'social praxis' in section 2.4.3.

Philile's assignment presentation also indicated a meaning making process through critically reflecting on assignment development processes and the social context. She stated that she used ideas from Lupele (2003) on resource materials development, articles from library materials as well as non-governmental organizations involved in social issues. She contends that the idea of the fact sheet was conceived after several discussions that resulted to her producing a fact sheet rather than a poster (see section 4.3).

As indicated in the discussion above about the difficulties experienced by Messiah to use his resource in the way he envisaged it, and the evident confusion surrounding the educational explanations of Philile's work, it would seem that further meaning making interactions surrounding the *educational orientation* of the two course participant's work may have been useful in fostering improved praxis. It would seem that additional meaning making interactions associated with developing better understandings of appropriate educational approaches (such as action research and community problem solving or action competence approaches) would have been useful to participants (particularly Messiah).

The above discussion of meaning making as a constitutive element of praxis (see section 2.4.2.4) provides evidence to conclude that the assignment development process is praxiological. The evidence also indicates that while many opportunities for meaning making do exist in the course, there are some areas where additional opportunities for meaning making could be created in response to the educational plans of participants. The next section provides further insights into praxiological processes associated with the field of work where participants implemented their work-based assignments.

5.5 Praxis and practice (implementation)

The assignment four brief requires participants to develop a programme or resource of relevance to their workplace (see section 2.5.2). It does not actually require them to use the resource and report on its use in practice. However, the intention of the assignment is clearly to encourage participants to develop materials

or programmes intended for future use. From the literature I reviewed on the Gold Fields course it transpired that some former participants in the course have implemented their programmes at their field of practice but few have focused on implementation of environmental education programmes in the formal system of education, in the context of classroom practice. The two participants chosen in this study, were both school teachers, with a strong passion for, and interest in environmental issues (see 4.3 and 4.4).

This study has revealed some interesting findings associated with educational praxis and environmental praxis and the relationship between the two (see section 5.2, 5.3 and 5.4 above). In both Messiah and Philile's cases, implementation constraints were experienced. They both provided evidence of teachers' potential to adapt to implementation constraints in their field of practice, through the understanding of the context in which they teach. Messiah used the strategy of infusing environmental education processes into his teaching subjects and Philile used the strategy of implementing her programme through extra mural activity.

Evidence of praxiological process at implementation level, involve learning based on real life issues as discussed in section 5.2. Both participants conducted research in their field of practice to inform their resources and programmes. They were therefore able to conduct learning sessions based on programmes that respond to current environmental concerns. The methods used in teaching and learning involved meaning making processes centered around reflection on socio-economic, socio-cultural and political issues in context. Messiah conducted a lecture and group discussion where his lecture and students discussion points indicated reflection on context (see section 4.3). However, as noted earlier, Messiah's particular orientation to his learning programme and materials did not allow him to engage with more action centred pedagogies. Had he informed his programme through engagement with action research and community problem solving approaches or action competence methods (for example), the meaning making processes may have been very different, and may have moved beyond classroom-based reflections on socio-economic and political issues.

The praxiological processes she went through during the assignment development process appear to have influenced Philile's implementation of her programme. Drawing on her fact sheet, she conducted a group discussion with the anti-AIDS club, which allowed the students to reflect on their experiences of HIV/AIDS related matters in meaning making interactions. When I interviewed her after her lesson, she stated that her practice with the students was influenced by the "...social constructivist school of thought", an idea she

encountered in the course (see section 4.4). Her choice of approach was based on the assumption that she could get a lot of information to reflect on from the people who are affected by the issue under discussion (see section 4.4.). She also indicated that the assignment development processes helped her consider many other possibilities in her work. Evidence suggesting that she considered other possibilities is the fact that she chose to use the materials in an extra mural activity, which she believed would be more effective when the students are relaxed and entertaining themselves at club level, rather than when they are 'constrained' in the formal classroom setup. This reflects some aspects of Beck's (1992: 2- 3) thesis of reflexive modernization where he claims that at a 'certain level' of modernization agents become decreasingly constrained by social structures. Giddens (cited by Karspersen in Underson & Karspersen, 2000: 380) complements this notion when he asserts that agents have tacit knowledge that allows them the potential to release themselves from structural constraints and change their patterns of action through 'discursive reflexivity' on their action; thus introducing the notion of reflexive agency (see section 2.3). This finding illuminates that there are different ways that can be explored in different contexts through which praxiological environmental education processes may be allowed to take place within the structure of the school system, besides infusing it within the examinable subjects, like Messiah does, but that this requires a 'reflexive agency' on the part of the course participant / educator.

In spite of this, Phillile seemed to have some difficulty describing the approach influencing her work. Evidence of her experiences in the course indicated that she associated her work with the behaviorist orientation (see section 4.4). Despite this, her approach appears to be much more constructivist than behaviourist in orientation (she mentions during an interview that she is influenced by social constructivism). She draws on students' prior-knowledge in developing the fact sheet and peer educational processes in the open-ended discussions and dialogue, which students engage in, with her only drawing a summary of the issues they discuss. She also emphasizes a free teaching and learning atmosphere where the children are relaxed, which is not behaviorist in intent (see section 4.4).

Messiah implemented his programme on air and water pollution at Bhunya. Industrial pollution is an issue of concern in Swaziland because it creates a risk situation since most rural populations use hard water from rivers as Messiah mentioned when he introduced his lesson (see section 4.3, and section 1.3). His interview response indicated that the praxiological assignment development processes helped him in many ways including planning and directing the focus of his programme (see section 4.3). Planning is an important aspect of the process of praxis as defined by critical education thinkers (see section 2.4.2.1). Although

Messiah cited problems that relate to the structure of the school system, he was able to engage in environmental education processes through infusion into the examinable subjects that he teaches. He managed to expose students to meaning making interactions, in which they were able to deliberate on environmental issues and relevant responses in context. For example, policy development processes that will involve all sectors of the society including civil and traditional institutions was one of the dimensions of these deliberations (see section 4.2). When he introduced his lesson he drew the children's attention to contextual factors including that many of their parents were working for the mill and that they use the river for different purposes including drinking, bathing and other domestic purposes. He intended to help consider the contextual dimensions of the issues under discussion. Although he was critical in his presentation the students' discussion did not show any critical consideration of the points because they presented the same points he had presented to them, both in his summary and in his assignment (see appendix 03).

As indicated in section 4.3, there appears to have been a 'disjuncture' between Messiah's intentions, and his actual educational practice which seems to be linked to the theory guiding his practice, an issue that was revealed at implementation level, as well as during deliberations on the assignment in the workshop sessions. He intended to facilitate social change by developing and implementing a poster in the behaviorist orientation.

These cases of 'misfit' in theory and practice in participants' assignment work provides some evidence that the course processes appear to create praxis problems for teachers by oppositionalizing approaches to teaching and learning without understanding the processes involved in each approach in enough depth. It also seems that the deliberations in the course are more focused on the environmental / contextual deliberations, than on the educational deliberations, and the relationships between educational and environmental praxis.

5.6 Conclusion: 'Praxis problems'

The study has considered the praxiological processes associated with assignment four of the Swaziland course, with a focus on how praxis 'plays out' in the course context and in the field of practice of course participants. Drawing on the course processes profile and the constructions presented in chapter four, this chapter has provided a more in-depth analysis of the assignment development processes, as they relate to

the constitutive elements of praxis in curriculum contexts (as outlined in Chapter 2). The study identified that learning through real life interactions was an important focus of praxis-based assignment work, but that there are different dimensions of the process of learning through real life interactions. The study also identified that there are a range of action and reflection processes at play in praxis-based assignment work, and that various opportunities exist for meaning making through the assignment development process, not all of which were fully utilized. The study identified further that praxis in assignment work at the implementation level (where the assignment 'products' are used) is crucial to deepening an understanding of the praxiological assignment processes.

Some issues that were raised in this chapter, relating to the above key findings, include the fact that although the assignment development processes supports the development of some aspects of praxis among participants there are still problems with assessment, participants' understanding of their own educational practice and structural constraints in their field of practice.

This research revealed that some of the processes related to assessment and assessment criteria are not given much attention, yet they are important for sustaining and enhancing the praxiological process in professional development.

A further 'praxis problem' that arose in the study relates to the participants' understanding of their own educational practice. In the case of (Messiah), this led to the development of an educational programme that did not enable him to achieve the outcomes that he intended; and in the second case (Philile) it led to a somewhat 'confused' description of her own practice. This issue was identified as being important in environmental education work, where educational praxis and environmental praxis are closely related. It would seem from deliberations in the course, that issues associated with better clarification of *educational praxis* in context were not adequately engaged in the course processes, particularly as these relate to *environmental praxis*.

The study also revealed that participants also face structural constraints in the field of practice when implementing their programs. These structural constraints are political, socio-economic and socio-cultural (as articulated by Messiah and Philile) and educational (as experienced by both Messiah and Philile). However, it seems that an understanding of context helped them find ways of implementing the programmes in their *educational* settings, thus showing some evidence of reflexive agency. In confronting

the structural constraints caused by political, socio-economic and socio-cultural forces, however, it seemed that participants' reflexive agency was less visible (although intentions for such agency were clearly articulated by Messiah). Further research would be necessary to clarify these emerging 'praxis problems' - problems encountered the context of the assignment processes and ways of strengthening reflexive agency of participants, not only in response to the structural constraints in schools, but also in broader society.

In the next chapter I summarize study briefly, and reflect on the research question in relation to these findings. I make recommendations to inform course developers; tutors and course participants in the Swaziland course, and I briefly review the research methods and processes I applied in this study. The next chapter also makes recommendations for further research.

CHAPTER 6

SUMMARY OF FINDINGS AND RECOMMENDATIONS

6.1 Introduction

This chapter provides a brief summary of the research. It provides a summary of the findings in relation to the research question. In this chapter I identify instances of praxis and problems associated with praxiological processes in assignment four development and implementation within the constitutive elements of praxis. I further make recommendations to enhance praxiological assignment work on the basis of these findings. These recommendations are intended to enhance professional development processes in environmental education in the Swaziland course, and in the SADC region.

6.2 Summary of the study

This summary provides findings of the research in relation to the research question, which is to find out how praxis is fostered in professional development processes through assignment four of Swaziland course in environmental education. As indicated in Chapter 1, this course is a professional development course in environmental education adapted from the South African Gold Fields course. This course was implemented in Swaziland in response to complex environmental issues and risks, in the context of authoritative education structures that frustrate changes in education towards responding to context in its complexity.

Environmental issues in Swaziland appear to be superficially defined and because of lack of qualified personnel in environmental education and a curriculum that is inclined towards colonial examination structures, environmental education processes are not enabled. Hence a course of this nature was meant to better prepare educators to act responsively in addressing environmental issues in context.

A key focus of the Swaziland course is praxis-based assignments, an important feature of the course that seeks to relate theory to practice through reflection in context. My research focus is on assignment four of the course, which seeks to enforce the development of praxis (as defined in section 2.5) through development of environmental education programmes and learning resources in response to real issues

and problems that participants encounter in their work context. This research investigated praxis through the assignment four processes and products in the course participants' field of practice. It sought to find out how praxis is fostered in professional development processes through assignment four of the Swaziland course in environmental education. To address this question, I critically reviewed assignment four processes against the course orientation by observing interactions during tutorial workshops, and in the workplace of two course participants.

As outlined in Chapter 2, the understanding of praxis in this research draws on different perspectives on praxis, which provided me with the conceptual 'lenses' to investigate praxiological processes during the assignment four development and implementation process. In Chapter 2 I indicated that the concept praxis entails steering ideas that denote conscious practice, centred on reflexive thinking in action, in the process of meaning making in context. Perspectives of praxis considered for this research are the phenomenological, critical modernist and sociological perspectives. The phenomenological perspective focuses in the potential of the mind for directing actions through conscious meaning making processes that feed on our perceptions of reality (see section 2.2). The critical modernist perspective draws from critical social theory advanced by the Frankfurt school. Its main subject is enlightenment and empowerment, seen to have a potential to foster personal and social emancipation from ideological domination (for example, false consciousness) (see section 2.3 and 2.4). Critical modernist thinkers focus on the broader social system and how its structures impinge on agency in practice (see section 2.3). They recommend praxiological processes of social change in response to power relation issues dealing with structure and agency in society. Sociological perspectives on praxis provide the tools to understand the way in which context and contextual factors influence structure agency relationships, and the work of Giddens illuminates that reflexivity in actions responding to real life issues is significant in social change processes. Learning is seen as processes of change and reflexive learning processes as illuminate the potential of agents to change their actions by having 'tacit knowledge' and the capabilities to respond reflexively in context (see section 2.4.1).

In Chapter 2 I also outline the relationship between praxis and education, and draw on the work of Grundy (a curriculum theorist), who draws on critical social theory in her suggestion for praxiological professional development, which she adapts from Freire's notion of praxis, developed to establish a different frame for adult learning in the 1970's. Through this, I identified features of Grundy's (1987) constitutive elements of praxis (based on Freire's work) in the orientation of the South African Gold Fields Course (which are also

reflected in the orientation of the Swaziland course). The guiding principles of professional development are situated within constructivist thinking, which bases learning on acting in response to real life issues in the cultural context, through processes involving reflecting on both action and social structures for meaning making, to direct change.

The study has also been influenced by constructivist assumptions, which made me consider the views of participants, tutors and my own perspectives in the research methodology I chose. I have used a naturalistic / qualitative enquiry approach to investigate praxis in the assignment development processes in this research; involving observing instances of the principles of praxis in assignment four development processes, interviewing tutors and analysis of assignments including assignment four and the pre-course assignment (see Chapter 3). Validity and trustworthiness of the research findings is inherent in the data collection methods and analysis, and ensured through self-reflexivity, member checking, triangulation and through providing a 'thick description' of the events that occurred (see sections 4.2, 4.3 and 4.4).

The study employed two layers of analysis. The first layer of analysis involved establishing a course processes profile (section 4.2) related to the assignment development process and profiles of two course participants experiences (see section 4.3 and 4.4) in the assignment development processes, and assignment application in their work places. The second layer of analysis involved developing analytic statements that provided a deeper insight into the praxiological orientation of the assignment and how it plays out in practice (see appendix 05). The findings are summarized below, and recommendations are made to enhance praxiological assignment work in the Swaziland course, particularly as this relates to assignment four.

6.3 Recommendations to enhance praxiological assignment work

The findings discussed in chapter five highlighted opportunities and problems with the development of praxis in assignment development processes and implementation of the assignment 'product' in the work contexts of participants. Key themes, which are also praxis opportunities that were found through this study include learning through real life experiences in context; engaging in action and reflection processes and engaging in meaning making processes. Praxis problems were also identified (and summarized in section 5.6). These praxis opportunities and praxis problems form the focus for the development of recommendations in this study.

6.3.1 Learning through real life experiences

It was revealed through this study that learning based on real life experience is an important aspect of praxis in professional development. It is important for the understanding of context and establishment of a needs based focus for environmental education praxis. The course, through the assignment four process creates numerous opportunities for learning through real life experiences as indicated in the discussion in section 5.2. Through the assignment instruction (see section 2.5.2) and the assignment processes participants developed programmes that were meant to respond to real issues affecting people in the participants' in the work or community contexts. This brings participants into interaction with reality which is important in environmental education, where issues are complex, contingent and diverse (Lotz, 1999; Lotz & Robottom 1998; Beck 1992).

This study further indicated that assignment processes based on real life issues aid understanding of context, when participants have opportunities to deliberate and reflect on real issues affecting them in their work / community context, during assignment presentation discussions. This is aided by engagement with texts that share experience from other contexts (for example, the Lupele, 2000 and Sisitka, 2000 texts). This study recommends that these deliberative opportunities (between tutors and participants, and participants and participants, and participants and texts) should be maintained and strengthened in the context of the course processes.

Implementation of assignment 'products', the resources and programmes that course participants develop in their work contexts further deepens understanding of context through experiential learning, that is, participants experiencing real contextual problems when implementing the products. I observed that this aspect of the assignment aids praxis through engagement through real life experiences of reflecting in context when embarking on action. The course currently does not 'expect' participants to apply their resources in context, and this study recommends that course co-ordinators consider this when re-working the assignment brief, particularly in the light of the relationship between educational and environmental praxis that emerged in this study. Raven (2003) has identified a similar recommendation for the further development of reflexive competence in the context of the Gold Fields course.

6.3.2 Action and reflection

Evidence stated in section 5.3.2 indicates that participants engage in action and reflection as they write the assignment and during the assignment presentation and discussion, which supports changes in thinking and practice advocated for by Robottom (1987) (see section 2.4.1). Section 5.3.2 show that participants in this research reflected on their experiences, their actions and other people's actions in developing their assignments. Grundy (1987) claims that whatever we do is informed by our past experiences. In this sense action and reflection offers opportunities for participants to improve on their professional practice. Here reflexive processes appear to help participants adapt to challenges through changing their actions for the better. Beck (1992) and Lotz and Robottom (1998) recommend reflexive learning processes involving action and reflection in context for enabling diverse educational processes that are responsive the complexity of environmental issues.

However, most of the action and reflection in this study, was concerned with either reflection on environmental issues and risks, *or* educational practice. There was little action and reflection on the way in which educational practices (or approaches to education) contribute to environmental praxis, making it difficult for participants to utilize different educational approaches responsively in relation to the environmental issues and risks they were trying to address (particularly evident in Messiah's case). This 'disjuncture' between environmental and educational praxis is an important finding in this case study. I have further elaborated and made recommendations on it under 'praxis problems' in section 6.4. Action and reflection is also pivotal for meaning making processes by engaging one in interaction in its processes as indicated by the findings in the next section (see section 6.3.3). This study therefore recommends a more careful consideration of action and reflection processes in the Swaziland course.

6.3.3 Meaning making processes

This study has also revealed that the whole processes of assignment four development, including orientation to the assignment, interaction with text and other participants during assignment presentation and discussion as well as assignment writing involves meaning making through interaction in the socio-cultural context (through action and reflection in context). I have concluded in section 5.6 that there are 'praxis problems' identified in this research, for example, the 'disjuncture' between educational and environmental praxis, which seem to relate to understandings of educational practice (as shown in both

Messiah and Philile's cases), and has implications for understandings of environmental *education* as a response to environmental issues and risks.

My discussion on meaning making in section 5.4 indicates that all the features of the assignment orientation, drawn from Grundy's (1987) constitutive elements of praxis, contribute to meaning making through interaction in the socio-cultural context. It concurs with Janse van Rensburg (1993: 283, cited in Lotz, 1999), in which a praxiological approach to environmental education "... engages with the social construction of meaning..." (see section 2.4.3). The discussion in section 5.4 also indicates that although there are many opportunities for meaning making in assignment four development there are areas where additional opportunities for meaning could be created to limit 'praxis problems'. It highlights that further meaning making opportunities could have been created to assist Philile and Messiah in exploring their understandings of their own educational practice in more depth, particularly as this relates to the aims of their programmes.

This study recommends that further meaning making opportunities be created by tutors and course participants in the Swaziland course to explore their understandings of educational theories in more depth, particularly as these relate to the way in which participants aim to respond to environmental issues and risks in context. The study also recommends that tutors and course participants continuously reflexively review the meaning making opportunities that are being created on the course in relation to the intentions of the assignments and the contextual constraints experienced by participants, so as to enhance participants' reflexive agency (and thus their social praxis).

6.4 Responding to praxis problems

This study revealed that even though assignment development process are important for enabling praxis in environmental education, there are problems limiting the development of praxis that need to be address by further praxis-based research. It is evident from the findings that praxis opportunities are constrained in the Swaziland course in a number of ways highlighted under the following themes:

- 1 Limited engagement with assessment processes,
- 2 An apparent 'misfit' between theory and practice, and
- 3 Structural constraints

6.4.1 Engagement with assessment processes

The study revealed that some of the processes related to assessment and assessment criteria were not given much attention during assignment development tutorials (see section 4.2), yet they are important for sustaining and enhancing the praxiological processes of professional development, as discussed in section 5.5. Evidence suggests that assessment processes associated with the two case participants in this case study indicate that assessment has not been fully maximized as a learning process and therefore it can be argued that participants' reflexive competencies have not been enhanced as per the expectation of the course orientation. Both participants produced just one draft of their assignment four yet the course orientation requires that they produce more than one. Raven (2000) recommended engaging participants in negotiating the assessment criteria for improved praxis. To add to that, I would recommend that, to fully benefit from the praxiological processes of 'thinking and re-thinking practice' noted by Raven (2000: 93), participants should make time to produce more than one assignment draft, in order to reflect on the comments made by tutors and fellow participants. In addition, I would recommend that tutors take the time to comment thoroughly on the assignments through a questioning approach (as per the course orientation).

6.4.2 'Misfit' between theory and practice

This study also identified that there is an apparent 'misfit' between theory and practice in assignment development. Both participants in the research articulated clearly what they intended their resources for but had problems of clarity as to how to approach their educational practice in ways that were consistent with the aims of the programme (in Messiah's case) or explaining how they were doing it (in Philile's case) (see sections 4.3 and 4.4). Behaviorist thinking influenced Messiah's educational work and the tutorial group did not engage him in deliberations on this approach. As noted above (and in section 5.6), this indicates poor engagement with educational ideas influencing actions in environmental education. This situation can be attributed to failure of course processes to enable meaning making in this area. In a different, but related problem, Philile confused the approaches she used to develop her resource and to implement it. Her work was oriented towards the constructivist approach but she described the development of her fact sheet as being behaviorist. This also, indicated lack of understanding of educational ideas influencing her practice.

Implications of this problem could be factors that relate to course processes and / or individual meaning

making processes. To address this problem on the part of the course processes, this study recommends that the orientation process should include tasks that will encourage more in-depth probing of educational ideas, which will enable participants to make informed educational choices in responding to environmental issues in relation to the aims of the programme or resource. It thus recommends a closer examination of the relationship between educational praxis and environmental praxis in environmental education. The study also recommends further research into this phenomenon.

6.4.3 Structural constraints

The discussion in section 5.2 also indicates that there are structural constraints in the field of practice experienced by participants when implementing the assignment products that disempower or frustrate participants' agency (see section 2.4.1). These structural constraints made participants' reflexive agency less visible in this research. Indicators of such constraints surfaced in both educational and socio-political/ socio-economic / socio-cultural contexts related to participants' practice. In a sense, these structural constraints almost force participants to adopt a 'false consciousness'. For example, in Messiah's case, he and his fellow participants were very careful not to challenge the pulp mill management since it commands a powerful economic position, and ended up negotiating for a fact sheet to be sure that while the people are made aware of the pollution problem, they are not sensitized to react radically. He also ended up using the fact sheet with a group of school children, rather than with the community members or workers, who were closer to the 'contentious space' than the school children were.

The findings in this research also indicate that educational structures also restrict participants' agency at the schools where they implement their programmes. Cornbleth (1990, 6) noted that curriculum in environmental education is 'contextually shaped' and that context is both 'structural' and 'socio-cultural' (see section 2.4.1 and 5.2.1). However, participants' reflexive agency was more visible in this area of their practice because they managed to implement praxiological educational processes at their schools through applying diverse strategies. An understanding of context helped them implement their programmes (see section 5.2).

Given this situation I recommend that further research is undertaken to explore the influence of power relationships and structure on reflexive agency in environmental education. Research focussing on strengthening reflexive agency of participants in responding to structural constraints and power

relationships would seem to be necessary not only in the schools but in the context of the broader society, because the latter has an influence on the school structures given that schools provide agency to the society's dominant structures. This relationship between schools and society makes issues of application of praxiological educational processes crucial in environmental education processes that are focused on social change.

6.5 Reflections on the research methodology and process

The methodology and methods employed in this study have provided me with a rich learning experience that have provided a wide range of opportunities for professional growth. Such experiences range from making research design decisions that were relevant to the research aims and my epistemological views; contextualising the research design and methods; and considering ethical issues and the trustworthiness of the findings.

Achieving these processes was not easy in my research because of the way I attempted the research process. The major problems emanated from the fact that I embarked with data generation before clarifying the focus of the research and before having established the research design. The reason for this was that the schedule of the tutorial group (in the course being researched) and my Masters course schedules were not pre-planned to match. I had to collect my data before a focussed review of relevant literature because the research group were engaging with assignment four towards the end of 2002, yet I was doing thesis writing course work in 2003. I did, however, know that I wanted to review the course processes in order to identify its strengths and failures in terms of responding to current needs in implementing environmental education in Swaziland. I was not, however, clear on what specifically to observe in the tutorials. In a way this situation influenced my research design and methods because I felt I needed to tape-record the processes, as they are to be able to analyze what is going on during the tutorial sessions.

I thus started off with 'too much data', which I then had to review to establish what was relevant to the assignment development processes. As I clarified the research focus and undertook the literature review, I was better able to develop further insight into my research focus. I then conducted interviews with tutors and participants to identify individual perceptions on the course after the first layer of analysis had provided me with a clearer perspective of what was happening in the course and at implementation level.

I chose the naturalistic approach to case study research because of its potential to portray the situation as it is, and I felt that this approach is / was appropriate to the research question because it allowed me to present a 'thick description' of the events that occurred. Without this, I would not have been able to develop the insights into praxis in the assignment processes of the course that have become apparent in this study.

I also observed that ethical issues in the research were inherent in the methods I employed which were influenced by the democratic nature of the course I was reviewing. As a participatory course the course appreciates respect for people as generators of the information they are sharing in the course. Being influenced by the practice of the course I found myself being passionate and interested to hear what other people in the course were saying about it. Conducting this research was not easy for me because it was not a straightforward 'journey'. However, I associated this 'journey' with the issues it is meant to address in relation to educational praxis and environmental praxis.

To improve the research process I would prefer doing a similar study using the same methods involving observation, document analysis and interviews and the reflective journal, but I suggest that it would be important to transcribe and analyze tape-recorded data immediately after observation to allow for interviewing participants as the research goes on instead of analyzing at the end observation. I would also suggest having about two people taking notes besides the researcher, for greater detail in terms of the recorded data because at times I found it impossible to take notes especially when I was conducting the tutorial session. Besides, subjectivity of the note-taker would be minimized where more than one person is doing the recording. Despite this, I feel that I was able to generate adequately detailed data for this study.

6.6 Conclusion

In concluding this research, I note again (like Beck, 1992) that environmental problems are complex and not easy to resolve, due to their embeddedness in socio-political, socio-economic and socio-cultural contexts (as shown in this study). This study has also shown that, in seeing environmental education as a response to these issues and risks appears to require a careful consideration between educational praxis and environmental praxis, particularly if environmental education processes are to be viewed as processes of social change. With environmental issues being so complex, there is no single theory capable of explaining the situation, and it therefore seems useful to draw on a number of theoretical perspectives and to relate them to practice in context, and our understandings of practice in context.

In this study, I drew on different perspectives on praxis to assist me to understand praxis better, and through this I was better able to interpret environmental education praxis in the context of the Swaziland course assignment process. I found that praxiological assignment processes are able to create opportunities for change, and that they allow participants to identify ways of addressing and responding to environmental issues and risks in context. I also found that there are many different dimensions to praxiological assignment work in environmental education, key amongst these being the enabling of reflexive agency and a better understanding of the relationship between environmental and educational praxis in environmental education, both of which require more in-depth research.

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