# INVESTIGATING GRADE 10 GEOGRAPHY TEACHERS' IMPLEMENTATION OF A LEARNER-CENTRED APPROACH IN SELECTED NAMIBIAN SCHOOLS

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## ABSTRACT

Geography, more than other subjects in the curriculum, plays a central role in general education in equipping learners with skills and competencies needed for modern living and global citizenship. A learner-centred education in Namibia was adopted to provide more opportunities for learners to develop the required skills and competencies irrespective of their different cultural background. This small-scale case study investigated three Grade 10 geography teachers' understanding and implementation of a learner-centred approach to gain insights into how learner-centred education is being implemented in the context of Geography. The research design adopted a qualitative approach within an interpretative orientation. Data were collected through interviews, classroom observations and documentary analysis. The research was conducted at three selected schools in Oshikoto Region with three Grade 10 geography teachers

The findings revealed, firstly, that teachers have a limited understanding of the key ideas of LCE, such as, prior knowledge, role of questioning, and social interaction in learning; use of resources and the types of assessment activities which comply with the aims of LCE. Secondly, the findings revealed that the policy documents, such as syllabuses, that are being used by the participants are not in line with the tenets of LCE. Thirdly, teachers appeared to have limited subject knowledge, as revealed by their lack of understanding of how to translate the aims and assessment objectives into their daily lessons.

The study therefore raises some possibilities for improving the implementation of LCE in the selected schools if the gaps as identified by this study are reduced.

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## LIST OF ACRONYMS USED

| | |
|---|---|
| BEd (H) | Bachelor of Education (Honours) |
| BETD | Basic Education Teacher Diploma |
| LCE | Learner-centred education |
| MBEC | Ministry of Basic Education and Culture |
| MBESC | Ministry of Basic Education Sport and Culture |
| MEC | Ministry of Education and Culture |
| NIED | National Institute for Educational Development |

# CHAPTER 1

## INTRODUCTION

### 1.1 Introduction

This chapter provides the context and background to a study that is framed by both geographical education and the ideals of the Namibian reform policy. The following two quotations are presented at the outset because for me they captured the essential heart of what I attempt in this study.

> Geography is half of all education ... geography stands as the one true science, the study of the human environment in all its manifestations. Its only equal in status is the study of human imagination and beliefs through literature. It makes the outside world make sense. (Jenkins, 1988, as cited in Binns, 1996:39)

> Learners should be encouraged to develop knowledge and understanding, judgment and decision-making, analysis and interpretations and application of geographical skills. (Namibia. Ministry of Basic Education and Culture [MBEC], 1998:15).

The two quotations above highlight the indispensable role and aims of geography in education that are the main motives behind the selection of my research title, which is to investigate the selected geography Grade 10 teachers' understanding and implementation of a learner-centred approach.

I describe the research site, the context of my study and the research goals. I conclude the chapter by providing an overview of the thesis.

### 1.2 Research sites

This study was conducted at three selected secondary schools in Oshikoto Region. These schools were chosen on the basis that they are equipped with qualified teachers all of whom have obtained the Basic Education Teacher Diploma (BETD) as their pre-service teacher education, which serves as an entry requirement into the teaching profession in Namibia. The Oshikoto region is situated in the remote northern part of

Namibia. Figure 1 below shows the location of Oshikoto region, numbered 12 on the map, in relation to the rest of Namibia.

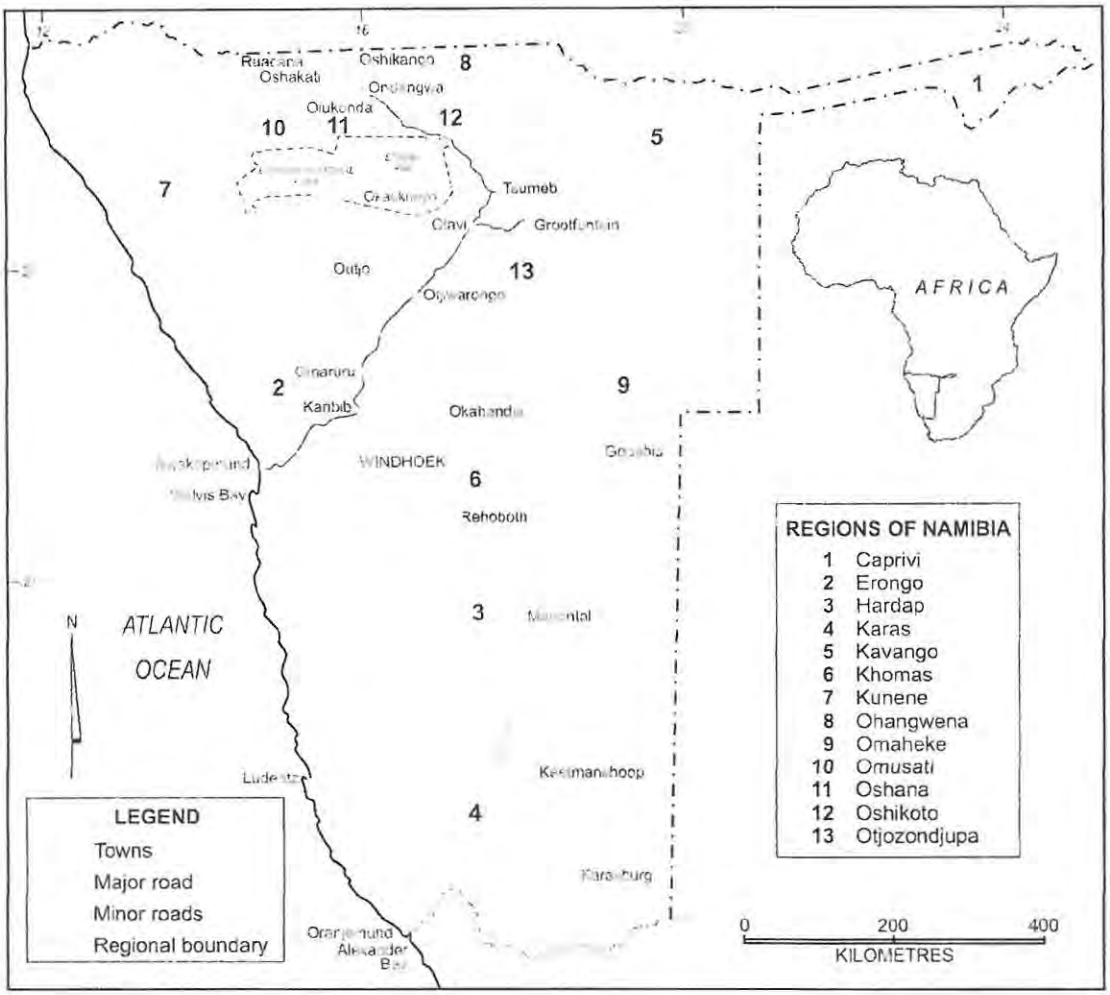


**FIGURE 1 Regions of Namibia**

**(S. Abraham, 2006. Graphics Services Unit, Rhodes University, Grahamstown)**

Despite its size, Oshikoto region has the fifth largest population of the thirteen political regions of the country, with a population of about 161 007 of the total 1,830,330 million Namibians according to the 2001 population and housing census report (National Planning Commission, 2004). Fifty-six percent of the people in the region live mainly by farming. Two types of farming are practiced in the region, namely subsistence dry land cropping – mainly millet and sorghum and livestock farming – cattle and goats are grazed on communal land, and in the area around Tsumeb, commercial dry land cropping is practiced and dairy and beef cattle are

farmed. Unlike the largest part of the country, Oshikoto region receives a relatively high average rainfall ranging between 400 – 500 mm annually, except in the area around Tsumeb, where a higher average rainfall, ranging between 500 – 600 mm annually is received (Stols, 1994), and that is the reason why the area attracted commercial farming. However, the rainfall is unreliable since the region experiences frequent periods of drought.

There are 9 senior secondary schools in the region, 53 junior secondary schools and 115 primary schools; a total of 177 schools. The number of teachers is 831 and the number of learners in the region is 55,227. The region won itself recognition by achieving the best results out of the 13 educational/political regions in the country for the first time in 2005 in both the Grade 10 and Grade 12 final examination. The leadership of the new director, Ester Anna Nghipondoka, who was appointed in 2005 as the first female director ever to run Oshikoto Region, is enhancing the current educational stability of the region.

### 1.3 Context of the study

Since independence, huge transformations have taken place in the education system in Namibia. In transforming the education system learning was intended to become active, meaningful, purposeful and goal-orientated. A participatory teaching and learning approach was encouraged and a learner-centred approach was adopted by Namibia to guide the reform process (Namibia. Ministry of Education and Culture [*MEC*], 1993). Group and project work, demonstration lessons, debates, presentations, and communication activities were encouraged. The goals of teaching and learning were to enhance independent and critical thinking in learners as well as an ability to identify, analyse and solve problems, and to develop self-confidence – the awareness that they have the ability to contribute productively to their society, to help it grow, and to participate in governing it (Namibia. MEC, 1993).

The view of learning and teaching currently associated with a learner-centred education (*LCE*) has its roots in social constructivism, which originated from cognitive psychology (Van Harmelen, 1999). A social constructivist approach to teaching emphasises the importance of teaching school subjects for understanding,

appreciation and application of knowledge (Brophy & Good, 1994). "Constructivists stress that students develop new knowledge through a process of active construction that involves making connections between new information and existing networks of prior knowledge" (*ibid.*: 414).

Based on the principles of social constructivism, the *Broad Curriculum Guide for Basic Education* recommends that the approach to teaching and learning should be learner-centred, and teaching strategies must be varied but flexible depending on the learning objectives and content of the lesson (Namibia. Ministry of Basic Education, Sport and Culture [MBESC], 1996). The role of geography in the curriculum is "to promote intellectual development, personal development and self-fulfilment, social and cultural development and development of environmental and population awareness" (*ibid.*: 6). Therefore a social constructivist approach, as adopted by the *Broad Curriculum Guide,* creates possibilities for learners to acquire the conceptual understanding, practical and intellectual skills, values and attitudes needed as a foundation for further learning in geography and enables learners to function effectively in space, place and time (Van Harmelen, 1999).

While widely adopted, a learner-centred education has posed challenges to teachers in Namibia. Research conducted in Namibia during the 1990s revealed that there have been misunderstandings of what is meant by learner-centred education and how to put it into practice. Van Graan (1999) reported that many teachers in Namibia merely equate LCE with classroom methodologies such as group work.

Globally, geography education is faced with challenges despite the key role it plays in education. Van Harmelen (1999) stressed that in South Africa the examination system, which was primarily concerned with assessing the number of right answers based on factual recall, forced teachers to teach for examinations and left no room for holistic development of learners. Research conducted in schools in England and Wales revealed "there is too much concern with teaching and not enough with learning, too much emphasis on substantive aspects of geography and not enough on the intellectual development of pupils" (Leat, 2002:109).

In the light of the above, there needs to be frequent reassessment of the balance of methods being used, and of developments in learning/teaching and their application to school Geography. Otherwise, we will never know if LCE is effective in developing what constitutes geographical knowledge if we do not know what is happening in the classrooms.

As a facilitator of geography at circuit level, I first became personally interested in this research topic when I was involved in facilitating geography workshops in our circuit. I learned that teachers have different understandings of what learner-centred education entails and that some teachers felt that geography is a very difficult subject and that one could not teach it in a learner-centred approach. This made me curious; I wanted to find out how these teachers understand the learner-centred approach in the context of geography education and how they teach geography.

### 1.4 Research goal

The purpose of this study was to gain a better understanding of how geography teachers, after sixteen years of reform in Namibia, are interpreting LCE and put their interpretations into practice in Grade 10 geography classrooms. I choose Grade 10 on the basis that teacher-learner interactions at this level will give me a better understanding of how the subject was taught in previous grades (Grades 8 – 9), thus providing insights into the full Junior Secondary Phase.

The study is, I believe, worth doing because it may broadens our understanding of what is happening in geography classrooms in Namibia. Gerber & Williams (2002) emphasise the need for such studies if the subject is to remain vital and relevant to ever changing educational demands.

The goals of the study were therefore:

- To explore Grade 10 geography teachers' understanding of the learner-centred approach adopted in Namibia.
- To investigate how they implement a learner-centred approach in geography education and why.

## 1.5 Outline of the dissertation

The dissertation is structured as follows:

The first chapter sets the scene by shedding light on the reasons for the study. I outline the research site, the context of the study and the research goals.

Chapter 2 presents a conceptual framework of the study by outlining some of the literature on social constructivism, which informed this study. It presents an overview of the nature and role of geography in education, nationally and internationally, and explores the teaching strategies of geography with a focus on the enquiry approach, as a contemporary approach to teaching geography. It looks at the way social constructivism provides more opportunities for geography lessons to be linked to learners' real life experiences and for learners to acquire the skills, values and attitudes required by the reform process. It also explores the definition of a learner-centred education as an epistemology and as an approach to teaching and learning. Some issues and challenges in the implementation of a learner-centred approach conclude the chapter.

Chapter 3 presents an outline of the research design. In this chapter, I discuss the research orientation I worked in, the method of enquiry, sampling and data collection tools I made use of and reasons why I selected them. The data analysis procedures are also discussed here. I conclude the chapter by describing the research procedure and limitations of the study.

Chapter 4 presents the data as collected through interviews, classroom observations and documentary analysis, with some comments.

Chapter 5 discusses the findings in the light of the research question, research goal and literature. The discussions raised a number of questions as to why the participants understood a learner-centred approach and implemented it the way they did. Issues that surfaced as teachers attempted to implement a learner-centred approach are also discussed and linked to the literature and other research done in Namibia and

elsewhere in the world. I conclude the chapter by discussing issues and challenges in the implementation of a learner-centred approach.

Chapter 6 provides a reflective overview of the research process and the research results; the lessons learned in terms of the research question, the research method and my professional growth; the potential values of my study; and the limitations of the study. I conclude the chapter by making tentative suggestions in terms of support for teachers and for further research.

# CHAPTER 2

## CONCEPTUAL FRAMEWORK

### 2.1 Introduction

As indicated in the previous chapter, the aim of my research is to explore teachers' understanding of learner-centred education adopted in Namibia and to investigate how they implement learner-centred education in geography education with a focus on Grade 10 in order to better understand how geography teachers work with the national curriculum documents in practice. I begin by presenting a conceptual framework of my study, which focuses on the nature and role of geography in achieving the aims of general education. The teaching strategies used in geography are also explored in this section in order to reflect the possibilities that geography as a subject offers to be taught in learner-centred education.

Secondly, I explore the definition and key ideas of social constructivism as a theory that informs learner-centred education to better understand why learner-centred education was adopted as the reform pedagogy. The definition of learner-centred education as viewed locally and internationally is also discussed in this section. I draw on insights from policy documents on LCE education and associated teaching and learning strategies in the Namibian context and on perspectives from international literature.

Thirdly, I look at the implications of learner-centred education for teaching, learning, instructional materials and assessment. I conclude this section by looking at challenges and issues in implementing learner-centred education.

The last section looks at the link between theory, policy and curriculum to give a better understanding of the link that exists between learner-centred education, as a policy adopted in Namibia, and a widely accepted theory of learning – social constructivism and how theory is translated into practice in the Namibian context.

## 2.2 The nature and role of geography in education

This section explores the nature of geography in education, drawing on local and international perspectives on geography education. I then look at the contributions of geography to the aims of general education.

### 2.2.1 The nature of geography in the Namibian curriculum

In this section I explore and present an outline of the aims of the Geography Junior Secondary Phase curriculum. I also examine the main themes and learning outcomes that learners should demonstrate in the junior secondary phase as stipulated in the geography syllabuses for Grade 8 to Grade 10, as these will help one understand what geography for junior secondary phase is all about. It will also serve as a framework in analysing how teachers implement learner-centred education in geography classrooms.

Geography as a subject falls in the social and economic area of learning in the curriculum, but it has thematic links to other subjects across the curriculum. Learners' participation in the issues related to the social, civic, political, economic, cultural and natural environment is central to this area of learning (Namibia. MBESC, 1996:14).

The rationale for geography in the Namibian curriculum is stipulated in the geography syllabuses for the Junior Secondary phase (Grade 8 – 10) as follows:

> Geography is viewed as the study of the Earth, and the interaction between humans and nature, it examines humans in their interdependent relationship with the earth. It also studies ways in which humans have adopted nature to meet their needs and requirements, and are able to utilise their environment in a sustainable way. Geography also provides scientific knowledge about physical, environmental and human processes, which form the basis for cross-curricular education. (Namibia. MBEC, 1998:1)

This rationale reflects the relevance of geography education in developing an understanding of the environmental, social, political and economic issues which are the results of the interdependence between humans and between humans and nature.

At the same time it reflects the relevance of geography in enabling all learners to develop an appreciation of the skills and attitudes appropriate to the work settings they will encounter in their adult lives (Namibia. MEC, 1993).

Table 1 below shows the aims of the geography syllabus.

**TABLE 1 The aims of the geography syllabuses**

| Knowledge and understanding of | Skills | Awareness | An appreciation of |
|---|---|---|---|
| The terminology, concepts and systematic fundamental to a study of physical and regional geography.<br><br>The relationships and interactions of people with their environment in response to physical and human process as well as aspects of the changing world.<br><br>Place and relative location on local, regional and global scale, with special emphasise on Namibian examples.<br><br>The factors that cause change in the diverse environment. | To be able to: Observe, collect and represent data, analyse and interpret data, and present findings. | Of the characteristics and distribution of a selection physical and human environment.<br><br>That on earth and also in our country there are different ways of life, and this should lead to a positive attitude towards this diversity. | The potentialities and limitations of the physical environment for human activities.<br><br>How human activities can lead to environmental problems and improvement.<br><br>The environment and the need for conservation. |

(Namibia. MBEC, 1998)

For the aims of geography to be realised, the geography curriculum for the Junior Secondary Phase (Grade 8 – 10) in Namibia is organised around the themes and key ideas shown in Table 2 below.

**TABLE 2 The themes and key ideas for Geography Junior Secondary Phase Curriculum in Namibia**

| Themes and key ideas | Grade 8 | Grade 9 | Grade 10 |
|---|---|---|---|
| **Map work** | Different types of maps<br>The tools of map work. | Revision and increasing map work skills. | Revision and further development of map work. |
| **Climatology** | Weather observation<br>Forms of condensation<br>Climatic regions. | Weather<br>Precipitation<br>Climate of Namibia | Weather and climate<br>Air pressure systems. |
| **Astronomical geography** | The solar system<br>The earth | Movement of the earth<br>Time | |
| **Ecology** | | | The deterioration of the Namibian environment |
| **Geomorphology** | | The internal structure of the earth<br>The composition of the earth's crust | The internal forces (endogenic)<br>External forces (exogenic) |
| **Economic geography** | Labour<br>Resources<br>Economic activities | Development<br>Production<br>Income<br>Trade<br>Aid | |
| **Population geography** | | Population data<br>Population characteristics | Population distribution and density<br>Population dynamics |
| **Regional geography** | Map of the world<br>Southern Africa | | Namibia's physical and economic features. |
| **Settlement geography** | Types of settlements<br>Rural settlements<br>Urban settlements | | |

(Namibia MBEC, 1998)

In covering the Junior Secondary phase, learners are expected to demonstrate the following learning outcomes as indicated in Table 3 below.

**TABLE 3 Assessment objectives**

| | |
|---|---|
| **Knowledge and understanding whereby learners should be able to:** | • Recall specific facts relating to the syllabus content and demonstrate knowledge within the range of local, national and international and global scales. Demonstrate an understanding of the geographical concepts, principles and processes specified in the syllabus and apply them in a variety of physical, economic, environmental and social contexts.<br>• Demonstrate an understanding of the spatial patterns and an appreciation of the range of physical, economic, social and political processes and interactions, which are experienced by people in different environments.<br>• Describe the inter-relationships between people's activities and the total environment and demonstrate an ability to seek explanations for them.<br>• Show awareness of the dynamic nature of the subject by an appreciation of the ways in which values and perceptions change over time and from place to place.<br>• Show awareness that while geographical studies with both description and explanation, the later may often be tentative and incomplete. |
| ***Judgement and*** **decision-making whereby *learners should*** **be able to:** | • Reason and make judgements (including evaluation and conclusion), which demonstrate, where appropriate, a sensitivity to and a concern for landscape and the environment, an aesthetic and appreciation of the earth including its people, place, landscape, natural processes and phenomena, an appreciation of the attitudes, values and beliefs of others in cultural, economic, environmental, political and social issues, which have a geographical dimension, an awareness of the contrasting opportunities and constraints of people living in different places and under different physical and human conditions, and a willingness to review their attitudes in the light of a new knowledge and experiences.<br>• Recognise the role of decision-making within a geographical context as affected by the physical and human context in which decisions are made, the values and perceptions of groups or individuals and the choices available to decision-makers and the influences and constraints within which they operate. |
| **Analysis and interpretation whereby learners should be able to:** | • Select, organise, present and interpret geographical data, use and apply geographical knowledge and understanding in verbal, diagrammatic, pictorial and graphical forms, use geographical data to recognise patterns in such data and to deduce relationships. |

| | |
|---|---|
| **Application of geographical skills whereby learners should be able to:** | • Demonstrate a knowledge and understanding of symbols, scales and the use of maps for describing places, determining positions, compass direction to 16 main points and bearing, measurement of straight line distances by using the scales, means of showing relief features, slopes and shape of common landforms using contours, interpretation of relief by drawing cross-sections freehand, simple interpretation of climate, relief and population features.<br>• Make weather observations and know how to identify and use various instruments to obtain weather data, interpret climatic maps showing distribution of rainfall and temperature, interpret population data showing size, structure (composition), distribution, density and movement, and interpret and describe human and physical landscapes from photographs and fields observations and data collecting. |

(Namibia. MBEC, 1998)

The above geographical skills are related to the life skills competencies as outcomes of Basic Education as stipulated in the *Pilot Curriculum Guide of Basic Education*, which are:

- Investigate: ask for, observe, investigate and enquire.
- Interpret: comprehend, distinguish, interpret, translate data, explain, compare and classify.
- Apply knowledge and skills: measure, locate, produce, show, display, report and dramatise.
- Communicate: tell, act out, draw, write, explain, show, display, report and dramatise.
- Value: show appreciation, evaluate, decide and infer.
- Participate: take part, participate and present.

(Namibia. MBESC, 1996)

In the next section I explore the nature of geography as viewed internationally to see how it is related to the Namibian curriculum content.

### 2.2.2 The nature of geography as viewed internationally

Internationally, geography enjoys a central position in education. There are international associations established purposely to keep the subject alive and unique. The Royal Geographical Society with the Institute of British Geographers, (2002:1) see geography as "the integrated study of the earth's landscapes, peoples, places and the environment". Furthermore the association sees geography as "unique in bridging

the social sciences (human geography) with understanding of the dynamic of cultures, societies and economics, and the earth sciences (physical geography) with understanding of the dynamic of physical landscape and environmental processes" (*ibid.*). In the same light, the Association of American Geographers (1994:1) sees geography as an "integrative discipline that brings together the physical and human dimensions of the world in the study of people, places, and the environment." In addition to that, the association stated further that geography focuses more on asking questions and solving problems than it does with rote memorisation of isolated facts.

The rationale for geography in the Namibian curriculum is in line with the Royal Geography Society with the Institute of British Geographers' views, as well as with the Association of American Geographers' views, as they all view geography as unique in bridging the social science (human geography) and the earth sciences (physical geography). So, in the context of my study, the local and international views on the nature of geography in education serve as a framework in analysing the nature of geography in the Namibian curriculum and how teachers, through learner-centred education, are striving to realise the aims of geography education.

Given the nature of geography as viewed locally and internationally, now my concern is: Why ought children to study geography? So in the next section I explore the contribution of geography to the general education of children.

### 2.2.3 The role of geography in education

Geography as a study of the earth's surface and the various natural and human phenomena, which make up the earth's environment and places, has a central role to play in general education. Through studying geography at school each pupil acquires special knowledge, skills and attitudes that are important resources required by adults as citizens of a complicated world. Rawling (1987:32) has made the claim: "Geography, more than other subject in the curriculum, helps the pupils to make sense of current events and informed judgements on economic, political, social and environmental issues." In other words the study of geography equips learners with *world knowledge*. In the same light, Fairgrieve (1926, as cited in Graves, 1975:83) stated, "the function of geography is to train future citizens to imagine accurately the

conditions of the greater world stage and so help them think sanely about political and social problems in the world around." Turner (2002:258) recognised the role of geography in promoting *citizenship education* by arguing, "learners, by studying a wide range of places in geography, are well placed to study global citizenship, what it is like to live in other parts of the world and to develop an understanding of how decisions taken locally affect what happens globally."

Corney and Middleton (1996) emphasised that learners by studying geography get the opportunity to develop *environmental understanding*. Therefore, they argued that in our teaching, the focus should not only be teaching about environment, but our approach should be aimed at promoting informed concerns, commitment to an environment for students to take responsibility for their behaviours towards the environment (*ibid.*). Looking at this argument critically, it could be concluded that geography education also promotes an understanding for sustainable development.

Lambert and Matheus (1996) argued that geography contributes to personal and social development of the learners. They argued that opportunities exist through geography for learners to have their prejudices openly and effectively challenged and to make sense of the world. The understanding and communication of spatial information through maps and other forms of illustrations is a crucially important contribution of geography to the curriculum. Hence Rawling (1987:32) stressed, "geography is the only subject whereby pupils are taught systematically to understand fully the use, interpretation and construction of a wide range of maps, diagrams and photographs. Therefore geography provides for the development of *graphicacy* (*ibid.*).

Given the nature and role of geography in education, the following questions are worth examining: How might one teach geography using learner-centred education? Does geography offer a rich array of opportunities to be taught in the learner-centred approach? Exploring the teaching strategies of geography could reveal the answers to these questions, which I do in the following section.

### 2.2.4 The teaching strategies of geography

What characterises teaching geography today is what is called the 'enquiry approach' to teaching geography. Rawling (2000, as cited in Davidson, 2000:78) defined geographical enquiry as "an active, questioning approach to teaching and learning, which includes values enquiry and is integrated with the development of geographical skills." Hence Rawling (1987:32) stressed, "geographical enquiry gives greater consideration to evaluation, prediction and to moral and ethical questions arising from people-environment situations." Roberts (2003) saw geographical enquiry as an active process through which learners construct knowledge about the world. She argued further that in order to learn, students need to make connections between what they already know and new information and new ways of seeing things; and they do this through the process of enquiry (*ibid.*).

Roberts (2003:37) reported, "during the 21st century, geographers become increasingly interested in answering questions such as: *what and where* questions, *why and how* questions; and with emphasis on social relevance new questions emerged as core questions: *with what impact and what ought.*" In the same light, Rawling (1987:32) stressed, "geography has always been concerned with describing and explaining phenomena, with explanation and with the application of understanding to the new situations."

Pearce (1987:34) argued, "any worthwhile geography educational experience must include opportunities for young people to draw lessons from their own experience of life outside school." In the same light, Roberts (2003:1) stressed, "if geography is to be worth learning then geographical enquiry should help students to make sense of the world they live in and to make sense of what they hear, see and read."

In the Namibian geography curriculum, although it is not explicitly shown, there are elements of geographical enquiry expressed implicitly in the aims of geography education, where it is stressed, "learners should be encouraged to develop knowledge and understanding, judgement and decision-making, analysis and interpretations and application of geographical skills" (Namibia. MBEC, 1998:15).

"An enquiry approach to learning recognises that knowledge is not something out there ready to be learnt, it is generated in the process of answering questions"

(Roberts, 2003:35). The advantage of geographical enquiry could be deduced from the fact that learners are given the opportunity to develop sophisticated understanding of the knowledge being constructed. They should be able to move from knowledge '*what*' and '*why*' to knowledge '*what if*' (Van Harmelen, 2005). In this way, through geographical enquiry, learners are provided with access to a richly varied body of facts, intellectual skills, attitudes and values and to study at scales ranging from local to global (Rawling, 1987). Rawling (1987:32) suggested, "the diversity of factual knowledge is given coherence by means of the questions which geographers ask, some related to where, how and why certain people-environment situations have arisen and some referring to the consequences and impacts of particular natural events and human decisions."

Consider, for example, the classroom topic, 'deterioration of the Namibian environment'. With an enquiry-based approach, students will get opportunities not only to study factual knowledge such as what it is, why it occurs and how it could be dealt with; but they will also get opportunities to investigate, through enquiry, the political factors involved, such as an unequal distribution of land; the economic factors involved, such as unequal distribution of facilities and services; social factors, such as unemployment and poverty; and demographic factors such as high birth rates and the resultant overpopulation; and prolonged drought, which make the Namibian environment more vulnerable and marginalised. Learners could also explore the effects of the deterioration of the Namibian environment on the global environment in terms of climatic change.

Topics such as the above are part of the Namibian learners' frame of reference and enquiries such as these draw on learners' prior knowledge and understanding of their world. By suggesting solutions to the deterioration of the environment, learners will get opportunities to develop awareness of how decision-making within geographical context is affected by physical and human context in which decisions are made, as well as by the values and perceptions of groups or individuals, and in this way they develop their own values as well.

In the light of the above, one can speculate that geography is rich in opportunities to be taught in LCE, as it offers many accessible problems for students that could be

related to their everyday life experiences. It can offer large arrays of large and small problems that learners could be asked to try to solve.

In the next section I explore the definition and key ideas of constructivism as a theory of learning that underpins LCE to better understand why geography teachers should implement LCE.

## 2.3 The epistemological framework of the study

### 2.3.1 How children learn: social constructivism

This section aims to explore the ideas of different researchers and theorists whose ideas informed current educational practice. I argue here that a clear understanding of how children learn and the theory underpinning the new view of learning is central to the successful implementation of learner-centred education.

Learner-centred education adopted in Namibia is underpinned by a widely accepted theory of learning, namely social constructivism. According to Van Harmelen (1999) social constructivism as a theory of learning originated from cognitive psychology, which evolved as one of the alternative approaches to behaviouristic psychology, and within the study of language acquisition. Cognitive psychology and recent linguistic studies challenge the fundamental values that underpin the so-called scientific approach to education and therefore behaviourism as 'scientific' learning theory (Van Harmelen, 1999).

The central idea of social constructivism is that we learn about the world only through actively making sense of it for ourselves (Baynes and Todd, 1995 as cited in Roberts, 2003:27). Gray (1997:3) saw constructivism as a view of learning based on the belief that knowledge is not a thing that can be given by the teacher, rather, learners through an active mental process of development construct knowledge; learners are the builders and creators of meaning and knowledge.

Bennett & Dunne (1994) held a constructivist view of learning and believed that what children learn in the classroom would depend to a large extent on what they already

know. They argued further that irrespective of their age, children bring to the classroom topic some knowledge and even misconceptions, which they have acquired from books, television, talking to parents and friends, visits to places of interest, previous work in school and so on. However, these conceptions, or schemata as they are called, are likely to be incomplete, hazy or even wrong. So the role of the teacher is initially to access learners' prior knowledge and use it as a starting point in teaching.

Social constructivists emphasise the role of other people in helping us to make sense of the world. From this perspective, knowledge is not solely constructed within the mind of the individual, rather, interactions within a social context involve learners in sharing, constructing and reconstructing their ideas and beliefs (Edward, 2000). Roberts (2003:27) held the view that: "The knowledge we have is not constructed in isolation from other people, but through interactions with others, e.g. in families, with friends and in groups which we belong." Vygotsky uses the notion zone of proximal development to emphasise the role of social interaction in learning. Bennett & Dunne (1994) defined the zone of proximal development as 'the gap between what an individual can do alone and unaided, and what can be achieved with the help of more knowledgeable others'. For Vygotsky a child's potential for learning is revealed, and indeed is realised, in interactions with more knowledgeable others (*ibid.*). So learning is optimised in settings where social interaction, particularly between a learner and more knowledgeable others is encouraged, and where co-operatively achieved success is a major aim.

Webster et al. (1996, as cited in Roberts, 2003:31) stressed, "the most powerful determinant of children learning was how teachers scaffold the learning process." By scaffolding, they meant "the complex set of interactions through which adults guide and promote children thinking" (*ibid.*). The term scaffolding has been adopted from Vygotsky's term of light assistance. Although Vygotsky did not use the term himself, he was the first to develop the concept of scaffolding. According to Roberts (2003) Vygotsky suggested several types of assistance that might be given when a child was engaged in a problem-solving activity: providing the first step in a solution, asking a leading question, supplying information, questioning, correcting and making the child explain.

Another significant issue in constructivism as a theory of learning is the view of knowledge. According to Hinchey (1998) knowledge, from a constructivist perspective, is the meaning assigned to facts, rather than the facts themselves. So knowledge, from a constructivist perspective means understanding. Hence, Van Harmelen argued,

> Within the constructivist perspective, to be able to say 'I know' – means that we developed conceptual understanding consisting of: the information about something, the skills and competencies to attain that understanding, the processes underpinning the relationships between dimensions of information that make them ideas or concepts, and the values and attitudes that enable us to appreciate both how to make sense of the information and the interrelatedness and interconnectedness of various aspects of information within a particular concepts. (2005, p.58)

In line with the above, Van Harmelen (2004) suggested that in learner-centred education, teachers should take the role not only of transmitters of facts and basic social and cognitive skills, but also as a facilitators, mediators and co-learners and they are expected to have a deep conceptual understanding of the ideas, the key concepts and organising structures that are embedded in particular disciplines, in theories and practice – what Prawat (as cited in Van Harmelen, 2004) referred to as 'epistemological empowerment'.

Since the purpose of my study is to find out how geography teachers interpret and implement learner-centred education, and social constructivism is a theory of learning that informs learner-centred education adopted in Namibia, a consideration of the ideas of social constructivism as a theory of learning, which informed current educational practice as outlined earlier in this section, is crucial in my study.

In the next section I explore the definitions of LCE as viewed locally and internationally.

### 2.3.2 Learner-centred education: epistemology

The learner-centred approach to education draws heavily upon constructivism with the assumption that deep learning occurs when the learner is actively engaged in the construction of knowledge for himself (Pulist, n.d.). Learner-centred education has been defined as the perspective that couples a focus on individual learner's experiences, perspectives, background, talents, capabilities and needs (Gibbs, 1992, as cited in Pulist, n.d.; McCombs & Whisler, 1997, as cited in Henson, 2003).

In the light of the above, Henson (2003) articulated that learner-centred education is based on the notion that the student is the main agent of learning and incorporates strategies that are active, inquiry-based, and promote collaboration. Hence he stressed that the role of the instructor is not to put knowledge into learner' heads but to put them in positions that allow them to construct well-developed knowledge (*ibid.*).

According to Pulist (n.d.) the goal of learner-centred education would be to produce lifelong learners having problem-solving abilities, learners who would understand and would be informed about their culture and society.

### 2.3.3 Learner-centred education as an approach to teaching

Learner-centred education was adopted in Namibia as a reform pedagogy that replaced a transmission style of teaching, in which the teacher was 'the source of information and ideas', to one in which learners construct, not simply receive, knowledge (Namibia. MEC, 1993). So the new education system in Namibia is built on learner-centred education. Learner-centred education is stated as policy in the development brief '*Towards education for all*', and expressed in the four major goals of education: *access, equity, quality* and *democracy* (NIED, 2003). Basic Education aims to give all learners the fundamental knowledge and understanding, skills and competencies, values and attitudes, which are required for modern living, citizenship and self-fulfilment (Namibia. MBESC, 1996). Hence the Ministry of Basic Education states:

> We expect our children to develop their curiosity and ability to undertake systematic inquiry, to discuss issues rationally, to learn to solve problems, to understand and practice democratic principles, to understand their own

> country and other countries of the world, to appreciate the interdependence of all living things, and more. (Namibia. MEC, 1993:89)

Learner-centred education as adopted by the new government of Namibia has implications for teaching, learning support materials and assessment. Therefore in the next section I explore the implications of LCE for teaching and learning, instructional materials and assessment.

### 2.3.4 Implications for teaching approach, instructional materials and assessment

#### 2.3.4.1 Implications for teaching and learning

Learner-centred education implies a complementary role for the teacher. Therefore the Ministry of Basic Education stipulates:

> Learner-centred education presupposes that teachers have a holistic view of the learner, valuing the learner's life experience as a starting point for their studies. Teachers must therefore have sufficient knowledge and skills to be able to interpret syllabus and subject content in terms of the aims and objectives of Basic Education and to relate these to the learner. Teachers should be able to select content and methods on the basis of a shared analysis of the learner's needs, use local and natural resources as an alternative or supplement to ready-made study materials, and thus develop their own and the learners' creativity ... A learner-centred approach demands a high degree of learner participation, contribution, and production. (Namibia. MEC, 1993:80)

The above review reflects that children learn best when they are actively involved in the learning process, when they are interested in the things they are learning and when they see that what they are learning is relevant. Hence, the Ministry of Basic Education states that the emphasis in delivering the curriculum is on quality and meaningful learning. Therefore, the approach to teaching and learning should be learner-centred, which means that:

- The starting point at each stage of learning is each learner's existing knowledge, skills, interests and understanding, derived from previous experience in and out of school;
- The natural curiosity and eagerness of all young people to learn to investigate and make sense of a widening world must be catered for by a variety of challenging and meaningful tasks;

- The learners' perspective must be appreciated and taken into consideration in the work of the school;
- Learners should be empowered to think and take responsibility not only for their own, but for each others' learning and development; and
- They should be involved as partners in, rather than receivers of education.

(Namibia. MBESC, 1996:25)

The above ideas correspond with what Roberts suggested as features for an enquiry approach to teaching geography, when she stated:

- We need to take account of students' existing knowledge and ways of understanding.
- Allow time for students to explore new information and to relate it to what they already know – making sense is not an instant process.
- Provide opportunities for students to reshape and reconstruct their existing knowledge in the light of new knowledge in discussion with others.
- Make students aware of the way they see things and make them aware of different ways of seeing things.
- Make students aware that all geographical knowledge has been constructed. Develop learners' inquisitive attitudes towards the world and towards what we know and understand, and this is achieved through an enquiry approach.

(Roberts, 2003:27)

The *Pilot Curriculum Guide for Basic Education*, a framework for devising subject syllabuses, provides further guidelines for teachers by stipulating that a variety of techniques will be used such as "direct questioning, eliciting, explaining, demonstrating, challenging the learners' ideas, checking for understanding, helping and supporting, providing for active practice and problem solving" (Namibia. MBESC, 1996:25). It states further that there should be variation between teacher-directed, teacher-facilitated, and learner-directed work, depending on which is most effective in relation to the learning objectives and content of the lesson (*ibid.*).

Research conducted in Namibia revealed that learner-centred education adopted in Namibia poses challenges to teachers. Some studies conducted in Namibia on teachers' understanding and practice of learner-centred education show that there was a mismatch between teachers' understanding of what learner-centred education is and how they put it into practice (Van Graan, 1999:52; Hoabes, 2004). These studies revealed that many teachers equate learner-centred education with group work. In the

same light, Hoabes (2004) by investigating teaching strategies used by teachers to foster environmental education reported that although some teachers were able to use methods that aim to involve children in the learning process, they did not view their approach as learner-centred. Instead, they view learner-centred education as a 'change in teaching method' (*ibid.*). Other research reports stressed that teachers' misunderstanding of LCE could be attributed to the fact that many teachers in Namibia did not receive pre-service teacher education in learner-centred education (NIED, 2003).

The gap I identified in these studies is the fact that they focus on teachers' understanding of learner-centred education and did not consider whether the policy documents that teachers are working with are in line with LCE principles. It seems that the syllabuses might not be explicit on how teaching should be organised, as a result teachers might interpret the syllabuses as they are. Therefore, my study will not only explore teachers' understanding of LCE, but also critically analyse the policy documents to determine the extent to which they support teachers in implementing LCE.

In the next section I explore the implications of learner-centred education for learning and instructional materials.

### 2.3.4.2 Implications for learning and instructional materials

A major implication of learner-centred education is the reconsideration of materials in order for substantial learning to take place. Effective learning and teaching are closely linked to the use of materials (Namibia. MBESC, 1996:27). The *Conceptual framework document on learner-centred education in the Namibian context* stipulates:

> In a learner-centred education the aim of ready-produced learning support materials is not to reduce the teacher to a reinforcer or programme facilitator only, nor to make the learner the passive recipient of reinforcement or the active recipient of an instructional programme, rather it is to provide a basis and support where necessary, for learning to happen (NIED, 2003:22).

Based on the above, some of the implications for learning and instructional materials include:

- The learning support materials should contain reliable, up-to-date information not otherwise available to the learner and teacher for the learning which is intended to take place, given the facts that many teachers in Namibia have a backlog of knowledge, reference materials are not easily accessible, there is a generally weak culture of reading, and textbooks and teachers' guides are the main source of subject information. So the textbooks and teachers' guides will need to cover all content for the syllabuses and provide some enrichment.
- Given the continued importance of textbooks, information needs to be presented in such a way that learners do not meta-learn that knowledge is always given and unchangeable. So textbooks should introduce topics not only in terms of content, but should also include the goals of learning to guides learning for learners.
- Activities in the textbooks should provide opportunities for exploration and problem-solving; tasks should be devised which need a group to solve them to promote co-operative learning in a way that makes sense to the learner and teacher (*ibid.*: 22).

Since my study focuses on teachers' perceptions and implementation of LCE, the use of instructional materials is worth considering in the context of my study.

In the next section, I explore the implications for assessment.

### 2.3.4.3 Implications for assessment

The Ministry of Basic Education recommends, "in learner-centred education, assessing the progress and achievement of each learner continuously is an integral part of the teaching and learning process" (Namibia. MBESC, 1996:31). A learner-centred curriculum and learner-centred teaching, uses a far broader and more relevant range of knowledge, intelligences, contexts, and skills than any other (NIED, 2003). Therefore in order to capture the full range and levels of competence, a variety of assessment situations are needed in a continuous feedback into the teaching and learning process. This implies that:

- Assessment should be related more to curriculum goals and aims and not so much to discrete syllabus objectives.

- Authentic assessment would be less frequent but in the form of real, or more adequately designed, assessment situations where discrete skills are demonstrated as part of the larger task (*ibid.*: 28).

In the same light, Shepard (2000) argued that to be compatible with and support the social constructivist model of teaching and learning, classroom assessment must change in terms of its form and its content to better represent important thinking and problem-solving skills as well as in the way that assessment is used in classrooms and how it is regarded by teachers and students. On the purpose of assessment, the Ministry of Basic Education recommends:

> Assessment should inform learners and their parents about the progress, where learners are doing well, and why and where they need to try more, how and why; as well as to evaluate the teaching and learning process, in terms of relevance of content, learner participation, appropriate methods of teaching, optimal use of group work, individual work and teacher-directed work etc. (Namibia. MBESC, 1996: 31).

In the light of the above, the Ministry of Basic Education recommends that assessment should play both a formative and a summative role. Wilmot (2003) defined formative assessment as assessment for learning done to provide information about the progress the individual learner is making in relation to the curriculum's targets; and summative assessment as assessment of learning done to provide an overview of what the learner knows and can do at the end of the teaching and teaching/learning process.

However, studies conducted in Namibia on teachers' understanding of the new assessment approach revealed that there is a need to develop what is called "*assessment literacy*" in teachers. This means "teachers should be able to elicit reliable and valid information of the learner's performance, to interpret the information, to communicate what it means back to the learners and parents and to know what to do to improve performance" (NIED, 2003: 27). At the same time, it is reported, "the increasing emphasis on formal testing and examination is moving teaching and learning back into behaviourist modes of teaching instead of forward into authentic teaching and learning" (*ibid.*:32). Wilmot and Murray (2000) raised the same concern by arguing that an examination system, which is still based on factual

recall and production of the right answer, will hamper the effective implementation of formative assessment in Namibia.

As I am interested to find out how teachers understand and implement learner-centred education, it is worth considering how assessment is being implemented, as assessment is now viewed as integral to the teaching/learning process.

In the next section I explore the challenges and barriers in the implementation of learner-centred approach.

### 2.3.5 Issues and challenges in implementing LCE

Since a learner-centred approach is underpinned by constructivism as a theory of learning, several authors and researchers have revealed issues and challenges associated with the implementation of constructivist based teaching. MacKinnon and Scarf-Seater (1997, as cited in Ismat, 1998) reported that since constructivism is a theory of learning, not a theory of teaching, the overarching challenges constructivism presents to teachers and teacher educators is to translate a learning theory into a theory of teaching, which in turn raises questions of what teachers need to know and be able to do.

Kickbusch (1996) identified the degree of receptiveness for change by teachers as a challenge, by arguing that teachers' beliefs and values, which guide, define and inform professional behaviour, are deeply rooted and are not easy to change. Considering the fact that many teachers and teacher educators in Namibia were not prepared for a learner-centred approach (NIED, 2003), Kickbusch's idea is worth considering in my research. Lester and Onore (1990, as cited in Gray, 1996) argued that teachers' definitions of what knowledge is and how it is acquired, and how we determine whether knowledge has been acquired, accounts for the degree and kinds of changes teachers would experience. The challenge is that if teachers are not convinced of a learner-centred approach, as underpinned by the social constructivist theory of learning, as a worthwhile and appropriate method of teaching and learning, then the change intended by educational reform in Namibia will not materialise.

Martin (1994) and Vadeboncoeur (1997, as cited in Ismat, 1998) argued that to deliver culturally relevant and socially just pedagogy and practice from constructivist epistemologies requires that teacher educators deconstruct and examine cultural assumptions that underlie various interpretations of constructivism, otherwise inequalities and inequities may be perpetuated in supposedly constructivist classrooms. This argument is essential in the context of my study considering the fact that a learner-centred approach was adopted in Namibia to make it possible for all learners from different cultural backgrounds to achieve. In addition, Gray (1996) pointed out that personal development is the key to change in practice, therefore he suggested that constructivist teaching requires intelligence, creativity, patience, responsiveness and the ability to be flexible to accommodate specific individual or classroom situations.

Kickbusch (1996) suggested that the work of reforming teaching and learning strategies in the interests of promoting student understanding must also be supported by public policy. He suggests further that public support must be built not only for instructional strategies, which lead to higher levels of student competence, but also for assessment strategies, which will enable students to demonstrate their competence. The challenge here is that if policy documents are not consistent with a learner-centred approach, and if assessment does not comply with the principles of a learner-centred approach, then teaching for understanding, as intended in a learner-centred approach, will be impeded.

So the challenges as raised above are worth considering in the context of my study, since they could help me understand why teachers understand and implement a learner-centred approach the way they do

### 2.4 The links between theory, policy and curriculum

By reviewing the aims of geography education, the aims of social constructivism and the aims of a learner-centred approach, I detected the links that exist between these three aspects, as:

- All are aimed at equipping the learners with knowledge and understanding, skills and competencies, values and attitudes, the skills necessary for modern living and citizenship (see sections 2.2.1, 2.2.4, 2.3.1 and 2.3.2).
- All recognise that knowledge is not out there ready to be discovered, but it is constructed in the mind of the learners, through interaction with their environment, their peers, families and communities.
- All recognise that learning is not a product, but a process whereby learners construct their own meaning built on their existing knowledge. So they all recognise the pre-knowledge of learners.
- All recognise the role of knowledgeable others in supporting learning.

In the context of my study, I could argue here that geography education aims not only to promote the goals of Basic Education in Namibia, but also equips learners with knowledge and skills which are needed for adult success in the 21st century globally.

**Summing up**

A review of the key ideas of theorists and researchers on social constructivism as a theory of learning that informs learner-centred education assumes that social constructivist teachers must have an extensive understanding of both the theory and the pedagogy of LCE/ social constructivism. As reflected in the review of the key characteristics of LCE and LCE teacher as social constructivist, an understanding of theory and pedagogy of LCE and social constructivism implies that:

- Social constructivist teachers must inquire about learners' prior understanding of concepts before sharing their own understanding of those concepts.
- Social constructivist teachers must scaffold the learning process by encouraging learners to share ideas both with the teacher and with each other for them to actively make sense and construct meanings for themselves.
- Social constructivist teachers must encourage learners' enquiry by employing teaching strategies that are active, inquiry-based and promote collaboration.

- On the use of materials, including textbooks, social constructivist teachers must present information in such a way that learners do not meta-learn that knowledge is always given and unchangeable.
- Since a learner-centred curriculum and learner-centred teaching uses a far broader and more relevant range of knowledge, intelligences, contexts, and skills, to capture the full range and levels of competencies, social constructivist teachers must use a variety of assessment situations in a continuous feedback into the teaching and learning process.

The key characteristics of a social constructivist teacher as outlined above will serve as indicators to assess teachers' implementation of LCE.

## 2.5 Conclusion

In this chapter, I presented an overview of the nature and role of geography in education and considered the teaching strategies of geography with a focus on enquiry-based teaching. I argued that geography is rich in opportunities to be taught in LCE, as it offers learners many opportunities to investigate problems, which could be linked to their real life experience.

I explored the definition and key ideas of social constructivism as a theory of learning that informs LCE as well as the definition of LCE. I argued here that the aims of educational reform are closely linked with the aims of geography education. I argue that if teachers implement a learner-centred approach in geography, and use it well, then the geography learners would acquire the skills, values and attitudes required by the reform process. I identified a number of issues and challenges associated with the implementation of a learner-centred approach, and I provided a summary of the characteristics of social constructivist teachers that I will use as indicators to assess teachers' implementation of a learner-centred approach.

In the next chapter, I provide a detailed outline of the methodology used for my research.

# CHAPTER 3

## RESEARCH METHODOLOGY

### 3.1 Introduction

In this chapter I provide a description and explanation of the approach and procedures that I have used to conduct this study. The approach and procedures were chosen on the basis of my research goals, which are to investigate and to understand teachers' understanding of and implementation of a learner-centred approach (LCE) in geography education in three selected schools in Oshikoto Region.

I discuss the research orientation, method of inquiry, sampling, data collection tools, data analysis, research procedure and limitations of the research.

### 3.2 Research orientation

This research is based on and guided by an interpretive orientation. Neuman (2000:71) describes the interpretive approach as a process of inquiry that involves "the systematic analysis of meaningful actions through direct detailed observation of people in natural settings in order to arrive at understanding and interpretations of how people create and maintain their social world." So the task of the researcher is to 'understand what is going on, the definition of the situation' (Connole, 1998). Cohen, Lawrence, & Morrison (2000) claim that an interpretive orientation affords the researcher an opportunity to understand and interpret the world in terms of the participants. Since in this study I aim to investigate and understand the perceptions, experiences and practices of geography teachers in three selected schools in Oshikoto Region of learner-centred approach (LCE), I locate my study in the interpretive orientation.

As the focus of the study is on understanding the perceptions and actions of others, the form of inquiry I opted for is a qualitative research methodology. According to Merriam (2001:5) "qualitative research is an umbrella concept covering several forms

of inquiries, among others are: interpretive inquiry, field studies, participant observation, inductive research and case studies that help us understand and explain the meaning of social phenomena with little interruption of the natural settings as possible." He goes on to explain that the key assumption upon which all types of qualitative research are based is the view that individuals interacting with their social worlds construct reality. Accordingly, Anderson & Arsenault (1998) argue that a fundamental assumption of qualitative research is that a profound understanding of the world can be gained through conversation and observation in natural settings rather than through experimental manipulation under artificial conditions. So in the context of my study, I was able to locate the research in the classrooms of the participants and see at first hand how they operated within that setting as a way to understand and bring meanings to their actions.

Patton suggests a list of characteristics for qualitative research, which among others are:

- Qualitative research takes place in the natural setting; this enables the researcher to develop a level of detail about the individual or places and to be highly involved in actual experiences of the participants.
- Qualitative research uses multiple methods that are interactive and humanistic, these involve active participation by participants through open-ended observations, interviews and document analysis, and sensitivity to the participants in the study.
- Qualitative research is fundamentally interpretive, which means that the researcher makes an interpretation of the data.

(2002:181-182)

Looking at the purpose of my study, this form of inquiry is appropriate to my research as I sought to investigate and understand participants' perceptions, experiences and practice of learner-centred approach in geography education.

### 3.3. Method of inquiry: Case study

I made use of a case study as the method of investigation. According to Basey (1998:76) "a case study is a method of enquiry, which involves taking extensive data from people being questioned or trying to extract some meaning to better understand

more clearly." It is a holistic research method that uses multiple sources of information and its distinctive feature is the case that may be an event or process considered worth of study (Anderson & Arsenault, 1998). Anderson & Arsenault say that the case study has been confused with other types of research such as historical or evaluative research; therefore they indicate the distinct features of case study as:

- Dealing with contemporary events in their natural context.
- Concerned with how things happen and why.

(1998:153)

Merriam indicates that the strengths of a case study, among others, are that:

- It offers a means of investigating complex social units consisting of multiple variables of potential importance in understanding the phenomena.
- It is anchored in real-life situations, and results in a rich and holistic account of the phenomena.
- It offers insights and illuminates meanings that expand its readers' experiences.

(2001:41)

With the above understanding, I opted for a case study as a method of enquiry. As I am interested getting a deep understanding of how my participants from three selected schools understand and implement LCE in their classrooms, this method of inquiry enabled me to use multiple sources of evidence, namely interviews, classroom observations and document analysis, to get a rich and holistic perspective of my participants' experiences, perceptions and practices within the natural settings.

### 3.4 Sampling

Burgess (1982, as cited in Merriam, 2001:60) indicated: "sampling in field research involves the selection of a research site, time, people and events." Patton (2002) suggests that the idea behind qualitative research is to purposefully select participants or sites that will best help the researcher understand the problem and the research question. In the same light, Maykut & Morehouse (1994) advocate that qualitative researchers set out to build a sample that includes people (or settings) selected with a specific goal in mind, that of gaining a deep understanding of some phenomenon

experienced by a carefully selected group of people. It is for that reason that I made use of purposeful sampling.

Given the above, three geography teachers were selected on the basis that they all have a three year Basic Education Teacher Diploma, as this is an employment requirement, and that they are prepared for a learner-centred approach during their pre-service teacher education. Secondly, all participants have been teaching for more than two years, so they have experience in teaching geography – they taught geography for eight years, six years and two years respectively. Therefore I believed that they could provide me with the information that I need in terms of my research goal, which is to investigate and understand how they perceive, experience and practice LCE in geography education.

My research participants consisted of three teachers who are teaching geography Grade 10. The sampling size was decided on the basis that the small number of participants would generate depth of data rather than breadth in the context of the case study and within the limitation of time for a half thesis research report. The population of participants consists of two males and one female teacher. As a geography teacher and the facilitator of geography at circuit level, my participants are well known to me as we used to attend workshops together, and this helped to build a good relationship with them. As Burgess (1985) argued, "the quality of the data is dependent on the quality of the relationship you build with the people under study."

### 3.5 Data collection tools

#### 3.5.1 Triangulation

As with all forms of research, qualitative research has its limitations, therefore I made use of multiple sources of data. Denzin (1970, as cited in Maxwell, 1996:75) refers to the "method of collecting information from a diverse range of individuals, settings, and using a variety of methods as triangulation". Triangulation reduces the risk that your conclusions will reflect only the systematic biases or limitations of a specific method, and allows you to gain a better assessment of the validity of explanations that you develop. As Patton (1990) indicates, no single source of information can be

trusted to provide a comprehensive perspective on the phenomena, so observations, interviews and documentary analysis were used as data collection tools.

### 3.5.2 Interviews

In this study, the intention to understand the perceptions and experiences of my participants about a learner-centred approach prompted me to use interviews. According to Anderson, Herr, & Nihle (1994) an interview is a face-to-face conversation with another person. The purpose of interviewing, according to Patton (1990, as cited in Merriam, 2001) is "to find out what is in and on someone else's mind". He goes on to suggest that since what is on someone's mind cannot be observed or measured, the interviewer has to ask questions in such a way as to obtain meaningful information (*ibid.*).

Different types of interviews exist, however, for the purpose of my study, I opted for semi-structured interviews. According to Merriam (2001) the semi-structured interview is halfway between highly structured interviews and unstructured interviews, and he suggests further that in this type of interview either the questions are more flexibly worded or the interview is a mix of more and less structured questions.

Patton (1990) suggests that interviews permit the observer to go beyond external behaviours to explore the internal states of persons who have been observed. However, Bell (1987) indicated that a danger of the interview is bias. He also indicates that interviewers are 'human beings and not machines' so their manner might have an effect on respondents. As I was aware of these limitations, I explained the purpose of my study to the participants and assured them that the purpose is to understand their perceptions and experiences, and not to evaluate or judge them. I also respected the issue of confidentiality by having participants sign a consent form as evidence of informed consent (see Appendix 2).

However, I acknowledge that interviews have limitations. As Patton (1990) claims, participants can only report their perceptions of and perspectives on what has happened, but those perspectives and perceptions are subject to distortion due to

personal bias. As such to compensate for the weaknesses of interviews, I used observations.

### 3.5.3 Classroom observations

According to Patton (2002) observation in qualitative research involves a researcher taking field notes on the behaviour and activities of individuals at the research site. Patton (1990) suggests that the advantage of observation is that it provides a check on what is reported in interviews. Observations focus on what is happening in a classroom over a limited amount of time and they are best used when the researcher wants to see what is happening in a classroom, as they help reflect what is actually going on rather than what one might hope or assume is happening (Anderson & Arsenault, 1998). Since the purpose of this study is to investigate perceptions and practices of my participants on LCE, I made use of observation to get first hand experience of how participants put their understanding into practice within the context in which they operated – classrooms.

According to Merriam (2001), there are four types of observation: complete participant, participant as observer, observer as participant and complete observer (Merriam, 2001). Since I wanted to get first hand experience of my participants' actions, I entered the field in the shoes of observer as non-participant as I intended not to take part in the activities, but rather to observe actions and make sense of them.

However I acknowledged that observations have limitations. Patton suggests that some of the limitations of observations are:

- The observer might affect the situation being observed in unknown ways;
- Participants may behave in some atypical fashion when they know they are being observed;
- The selective perception of the observer may distort the data.

(1990:244)

Therefore I added documentary analysis to the interviews and observations to compensate as far as possible for the limitations of observation and interviews.

### 3.5.4 Document analysis

Document analysis was my secondary source of data. Patton (1990:233) argues that "documents provide the researcher with information about many things that cannot be observed ... and about which the interviewer might not ask appropriate questions without the leads provided through the documents." Yin also indicates that the strengths of documentations are:

- Stable – can be reviewed repeatedly.
- Unobtrusive – not created as a result of the case study.
- Exact – contains exact names, references, and details of an event.

(2003:86)

However, documents have limitations too. Patton indicates that some of the limitations of documents are:

- Materials may be incomplete.
- The documents may not be authentic or accurate.

(2002:186)

Analysing documents gave me an insight into some of the things that cannot be directly observed or obtained through interviews. Documents analysed included:

- The syllabuses,
- Schemes of work,
- Lesson plans, and
- Assessment activity sheets.

### 3.6 Data analysis and interpretation

According to Mouton, data analysis involves:

> Breaking up the data into manageable themes, patterns, trends and relationships. Interpretation involves the synthesis of one's data into a larger coherent whole, whereby one relates the results and findings to existing theoretical frameworks or models, showing whether these are supported or falsified by the new interpretation (2001:108).

Merriam (2001:178) defines data analysis as "the process of making sense out of data, which involves consolidating, reducing, and interpreting what people have said and what the researcher has seen and read."

Neuman (2000) suggests that qualitative analysis is often inductive. According to Patton (1990:390) "inductive analysis means that the patterns, themes, and categories of analysis come from the data; they emerge out of the data rather than being imposed on them prior to data collection and analyses." In the same light, Maykut & Morehouse (1994:126) argue, "the purpose of data analysis is to understand more about the phenomena we are investigating and to describe what we learn with a minimum of interpretation; so what becomes important to analyse emerges from the data itself out of a process of inductive reasoning." As this study is based on qualitative inquiry, my data analysis employed an inductive analysis approach.

Merriam (2001) suggests that the strategy of data analysis compatible with the inductive, concept building-approach orientation of all qualitative research is the constant comparative method of data analysis. As its name implies, the task of the researcher is to "constantly compare" evidences from different sources and then categories are developed and compared to each other and to other instances (*ibid.*).

My first level of analysis began by reading through a set of all my field notes, interviews and documents from one participant to another, using highlighting pens to colour code different ideas or concepts. I next compared and made sense of the voices, documentary evidences and practices of my participants and made a cross check between what they said, what they do and what is contained in the documents to identify patterns and themes. Then I developed categories, which form the basis of the second level of data analysis.

The second level entailed analysing or interpreting my findings in relation to the existing theoretical frameworks, as outlined in the literature review chapter, with the purpose of finding out whether these are supported by the new interpretation or not.

### 3.7 Research procedure

### 3.7.1 Gaining access

According to Bell (1993) permission to carry out an investigation must be sought at an early stage. Therefore, I sent a written application to the Director of Oshikoto Region, during November 2005, requesting permission to conduct this study in the selected schools in the region. Written permission was granted during December 2005 (see Appendix 1). During February 2006, I telephonically contacted three participants that I had selected purposefully, and invited them to become participants in my research intervention. Thereafter I telephonically contacted the headmasters of the selected schools to inform them of my intention to use their schools as my research sites and promised that I would visit their schools to explain the whole process to them.

### 3.7.2 Entering the field

As indicated earlier, I conducted my study at the selected three schools in Oshikoto region. My fieldwork for this study started during the first week of March, from 6th to 14th March 2006 at school A and during the second week of May, from 15th to 26th May 2006 at school B and school C respectively. My first visit to each school was to ask permission from the school principals to allow me to use their schools as my research sites. I handed over a letter of permission to them from the Regional Director to assure them that I had been granted permission from the relevant authority to conduct my study at the selected schools. Thereafter, I explained to them the purpose of my study and with whom I would work in the school. The issues of confidentiality and anonymity were discussed and agreed upon.

The next step was to meet the teachers involved, and we agreed upon the dates for interviews and classroom observations. I explained to them that the interviews would be tape-recorded and asked them to sign consent forms as a proof of agreement to take part in the research and for me to tape-record the interviews. I asked them what language they would be comfortable to be interviewed in and they all indicated that they preferred the official language – English. I also informed and requested

permission for access to some of their documents such as records of lesson plans, syllabuses, and schemes of work and assessment activities.

I conducted the semi-structured interviews (see Appendix 3) on the following dates: on 6th March 2006, with Ndapandula at school A, on 22nd May 2006 with James and on 23rd May with Hans. All the interviews were conducted in the afternoon after classes, tape-recorded and transcribed for further analysis of data.

Classroom observations were conducted as follow: four lessons in series with Ndapandula from 7th March to 14th March 2006; three lessons in series with Hans from 19th May to 23rd May 2006, and two lessons with James from 22nd May to 25th May. The lessons were tape-recorded to capture everything that took place, however I also took notes of everything that took place in the classrooms. An observation schedule was used to keep me focused on what I intended to focus on (see Appendix 4). Lessons were transcribed immediately for future analysis. After the observation and initial analysis of data, I used stimulated recall interviews (see Appendix 5) to ask for clarifications.

### 3.7.3 Data management

I was aware that data management is very crucial in qualitative research. Anderson & Arsenault (1998) argued that failing to manage data could easily result in loss of your own data. So I developed a case record for each participant and kept all the documents for each participant in its case record for easy access. I also developed a storage box for cassettes to be transcribed and another for those that had been completed. I put labels on each cassette that show the date, the content and the code of the teacher and the school where the information was collected for easy access.

### 3.7.4 Research ethics

As a researcher I was aware of ethical issues that I came across. The issues that I dealt with are anonymity and confidentiality, so I assured my participants that I would treat their identity and that of their schools with respect in my research report. Therefore in reporting the findings I used pseudonyms as follows: I referred to the teacher who is

teaching at school A as Ndapandula, the teacher who is teaching at school B as Hans, and the teacher who is teaching at school C as James. In presenting the data, I used the following codes:

NL1, NL2, NL3 and NL4 – referring to Ndapandula's lessons one to four respectively;
HL1, HL2 and HL3 – referring to Hans's lessons one to three respectively; and
JL1 and JL2 – referring to James's lessons one to two respectively.

Another ethical issue I dealt with is informed consent. I entered into written agreements with my participants to serve as evidence of informed consent, and they also signed a consent form as evidence that they gave me the permission to tape-record the interviews (see Appendix 2). I explained to my participants the purpose of the research so that they understood the nature of the research and its likely impact on them. I also explained to them that they had the right to withdraw from the research at any time if they wished to do so.

### 3.7.5 Validity

Validity in qualitative research refers to the correctness or credibility of a description, conclusion, explanation, interpretation or other sort of account (Maxwell, 1996). Based on that, Merriam (2001) indicates that researchers need to present insights and conclusions that "ring true to readers, educators and other researchers". However in the context of qualitative research there are a number of threats to validity. Maxwell (1996:89-90) indicates, "qualitative research is prone to validity threats due to its interpretative nature – one may impose her or his own framework or meaning, rather than understanding the perspectives of people studied and attach meaning to their words and actions." Merriam (2001:203-204) also warns, "data do not speak by themselves; there is always an interpreter, or translator, so one cannot observe or measure a phenomena/event without changing it." So the issue of subjectivity is linked to the problems of bias. All this reflected that there is an inherent threat to validity in qualitative research.

So in the context of my research, to enhance validity, I made use of the following strategies:

- Triangulation – using multiple sources of data to confirm the emerging findings.
- Member checks – taking data and tentative interpretations back to the people from whom they were derived and asking them if the results are plausible.
- Critical friend – asking a friend to comment on the findings as they emerge.

(Merriam, 2001; and Maxwell, 1998)

Other methods I made use of to enhance validity were to explain to the participants at the beginning of my research the purpose of my study for them to know what was expected of them. I selected participants who are well known to me as a way of establishing good rapport with them.

### 3.8 Limitations

I made use of case study as a method of inquiry, but the literature indicates that this approach has generic limitations. One of the limitations of case study is that it is a small-scale research, involving a small sample, so I could not generalise on the basis of the small sample. However, I believe that the richness of data generated through my case study illuminates the insights this study seeks to generate.

Again, in qualitative research, the researcher is the primary instrument of data collection and analysing of data, and the investigator is limited by being a human (Merriam, 2001). The quality of the product is directly related to the researcher's skills (Anderson & Arsenault, (1998). So being an instrument of data gathering and data analysis and the fact that I entered the field of research, as a novice researcher, this could be a limitation to my study. However, I believe that by using multiple sources of data, and applying member-check strategy to enhance validity, this would minimise these limitations.

The data collection tools I made use of have limitations as sources of information. At some stages I got a sense that some participants saw me as intrusive. To overcome this problem, I re-explained to them that the purpose of my study was not to evaluate, but rather to understand their perceptions, experiences and actions. At other stages I also sensed that some of the participants gave me the information that they thought I needed. So to make up for this weakness, I compared the information they gave me from multiple sources to verify their claims.

### 3.9 Conclusion

In this chapter, I presented an outline of the research procedure. I discussed the research orientation, method of inquiry, sampling, data collection tools, data analysis, research procedure and limitations. In the next chapter, I present the data that I collected through interviews, observations and documentary analysis.

# CHAPTER 4

## PARTICIPANTS' UNDERSTANDING AND IMPLEMENTATION OF A *LEARNER-CENTRED* APPROACH: DATA PRESENTATION

### 4.1 Introduction

In this chapter I report on the findings gained from an analysis of the interviews, observations and documents that I collected from three teachers to investigate their understanding and implementation of a learner-centred approach in geography education.

The following categories are used as a framework for reporting the findings:

Data collected through interviews:

- Background information of participants
- Perception and experience of geography by participants
- Perception of how participants learned geography
- Perceptions and experiences of a learner-centred approach by participants.

Data collected through classroom observations:

- Overview of lessons
- Teaching strategies used by participants.

Documentary evidence:

- The syllabus
- Scheme of work
- Lesson plans of teachers
- Assessment activities.

Evidence considered in discussing these themes is taken to indicate areas of teachers' perceptions and practical knowledge.

## 4.2 Data collected through interviews

### 4.2.1 Background information of participants

The table below summarises the background information of the participants.

**TABLE 4 Background information of the participants**

| | Ndapandula | Hans | James |
|---|---|---|---|
| **School** | Semi-urban school – Junior Secondary School, Grade 8 to 11 | Rural – Junior Secondary School, Grade 8 to 10 | Rural – Senior Secondary School, Grade 8 to 12, Boarding |
| **Sex** | Female | Male | Male |
| ***Grade taught*** | 10 | 10 | 10 |
| **Teacher Qualification/s** | Basic Education Teacher Diploma (BETD) + BEd (Hons.) Leadership and Management | Basic Education Teacher Diploma (BETD) + Further Diploma in Environmental Education + BEd. (Hons.) Environmental Education | Basic Education Teacher Diploma (BETD) |
| **Teaching experiences** | Two and a half years | Six years | Eight years |

As indicated in the table above, all the participants obtained the Basic Education Teacher Diploma as their pre-service teacher education training. The Basic Education Teacher Diploma is a new teacher education programme in Namibia, established to prepare Grade 1 to Grade 10 teachers for a new Basic Education, which is based on a democratic pedagogy – learner-centred approach. Evident from the data is the fact that two teachers have upgraded their qualifications. Ndapandula's further study has focused on Leadership and Management, while Hans has focused on environmental education, which is more closely related to geography. One can also see from the table that all participants have some years of teaching experiences in geography, James being the most experienced in terms of geography teaching, with eight years

teaching experience in geography Grade 10, while Ndapandula has the least experience, with two and a half years teaching experience of geography in Grade 10. Although Hans has taught geography for six years now, he indicated during interviews that this year is his second year of teaching geography at Grade 10 level. Therefore Hans and Ndapandula have been teaching Grade 10 for the same length of time.

Another fact that can be seen from the table is that Hans and James are teaching at rural schools, while Ndapandula is teaching at a semi-urban school.

All the schools are equipped with electricity, tap water and a library, and are therefore considered to be relatively well resourced.

### 4.2.2 Participants' perceptions and experiences of geography

The following questions were asked to capture the participants' feelings about geography:

- Why are you teaching geography?
- What aspects of geography do you enjoy most/least? Why?
- What aspects of geography do your learners enjoy most/least? Why?

The participants all indicated that geography is their area of specialisation and the subject of their interest. These responses reflected that these participants are not teaching geography by accident, but it is the subject of their choice and field of their teaching specialisation. This factor has relevance given the fact that many teachers are not teaching the subjects for which they have qualified. They all indicated that what attracted them to this area of learning is the fact that geography is a practical subject as it deals with real life issues. They also all indicated that geography equips learners with knowledge and understanding about the problems of overpopulation. However, Hans indicated specifically, *"geography equips learners with knowledge and understanding about the need for sustainable development by learning the reasons for deterioration of the environment; it also develops awareness for environmental conservation by learning how human activities affect the environment."*

Ndapandula indicated, *"in physical geography, learners by studying the internal structure of the earth learn to understand the origins of natural disasters such as earthquakes and volcanic eruption and how to deal with them."* James claimed, *"learners by studying topics like climatology and regional geography are prepared for future careers such as fishermen, farmers and even pilots."* He indicated specifically that, *"one could not become a pilot without geographical knowledge."* He also indicated that, by studying climatology, learners understand physical processes such as climatic changes.

All these responses reflected that the participants understand the role of geography in helping learners:

- To develop understanding, which helps them to make sense of current environmental, physical and social problems;
- To make informed judgments and decisions concerning current global problems.

The participants indicated that there are some aspects in geography that they themselves and their learners enjoyed least. For example, Ndapandula indicated, *"I do not enjoy map work, I find the topic difficult to make learners understand."* She indicated further that her learners do not enjoy map work because it has some mathematical calculations and learners do not like topics that deal with mathematical calculations. However, she indicated that she used extra teaching to help learners with difficult topics, whereby she can explain things step by step. She also raised an issue for the need of teacher support in teaching difficult topics like map work, as she stated:

> *I think we need a lot of workshops, at least each term, because so far we only meet once a year. Advisory teachers should help teachers because what they use to do they delegate facilitators to do the work for them. Sometimes these facilitators do not have expertise needed to help other teachers.*

Hans, on the other hand, finds the topic on photographs less enjoyable because to him this topic never comes up in examinations. He indicated specifically, *"it is wasting of time to teach things that never come in examination."* He further argues, *"I am aware that we do not teach for examination, learners need some knowledge, but at least the examinations should cover most of the things that learners learnt."* Hans further indicated, *"my learners do not perform well in map work because of poor background from the previous grades, and because of the stereotype that map work is difficult."* He also raised a concern that there is a need for support from advisory teachers and a need for teamwork so that geography teachers can share information and assist each other either at circuit level, or at cluster levels.

James found geomorphology 'abstract' because it deals with more theoretical topics rather than practical ones. His response indicated that he found it difficult to make learners understand topics that could not be linked to learners' real life experiences. He indicated also, *"even resources to be used for geomorphology are not available."* Despite the challenges of geomorphology, James indicated that he develops models to help learners understand, for example, how plates move. James raised the point here that in a learner-centred approach, geography teachers need to be creative in designing learning support materials. However, he also raised a concern that there is a need for advisory teachers to discuss with teachers the necessary resources for the subject.

The participants indicated that the aspects that their learners enjoyed most are the same aspects they (participants) enjoyed most too, adding that those topics, such as ecology, population geography and regional geography, deal with things which are happening in learners' real life experiences. It is important to note that these teachers' motivation and interest in some topics and lack of interest and difficulty that they experienced in other topics influence the learners' interest and lack of interest in those topics.

### 4.2.3 Participants perception of how they learned geography and teach geography

The participants were asked the following questions to capture their feelings and perceptions on how they learnt geography:

- Did you learn geography when you were in school?
- How were you taught geography when you were in school?

Hans and James indicated that they learned geography up to Grade 12, and Hans commented that the curriculum he is teaching today is the same curriculum he learned when he was in school. However, Ndapandula indicated that she only learned geography up to Grade 9, because geography was not part of the curriculum at the school where she did Grade 10 to Grade 12. Therefore she only learned geography when she was at college.

All the participants indicated that although they were taught through teacher-centred approaches, they are now teaching geography using a learner-centred approach. For example, Ndapandula stated that she involves learners, although she experienced problems with participation of learners due to language problems. For example, she stated, *"when you use question and answer method, you ask them a question but learners might not understand. The problem is language, most of them could not express themselves in English."* Hans also stated, *"I now give chances to the learners to also explain things to themselves or to the class, I will just add to where I think they will not explain it well."* In the same light, he also commented that LCE allows learners to use their knowledge and experience of the topic. James also stated, *"now I gave them chances to discover things on their own, I am just facilitating by giving guideline to what they should do to find information."* He also commented, *"LCE gives learners opportunity to do things on their own, it teach them how to speak in front of others and make learners to be more critical and to use their own initiatives and how to create arguments and reasoning."*

Judging from the evidence above, it appears that the participants found a learner-centred approach appropriate as:

- It allows the learners to use their experiences and pre-knowledge on the topic;
- It allow learners to discover things on their own; and
- It allows learners to develop social, communication and reasoning skills.

### 4.2.4 Participants' experiences and perceptions of learner-centred education

The participants were asked the following questions to capture their perceptions on the learner-centred approach:

- What teaching and learning strategies do you use? How do you feel about them?
- What type of learning activities do you set up for your learners? How do you implement them?
- What teaching and learning materials do you use? How do you feel about them?
- How do you feel about learner-centred as an approach to teaching and learning?

In analysing the responses of the participants, Ndapandula and Hans reflected that they understand a learner-centred approach as a questioning approach as they indicated that they use the question and answer method. For example, Ndapandula stated, *"I use question and answer method if the topic does not require a lot of discussion."* James stated, *"the techniques I use most are question and answer method and discovery method. I want them to become more critical enquiring that so that they learn how to find information on their own."* All the participants understood the learner-centred approach as a participatory and interactive methodology, as they indicated that both teachers and learners play a role in the learning process. For example, Hans indicated, *"The teacher is not the only source of information; there is some basic information, which learners know."* In the same light James also commented *"It allows learners to discover things on their own; the teacher is not the only source of information."* Ndapandula also commented, *"I ask my learners to do research on issues and find information from the community."* Although the participants demonstrated awareness that in the learner-centred approach both teachers and learners play a role in the learning process, the way they interacted with their learners during their lessons falsified their claims, as will be discussed in depth in chapter 5.

The participants also indicated that they use group work. For example Ndapandula commented that if the topic needs learners to discuss or do problem solving together, she divides learners into groups. James also indicated, *"I give them work in group, I make them smaller, because it gives them a chance to each and everyone to talk. When they report back I ask them that everyone should say something."* All these responses reflected that the participants are aware that a learner-centred approach put learners at the centre of the learning process, while teachers play a role as facilitators and providers of information. However, classroom observations revealed that the idea of putting learners at the centre of the learning process is not clearly understood as will be discussed in depth in chapter 5.

All the participants recognised that a learner-centred approach allows learners to use their pre-knowledge and experiences on the topic. For example they all commented that learners enjoyed the topics that deal with things they see in real life. Hence they commented that learners enjoyed topics like ecology, population geography, climatology and regional geography, as these topics deal with real life issues. Although the participants recognised the role of prior knowledge in learning, they way they accessed the prior knowledge of their learners in their lessons revealed that the notion of prior knowledge and its role in learning is not clearly understood, as revealed by the evidence from classroom observations in the next section (section 4.3) and discussed in depth in chapter 5.

In terms of the use of resources, all participants indicated that they experienced problems in teaching due to lack of resources. They indicated that they use some weather instruments although not all of them are available; therefore they ask learners to design models of weather instruments. Ndapandula indicated, *"learners ought to have wide knowledge of the subject not only theory but practical as well."* I think what she meant here is that learners ought to be exposed to a concrete experience to better understand the subject. At all three schools I visited I observed the models of weather instruments designed by the learners themselves. This is a reflection that teachers are trying to bring reality into classrooms. In the absence of some resources, the participants indicated that they only use diagrams from textbooks for the learners to observe the reality. The responses of participants also indicated that the textbooks are important sources of information to them. For example, Hans commented that he

is comfortable with the textbooks that he uses because the contents are in line with the basic competencies in the syllabus. All these responses indicated that use of resources is seen to be important in a learner-centred approach.

In terms of assessment, the participants indicated that they use different types of assessment activities to assess learners' understanding. They all indicated that they give projects, assignments, mastery tests and homework. The participants appeared to understand that in learner-centred education different types of assessments should be used. Hans commented further that he uses questions from old question papers to train his learners for examination. All three teachers mentioned giving a project to learners to design models of weather instruments as part of the assessment. However, an analysis of assessment activities given to learners revealed that the participants only adopted these ideas theoretically, because the way they put assessment in practice is completely different from the way they claimed to understand it. The only type of assessment activities I observed at three schools is a series of short tests given as continuous assessment.

As I probed the feelings of participants on LCE, the responses reflected that they have both positive and negative feelings about the learner-centred approach. When asked about her feelings about a learner-centred approach, Ndapandula responded:

> *It depends on how hard you try. You may try a method but it might not work. You need to stimulate their interests. There are some difficulties in implementing LCE, for example, when you use question and answer method, you ask them a question, but learners might not understand. The problem is the language, if a learner could not express her/himself in English, then he /she might not participate.*

She raised an important point here that to master a certain teaching strategy, it takes time; it takes trial and error. Therefore the problem she experienced with implementation of a learner-centred approach is how to use it to make learners understand and how to involve all the learners in the lesson given the fact that many learners could not express themselves in English. Hans found a learner-centred approach appropriate as it allows the learners to use their pre-knowledge on the topic, while James believed a *"learner-centred approach is good because it gives learners opportunity to develop communication and social skills."* However they also

experienced some difficulties in implementing a learner-centred approach, including lack of resources, and if the topic is not familiar to them, then, learners might not participate. Further, all the participants regard textbooks as the main source of geographical information available to them.

All the responses above revealed that the participants understood a learner-centred approach as an approach that:

- Is questioning
- Is participatory and interactive,
- Empowers learners to take responsibility for their own learning,
- Uses the pre-knowledge of learners as a starting point at each stage of learning,
- Is resource-based, and
- Views assessment as an integral part of teaching and learning.

In the next section I analyse how the participants put their understanding into practice. However, to give a clear picture of what the lessons were all about, I start my analysis by giving a short overview of each unit of work I observed with each participant.

### 4.3. Data collected through classroom observations

#### 4.3.1 Overviews of lessons

Ndapandula was teaching about the syllabus topic ecology, which deals with the deterioration of the Namibian environment in a series of four lessons as indicated in chapter 3. The first lesson was about ecology: deforestation and desertification; the second and third lessons were about pollution of air, land and water; and the fourth lesson was about overpopulation. According to the learning objectives in the syllabus (Namibia. MBEC, 1998) learners will investigate the reasons for the deterioration of the Namibian environment and search for possible solutions.

Hans was teaching about the syllabus topic population distribution and density, in three lessons. The first lesson was about population clusters worldwide; the second

lesson was about factors influencing population distribution and density; and the last lesson was about population and economic growth.

James was teaching about the syllabus topic population dynamics, in two lessons, one of which was a double period (80 minutes). According to the learning objectives in the syllabus (Namibia. MBEC, 1998) learners should be confronted with international and local problems concerning population growth and factors influencing population change and the future lessons will look at consequences of population change.

By coincidence all these topics deal with the same issues, that is, population and environmental education, as these concepts overlap in all three units of works that I observed. These topics lend themselves an enquiry approach including values inquiry that could be integrated with development of geographical skills such as map reading skills by reading maps that show population data, interpretation of pictures and graphs to develop geographical knowledge in terms of understanding, skills, attitudes and values according to the aims and assessment objectives in the syllabus (see Chapter 2: Table 1 and Table 3).

In the next section I analyse the teaching strategies used by the participants to determine the extent to which they promote learning with understanding.

### 4.3.2 Teaching strategies used by participants

In learner-centred education all strategies should be focused on promoting learning with understanding. In analysing the lessons observed, the following strategies have emerged as being used by participants to promote learning with understanding.

*Strategy 1: Informing the learners of the learning objectives of the lessons*

Sharing the learning objectives with learners at the beginning of the lesson is regarded as important in the context of learner-centred education so that learners have a picture of what they are about to learn and how it is relevant to them. In all the lessons I observed, all the participants informed the learners of the learning objectives. For example, Ndapandula informed her learners at the beginning of the lessons as follows:

*Today we are going to talk about problems in our environment – deforestation and desertification. We have to identify the causes of deforestation and desertification (Lesson 1).*
*Today we are going to look at one problem we create to our environment, which is pollution. Today we will concentrate on air pollution (Lesson 2).*
*Let us look at other types of pollution, land and water pollution (Lesson 3).*
*Today we are going to study about overpopulation. We are going to look at: what it is, causes and consequences (Lesson 4).*

Hans also informed his learners at the beginning of his lessons of the focus of the lessons as follows:

*Now we are studying the human population or population of the people. Out of the population we are now studying distribution – population distribution and density (Lesson 1).*
*The factors we listed here are the things that make people or the population either to be densely, or sparsely or unpopulated. We call them factors influencing population distribution and density. Your role now is to explain to the class how these factors are influencing population density (Lesson 2).*
*Today we are going to look at population and economic growth of the world, whereby we are going to look at population and economic growth of the world, whereby we are going to study terms like north and south gap, developed and developing countries (Lesson 3).*

James informed the learners what the foci of the lessons were at the beginning of his lessons as follows:

*Today we are going to talk about population dynamics, where we have two parts: we are going to look at the growth rate of the population worldwide, how is the population differing either from one continent to another that we call world trend. So the effect we are going to look at is how the population grows ever since 1960. Then we are going to look at a very specific country, is a kind of case study that we call it now local trend, or changes of a certain population of a particular country, Namibia (Lesson 1).*
*I asked you to go and find out the definitions of these three terms about the population. Now we have these three terms, about the population. So we have fertility rate, mortality rate and net migration. They are all talking about the growth rate of the population (Lesson 2).*

What one could deduce from the evidence above is that these teachers have accepted the theory of sharing the learning objectives with their learners. However, if one looks at the learning objectives closely, they are all confined to a description of the content

to be covered and are generalised in the form of a broad summary but do not include skills, values and attitudes. Hence, in presenting their lessons, they focused on factual knowledge and understanding and development of map reading skills, at the expenses of values and attitudes. It seems that the participants have understood the definition of learning objectives as referring only to information to be covered in the lesson. I will examine this issue more deeply in chapter 5.

*Strategy 2: Introducing and defining the key concepts*

In all the lessons observed, the participants identified the key concepts around which the content to be learned is structured. For example, Ndapandula was teaching about ecology, and the focus of the theme was the deterioration of the Namibian environment. She identified the following concepts as key concepts: *deforestation, desertification, urbanisation, pollution* and *overpopulation* as related to environmental problems.

Hans identified the following concepts as key concepts in his lessons: *population, population distribution and density*, and *developed and developing countries.* He defined all the concepts for the learners. A very interesting thing that I observed from Hans's lessons is that he attempted to indicate to learners that geography has its terminologies, which have special meaning in geography. For example, he asked the learners to define the concept of density as defined in physical science and then show how it is defined differently in geography.

James identified the following as key concepts: *population dynamics, fertility rate, mortality rate* and *net migration.*

What I learned from the way these teachers defined the concepts is that they view concepts as isolated bits of terminology to be learned through definitions. The definitions of the concepts were not explored in terms of the aims of geography. For example, the concepts below were defined as follows:

> *Deforestation is the cutting down of trees without replacing them (NL1).*
> *Population distribution refers to how people are divided, how people are shared or are living in the world (HL1).*

*Population dynamics refers to how the world population grow/change since 1960 (JL1).*

The evidence above shows that the participants recognised the value of knowing the definition of concepts in learning. However, from the evidence above one could see that they focused on the meaning of the concept at factual levels. It appears also that the participants regarded the meaning of concepts as syllabus-related because the concepts were only defined according to the definitions in the textbooks.

*Strategy 3: Accessing the pre-knowledge of learners on the topic*

The participants indicated during interviews that a learner-centred approach allows learners to use their pre-knowledge. The lesson observations revealed how this particular tenet driving learner-centred education as adopted in the Namibian reform process was applied and understood:

Ndapandula started her lessons by asking the following questions:

*What do we do with trees? For you to have firewood, what do you do? (Lesson 1)*
*What are the three types of pollution? (Lesson 2)*
*Let us look at other types of pollution, land and water pollution. Look in your textbook, page 68. Study the pictures and see how the land is polluted? (Lesson 3)*
*Johanna, how many are you in your family? How many of you are more than ten in the family? To compare which of them are too many? (Lesson 4)*

Hans started his lessons by asking these questions:

*What does the term population mean that you learned in grade 8 and 9? What does population distribution and density mean? What does density in physical science mean? (Lesson 1)*
*Can we have a faster writer to write down the factors influencing population distribution and density on the chalkboard? Your role now is to explain to the class how these factors are influencing population density. (Lesson 2)*
*Mention any two regions or areas in the world where you find densely populated or the two areas in the world, which are densely populated? (Lesson 3)*

James started his lessons, which was about population dynamics, by asking:

*Do you know what population dynamics means? (Lesson 1)*
*Who can define the terms, fertility rate, mortality rate and net migration? (Lesson 2)*

Evidence from these lessons as indicated by selected examples above revealed the following:

- Firstly, prior knowledge is viewed as pre-knowledge of the topic in the context of specific content that had been covered in earlier lessons.
- Secondly, it is identified as primarily syllabus-related.
- Thirdly, it is identified as accessed through direct teacher questions and verbal answers from the learners and was not accessed using any other strategies.

*Strategy 4: Asking questions*

Asking questions was a common strategy used by the participants. All the participants planned the questions around which their lessons were structured. The examples below are some of the questions asked by participants and the responses given by learners to the questions.

Ndapandula's questions and responses from learners:

*Q: What are the man-made causes of deforestation and desertification?*
*A: agriculture, urbanisation, cutting down trees to build houses.*
*Q: How could farming lead to deforestation and desertification?*
*A: poor farming lead to deforestation.*
*Q: What problems are we going to experience as a result of deforestation and desertification?*
*A: poor rainfall, soil erosion, shortage of oxygen.*

Hans's questions and responses from learners:

*H: What is the difference between developed and developing countries?*
*A: developed countries are countries that provide more goods and services; and developing countries are countries that provide few services.*
*H: Another person to define the difference between developed and developing countries, thank you?*
*A: developed countries are countries that are rich; and developed countries are countries that are poor.*
*H: Now give example of developed countries?*
*A: North America.*

*H: Is North America a country or a continent? I said countries.*
*A: America.*
*H: USA, yes. What else?*
*A: Germany.*
*H: Developing countries?*
*A: Namibia, Angola.*

James's questions and responses from learners:

*J: How was medical science in the past?*
*A: it was very poor. Very weak.*
*J: What do people use?*
*A: they use leaves.*
*J: How do we call those one?*
*A: Herbs.*
*J: Were those herbs very much efficient?*
*A: No.*
*J: What are the problems with those herbs? Come on people; think fast. Are they strong?*
*A: No.*
*J: They are.*
*A: But they did not know how to use them so that they can cure specific diseases.*
*J: They do not know what?*
*A: they do not how to give them to people.*
*J: They know.*
*A: Yes they know, but they did not know how to mix them with other so that they can cure many diseases, because they were not educated*
*J: People in the past were not educated how?*
*A: in a scientific way.*
*J: Very good, that is what was lacking because they do not measure or give what*?
A: *correct doses.*

If one looks at Ndapandula and Hans's ways of questioning, it seems that they understood questioning as a way of checking whether the learners know the right answers, because they accept learners' answers as they are. Another thing worth mentioning is that it seems that Ndapandula and Hans understood their roles as that of asking questions and receiving answers from the learners, while the role of the learners is to answer teachers' questions. James's way of questioning was more exploratory compared to that of Ndapandula and Hans, since he asked probing questions and he also encouraged the learners to think about what they are saying and to elaborate their responses. What is interesting about James's questions is that they also encouraged pupils to use language, to say more during the lesson. However, what

was common in the ways of questioning for all the participants was that they dominated the questioning process, as most of the questions asked were teacher-initiated. I only observed one instance during Ndapandula's lessons when the learners were given an opportunity to ask their own questions on the topic, after discussing the causes, problems and solutions to air pollution, as a quiz. The questions asked by the learners were: *"Which countries contribute more to the hole in ozone layer? Why is air pollution harmful to all living organisms?"*

These questions reflected that learners have unanswered questions and are curious to know more, unfortunately, they were seldom given the opportunity to ask these questions. These questions were answered by learners themselves as follows, to the first question, the answers given were, *'Namibia and America'*. To the second question, the response given was, *'air pollution is not needed because it causes skin cancer when a hole forms in the ozone layer, UV passes through and causes skin cancer'*. The teacher has accepted learners' responses as they are, except when he asked whether America is a country.

Another thing that I observed in the three classes was that the waiting period for the learners to think about the answers was too short, and sometimes the teachers answered the questions themselves or gave a clue or simplified the questions for the learners to find the answers quickly. Hans commented on this issue during post classroom observation discussion:

> *Sometimes I am forced to explain things myself, because we do not have plenty of time. Time management is very much important more especially in grade 10, whereby you have to cover the syllabus before July. It was not just a matter of finishing but was a matter of making sure that you cover the syllabus.*

James also commented on the issue of limited time allocated to geography when I asked him why he gave clues when the learners hesitated to answer the questions, *"The purpose is to facilitate them so that they can understand based on the clues that are given. This also helps to manage time, in other words not much time will be wasted during the lesson. We have only three periods per week."*

All the evidence above revealed that:

- The participants, except James who asked exploratory questions, understood questioning as a way of checking whether the learners know the right answers.
- They understood the questioning process as a responsibility of teachers only.
- They felt that three periods allocated to geography are too few; as a result the teachers are forced to rush to cover the material within a limited time.

*Strategy 5: Using local examples*

Another strategy used by all the participants is using local examples in defining and explaining things to the learners. For example, Ndapandula used an example of Ondangwa Town, a town near the learners' community, as an example of how urbanisation can cause deforestation, by explaining that for the town to be established, trees were cut down. However, Ndapandula did not clarify the tension that exists between development and environmental conservation. She also used an example of people from Namibia who when they were in exile, in Angola and elsewhere, were called refugees, to help learners not only to understand the concept of refugees, but also to understand why people become refugees.

Hans too used an example of how Grade 10 learners are divided into four classes, to help learners understand the concept of population distribution. But if one looks at this example closely, does it really help learners to understand the concept of population distribution? He also used an example of two families, one with ten people but with enough food, while another one has two people but without food, and then asked learners to explain which family is overpopulated, to help learners understand the concept of overpopulation, that it refers to "*the condition when the resources in the country are not able to sustain the population rather than to the number of people.*"

James also asked his learners, when they were talking about fertility rates, to give an example of which people in the population are referred to when talking about fertility rates, for learners to understand that fertility rates refer to the number of women in the population.

The evidence above revealed that:

- The participants find it difficult to use appropriate examples that really help learners to understand the new information.
- They understood giving examples as the role of teachers only, as such they find difficult to bring the perspectives of learners into the work of the school.

*Strategy 6: Using resources*

Using resources was another strategy used by participants to develop conceptual understanding. The textbooks, as well as photographs or pictures and maps in the textbooks, were the main resources used by all the participants as a basis for their discussions. In all the lessons I observed with Ndapandula and James, they used activities in the textbooks as informal assessment activities. For example Ndapandula used the picture in the textbook as a basis for their discussion about water pollution, by asking the learners to explain how the people in the picture are using the river, how they pollute water through the ways they are using the river. Then from there, she contextualised the lesson by asking learners to think about the common causes of water pollution in their areas built on what they saw in the diagram. James also used the activities in the textbooks by asking learners to interpret population statistics, in the form of tables, maps and graphs. Hans developed worksheets and handouts by making copies from reference books to supplement information in the textbooks and set up the questions based on the information in handouts as class activities.

What one can deduce from the evidence above is that the participants depend on the textbooks as the only sources of information. Dependency on the textbooks by the participants was also reflected by the appearance inside the classrooms. The walls of the classrooms that I visited were bare; nothing was displayed on the walls.

*Strategy 7: Using group work*

Ndapandula and Hans used this strategy. The learners were given activities to do in groups. For example, Hans instructed his learners orally to work in groups and to do

an activity about population distribution and density where the learners had to use the map key and arrange letters as shown on the map under the headings: densely, sparsely and unpopulated, which are represented in the map key by different shadings. Thereafter learners were asked to report the answers by individuals writing down the answers on the chalkboard (HL1). When I asked him why he preferred to use a chalkboard for recording the answers, he responded that:

> *It is where all other learners can see. By recording in summary books some learners will not benefit, they would not get the answers because some of them are slow learners. The slow learners can look on the chalkboard what others are doing.*

In another lesson Hans prepared handouts with information about developed and developing countries, for the learners to read the information and identify the difference between developed and developing countries in terms of economic indicators such as GDP, birth rate, money values and birth rate, relying solely on the descriptions and the map that shows the north/south division with no other stimulus materials. Thereafter learners were asked orally and as a whole class to explain the difference between developed and developing countries, to give examples and to suggest indicators of economic development (HL3).

Ndapandula also divided her learners into groups to discuss the solutions to environmental problems such as overgrazing, cutting down trees for firewood, wood carving, using trees for building materials and charcoal production. There were no stimulus materials as learners were warned not to use any textbooks. Each group came up with one solution and was then asked to report back (NL1).

What I observed as common to these two teachers was that they served as observers, in the sense that they did not intervene in what the learners were doing; and they just served as timekeepers reminding the learners of the time left while the learners were busy doing the activities. For example, at one point Ndapandula asked one learner, "*are you part of the group?*" she did not attempt to find out why the learner kept himself aside from the rest of the group.

Evidence from selected group activities as indicated above revealed that:

- The participants have a lack of understanding of the role of group work in the learning process.
- They have a lack of understanding on how to organise learners to work together effectively.
- They have a lack of understanding on how to use stimulus materials, rather than textbooks, as a basis for group discussions.
- The participants understood their roles as to observe and manage time while the learners are working in groups.

### 4.4 Data collected through documentary analyses

In order to understand why the participants perceive and practice a learner-centred approach the way they did, I undertook to study some of the documents. The documents I looked at were:

- Syllabus,
- Scheme of work,
- Lesson plans of teachers, and
- Assessment activities given to the learners.

*The syllabus*

I analysed the syllabus to find out to what extent it guides the teachers in the implementation of a learner-centred approach and how they should develop knowledge, understanding and skills. Table 5 below indicates how the learning objectives and the basic competencies are defined in the syllabus in Theme III: Ecology, on which Ndapandula's lessons were based, and Theme V: Population geography, on which Hans and James's lessons were based.

**TABLE 5 A sample of learning objectives and basic competencies as defined in Geography Grade 10 syllabuses**

| TOPIC | LEARNING OBJECTIVES | BASIC COMPETENCIES |
|---|---|---|
| **THEME III: Ecology**<br>The deterioration of the Namibian environment | Learners will:<br>Investigate the reasons for the deterioration of the environment and search for solutions. | Learners should be able to:<br>1. Distinguish between natural causes and man-made causes.<br>2. Describe farming methods as a cause of deforestation and desertification.<br>3. Explain the effect of population explosion as a world-wide as well as a Namibian problem.<br>3. Describe pollution of the land, water and the atmosphere.<br>4. Suggest solutions for problems from their own vicinity, e.g. population education, environmental education, sustainable production, etc.<br>5. Transfer and apply this knowledge to the solution of problems in other areas. |
| **THEME V: *Population* geography:**<br>**1. Population distribution and *density*** | Learners will:<br>*Identify major* population clusters, and understand the factors influencing *distribution and* density. | Learners should be able to:<br>1.1 *Identify on a map major population* clusters worldwide and in Namibia.<br>1.2 Briefly discuss factors influencing population distribution and density. |
| **2. Population dynamics** | Be confronted with *the international* and local problems concerning<br>(a) Population growth<br>(b) Factors influencing population change | 2.1.1 in terms of world trends<br>(a) *Describe the rapid growth of the world* population since 1960.<br>(b) List cities with more than a million inhabitants<br>(c) Find reasons for this rapid growth.<br>2.1.2 in terms of national trends<br>(a) Describe the population growth in Namibia since 1960.<br>(b) Identify different patterns of growth in different regions.<br>(c) Compare the Namibian situation with a developed and a developing nation.<br>2.1.3 Explain fertility, mortality and net migration<br>2.1.4 Discuss factors influencing fertility, mortality and net migration. |

(MBEC, 1998:6)

As one can see from the table above, the learning objectives and basic competencies are defined as a list of knowledge and understanding to be developed in the themes.

Since the aims of geography are listed separately from the syllabus content at the beginning of the syllabus (see chapter 2: Table 1), and assessment objectives listed at the end of the syllabus (see chapter 2: Table 3), what I observed during lesson presentations is that teachers plan their lessons starting with the learning objectives and basic competencies without considering the aims and assessment objectives, as there are no guidelines in the syllabus on how the teachers should use and translate the aims and assessment objectives into learning and assessment activities. In addition, the syllabuses did not provide guidelines on how assessment activities such as projects should be set up and which topics are suitable for practical assessments like projects. As a result, teachers only used a series of short tests as continuous assessment.

In terms of teaching aids, the syllabus indicated that learning support materials such as a globe, wall maps of the world, wall maps of Namibia, U-tube thermometers (maximum and minimum), wind vanes and rain gauges should be used. The syllabus stipulates further that teachers could also make use of the application of skills and other opportunities for practical work and assignments in continuous assessment by letting learners make teaching aids for use in class. However, the syllabus did not indicate explicitly what other learning support materials apart from maps and weather instruments should be used to supplement information from textbooks. As a result, the participating teachers relied heavily on information from textbooks and did not use other sources of geographical information.

*The schemes of work*

The regional office, through the advisory teachers' department, provides the schemes of work used by the teachers, so all the participants use uniform schemes of work. The example below shows a sample of a Unit I: Theme III: Ecology

Topic: deterioration of Namibian environment

Unit 1 (natural and man-made causes)

- Can define and understand the following concepts: ecology, ecosystem, biomes, equilibrium and disequilibrium.
- Be able to identify and give examples of man-made causes of deterioration of the environment.

- Be able to identify and give examples of natural causes for deterioration of the environment.

From the examples above one can see that a scheme of work is just a list of content to be covered, and one can conclude that the scheme of work does not show explicitly what knowledge and understanding, skills, values and attitudes are to be developed in each theme. As a result, teachers planned and presented their lessons at knowledge levels only as guided by the scheme of work (see Appendix 6 lesson plans, samples A and B).

*Lesson plans of teachers*

Only Ndapandula and James write their lesson plans systematically. Hans did not keep a record of lesson plans. In planning their lessons, Ndapandula and James consider the following issues in common in planning their lessons: the learning objectives, the content to be covered, the resources to be used, how the pre-knowledge of the learners will be accessed, teachers' activities including the questions to be asked and instructions to be given, and learner's activities (see Appendix 6 – sample A for James, sample B for Ndapandula). A close look at the teachers and learners' activities revealed that the participants only use the learning objectives and basic competencies as a basis in planning their lessons. At the same time, the lesson plans revealed that the participants use the textbooks as the only source of geographical information.

What emerged from lesson plans is:

- The participants do not understand the role of the aims and assessment objectives in the syllabus as they only used learning objectives and basic competencies in the syllabus in planning their lessons.
- They regarded knowledge as given, by just relying on the textbooks as the only source of information.

*Assessment activities*

Although the participants mentioned during interviews that they use different types of assessment activities, such as tests, projects, assignments and homework, the samples of assessment activities that I collected from them revealed that they only use tests as continuous assessment (see Appendix 7: sample A – James, sample B – Hans, and sample C – Ndapandula). By looking at the types of questions asked, many of the questions are based on factual recall, interpretation of geographical data represented in the form of maps, graphs, tables, mind maps, pictures and case studies. What is common about most of the question papers is that 80% of questions are based on the questions that do not go beyond comprehension levels. Only a few questions required high order thinking, e.g.

> *Why do local people use natural materials for building? Give reasons.*
> *How can the use of these natural materials have serious consequences for the environment?*
> *How can the local people ensure that they have natural building materials for the future?*
> *Explain how education can reduce the destruction of the environment?*
> *Why is education alone not enough to save the environment?*

These questions encourage the learners to think more deeply about the issues. Although the participants indicated during interviews that they give projects to their learners, the only project that I observed at the time I visited those schools was the designing of weather instruments by the learners.

It seems also that the format of examinations influences the types of questions asked as assessment. For example, Hans indicated that he made copies from old examination papers to train his learners and to familiarise them with the format of examinations. The type of questions he set up for his learners validated his claim. The questions were all copied from old examination papers and required the right answers from the learners (see Appendix 7, assessment activity sample B). The types of questions set up by James and Ndapandula reflected the same format as those of Hans; they all required the right answers from the learners (see Appendix 7, sample A – James's assessment activity and B – Ndapandula's assessment activity). In addition, Ndapandula reminded her learners at the end of lesson 3, "*in the examination you must be aware of how a question will look like. You must be able to interpret pictures*

*like that one"*. James reminded his learners at the end of lesson 1, *"but make sure that you do understand those diagrams. That is what I always tell you that in geography you might not come across the question without any diagram or any source"*. Although it is not bad to emphasise what learners are expected to know for examination, as the participants emphasised, one could conclude that these teachers put more emphasis on what is required from the learners for the final examination, than on what knowledge, skills, values and attitudes learners are expected to develop.

The evidence as indicated above revealed that:

- The continuous assessment is understood as a series of tests that consist of questions that call for the right answers.
- The format of examinations influenced the types of questions these participants set up for their learners as assessment activities.

**Summing up**

By cross-checking the participants' understanding of a learner-centred approach from different sources I made use of, such as interviews, classroom observation and documentary analysis, it appears that there are gaps between their perceptions and their implementation of a learner-centred approach, and so I could not accept their apparent understanding of a learner-centred approach. I will discuss these gaps in depth in chapter 5, where I assess the participants' implementation of LCE against the key ideas of social constructivism, as a theory of learning underpinning learner-centred education.

## 4.5 Conclusion

In this chapter, I presented an analysis of data as collected through interviews, classroom observation and documentary analysis. In the second layer of data analysis, the following themes will form the basis of my discussion in the next chapter:

Theme 1: participants' theoretical understanding of a learner-centred approach.
Theme 2: participants' practical understanding of a learner-centred approach.

Theme 3: issues and challenges in teaching geography through learner-centred approach.

# CHAPTER 5

# DISCUSSION OF FINDINGS

## 5.1 Introduction

An analysis of the participants' perceptions and implementation of a learner-centred approach, in chapter 4, revealed that there are gaps between the way the participants spoke about LCE and the way they implemented it. Although the participating teachers were able to articulate during interviews the key ideas of learner-centred education, evidence from classroom observations revealed that these teachers have understood the key ideas of LCE only superficially. Therefore in this chapter I analyse in depth the participants' perceptions and implementation of LCE against the key characteristics of a social constructivist teacher as identified from chapter 2 to point to the fundamental gaps between the teachers' theoretical understanding and their real understanding of LCE. I hope that this analysis will provide insights from the perspective of my case study about where we are after sixteen years of the reform process in Namibia.

In this second layer of data analysis, the following themes are considered:

- Participants' theoretical understanding of a learner-centred approach;
- Participants' practical understanding of a learner-centred approach; and
- Issues and challenges in teaching geography through a learner-centred approach.

## 5.2 Participants' perceptions of a learner-centred approach

In undertaking this study, I attempted to answer my research question, which consisted of the following two sub-questions:

- How do the selected geography teachers perceive a learner-centred approach?

- How do the selected geography teachers implement a learner-centred approach?

In this section I discuss the findings to the first question: how do the participants perceive a learner-centred approach? As indicated in chapter 2, a learner-centred approach was adopted in Namibia as a reform pedagogy that replaces a 'transmission' style of teaching, in which the teacher was the 'the only source of information and ideas" to one in which students learn through activities (Namibia. MBEC, 1993). A learner-centred approach as adopted in Namibia is underpinned by a widely accepted theory of learning, namely social constructivism. The central idea of social constructivism is that we learn about the world through actively making sense of it for ourselves (Baynes & Todd, 1995, as cited in Roberts, 2003). This implies as indicated in chapter 2 that in a learner-centred approach teachers need to adopt new meanings of what knowledge is, what it means to know and what the optimal conditions are under which learning occurs.

All the participants indicated during interviews that although they were taught through a teacher-centred approach, they accepted that they are now teaching their learners through a learner-centred approach. They all shared common views about a learner-centred approach, including that:

- It involves learners in the learning process;
- It allows learners to share ideas;
- It allows learners to construct their own knowledge;
- It allows learners to use their pre-knowledge and experiences on the topics; and
- It allows learners to discover things on their own.

If one looks at this evidence at a glance, it gives an impression that the participants are well informed about the central idea at the heart of social constructivism as a learning theory, which is, "we learn about the world only through actively making sense of it for ourselves" (Baynes & Todd, 1995, as cited in Roberts, 2003; Gray,

1997; Edward, 2000). One might conclude here that the participants are in agreement about the values of a learner-centred approach as an appropriate method for learning.

The interviews therefore revealed that teachers were able to articulate the key ideas underpinning social constructivist theory. When related to the views expressed by thinkers such as Edwards (2000), Vygotsky, Pulist (n.d.) and others explored in chapter 2, the perceptions of the teachers appeared to embrace a sound understanding of the theoretical ideas within which Namibian learner-centred education is situated. The manner in which the participating teachers spoke about a learner-centred approach revealed that they have indeed been exposed to the theoretical position within which the reform epistemology and pedagogy is situated through both their pre-service education and through in-service professional development.

Now the question is: to what extent do these teachers apply all those principles in practice in their classrooms? Before analysing this question, as well as the key question, which asks about teachers' real understanding of the articulated tenets, it is worth highlighting the difficulties that these participants claimed to experience in implementing a learner-centred approach in geography, which are reiterated here:

- Ndapandula and Hans indicated that they find it difficult to teach practical topics such as map work through a learner-centred approach because the topic is difficult; it needs a lot of calculations.
- James indicated that it is difficult to teach theoretical topics such as geomorphology; because there are no resources to help learners understand things, which are not familiar to them.
- They all indicated that it is difficult to use a learner-centred approach if there are no resources.
- Hans and James reported that too few periods – three periods per week – allocated to geography make it difficult to teach through a learner-centred approach.

The challenges raised by these teachers added to the sense that they are trying to understand and 'internalise' the notion of learner-centred education. However,

findings from classroom observations revealed that these teachers had not yet reached a state of 'equilibrium' in their understanding of LCE, as the way they implement a learner-centred approach revealed that there are gaps between their theoretical understanding of a learner-centred approach and their real understanding of it.

Therefore in the next section, I draw links between the theoretical understanding of the participants of a learner-centred approach and their implementation of it by focusing on how the participants applied their theoretical understanding of a learner-centred approach in classroom.

## 5.3 Participants' practical understanding of a learner-centred approach

As indicated in chapter 2, a clear understanding of how children learn and the theories underpinning the new view of learning is central to successful implementation of a learner-centred approach. While the interviews revealed that the participants were able to articulate the key ideas underpinning social constructivist theory and shared common views about a learner-centred approach, classroom practices revealed that each participant 'internalised' the meaning of what a learner-centred approach entails in her or his own way.

In discussing teachers' practical understanding of a learner-centred approach, I consider the following themes as reflecting teachers' practical understanding of a learner-centred approach:

- Use of prior knowledge;
- Asking questions;
- Involving the learners;
- Use of resources; and
- Assessment

### 5.3.1 Use of prior knowledge

Proponents of a social constructivist theory of learning argue that learners learn better when what they learn is linked to what they already know (Bennet & Dunne, 1994;

Roberts, 2003; Namibia. MBEC, 1996). The social constructivist theory of learning recognises the prior knowledge and prior experiences that learners bring to a classroom setting, some of which may be hazy or incorrect. As indicated in chapter 2, one role of accessing the pre-knowledge of learners is to determine what the learners already know about the topic at the onset of the lessons, so that the teacher will teach them accordingly. Another role is to find out if there are misconceptions, so that if they are detected, they will be corrected accordingly. Therefore teachers are expected to access the pre-knowledge of learner and use it as a starting point at each stage of learning. As indicated in chapter 2, geography as a practical subject, dealing with real life issues, provides more opportunities for the new topics to be linked to real life experiences of learners.

Although I expected to see teachers providing opportunities to learners to draw lessons from their own experience of life outside school, this was minimal. Only in two out of nine lessons were learners given opportunities to use their prior knowledge at the beginning of the lesson. This revealed that although the participants are familiar with the concept of prior knowledge, the meaning they attached to it does not comply with how it is viewed from a social constructivism position. The participants viewed pre-knowledge as syllabus-related knowledge, based on what was learned in previous lessons. I say this because most of the questions they planned to access the pre-knowledge of learners were based on what was learned previously. Considering the fact that the participants claimed that they were taught through a teacher-centred approach, it appears that although exposed to the concept of pre-knowledge during their pre-service teacher education, I speculate that they do not have a real understanding of pre-knowledge as that which is part of the general frame of reference that learners have acquired in the community as a basis for developing new knowledge, as thinkers such as Bennett & Dunne (1994), Roberts (2003), Pearce (1987) and others, as explored in chapter 2, have claimed. Findings also showed that teachers are unclear of what strategies to use to access the pre-knowledge of learners since they understood and regarded oral questions by the teacher and verbal answers from the learners as the only strategies to use to access the pre-knowledge of learners on the topic. If geography focuses on studying a wide range of places, processes and patterns at a scale ranging from local to global, one could expect teachers to use a

wide range of strategies and stimulus materials to explore learners' prior knowledge on the topic rather than just using oral questioning.

So, from the evidence above, it appears that teachers have a limited understanding of what pre-knowledge is and what role it plays in the learning process. Considering the fact that one of the goals of the new Basic Education system in Namibia, more especially of a learner-centred approach, is to make education more accessible to all the learners irrespective of their different cultural backgrounds, one can ask, in which ways and in how many geography lessons these teachers make geographical knowledge accessible to all the learners if the concept of pre-knowledge is not clearly understood?

My other concern in this matter is about the professional development programmes that are given to teachers as in-service training. Did these programmes provide these teachers with opportunities to reflect on their understanding of what the key concepts and ideas underpinning LCE are, such as what prior knowledge is and how one might access it? Since this study precludes generalisation, all I could conclude based on the evidence revealed by this study is that if real transformation of the education system is to take place, teachers should be equipped with a clear understanding of the key ideas and the rationale behind the use of teaching and learning strategies associated with a social constructivist theory of learning in which a learner-centred approach as adopted in Namibia is embedded.

### 5.3.2 Asking questions

Geography protagonists such as Roberts (2003), Rawling (1987) and Van Harmelen, (2005) as explored in chapter 2, emphasised the role of questioning in developing geographical understanding. The syllabus, through the aims of geography and the assessment objectives, stipulates the kind of knowledge to be developed in learners as explored in chapter 2. So one could expect teachers to use the aims and assessment objectives in the syllabus as guidelines on what type of questions to ask to develop the required geographical knowledge focusing on factual recall, analysis and interpretation of geographical data, and application of geographical skills, judgment

and decision-making skills, as all these are the types of knowledge learners are expected to develop in geography according to the syllabus (Namibia. MBEC, 1998).

Analytical questioning as a teaching/learning strategy consequently provides insights into aspects such as teachers' understanding of the essential conceptual framework of the subject being taught, their views about how to access and to assess the concepts, skills, attitudes and values that are a part of the subject framework. Further to this, questioning techniques provide insights into how teachers understand the key tenet underpinning the reform process, that of learning as understanding

Findings revealed that all the participants recognised the importance of asking questions in generating geographical knowledge as a question and answer method dominated their lessons, however it appears that they are unclear about how questions can be utilised within the total dimension of the subject framework as indicated in the curriculum aims and objectives. The questions in the lessons I observed focused on factual recall and the application of geographical skills, such as reading and interpreting maps, photographs and tables showing geographical phenomena and population data.

The types of questions asked did not touch on the values and attitudes dimensions of the subject. Ndapandula's theme serves as a good example, as they explored the reasons for deterioration of the Namibian environment. They explored the causes of deterioration of the environment and they suggested solutions. However, what I observed was that learners were not asked to think whether the solutions they have suggested, such as "*stop cutting down trees, use solar energy, build modern houses*" etc. are feasible in their own community considering the social and economic status of their own people. In this theme one could expect teachers to involve or engage learners in solving problems based on real life issues for them to understand and develop awareness of how decisions, for example, concerning solving environmental problems are not easy to take. These types of questions could help learners to develop problem-solving and decision-making skills, as it is one of the goals of a new education system in Namibia.

It appears that teachers, by focusing on the content rather than the aims and assessment objectives when planning their questions, view the syllabus content as an end in itself rather than a means to an end. For example, all the lessons observed focused on the interrelationships between human activities and the environment and the resulting environmental problems. Teachers could have asked problem-solving questions aimed at providing opportunities for learners to explore socio-economic as well as political dimensions of environmental problems so that they could develop a sophisticated understanding of the causes of environmental problems, while at the same time developing awareness for the need for economic development and environmental conservation as specified in the aims of geography. These types of questions could help learners to develop an understanding, awareness and appreciation that most of the environmental problems are created through people's attempts to improve their way of life – an understanding of what is mean by interdependence between human activities and the environment.

I therefore conclude that the participating teachers are unclear about the aims of geography and the learning outcomes, as defined by the assessment objectives that learners are expected to achieve in covering geography curriculum for the junior secondary phase. This also means that the participants are unclear of what kind of knowledge the geography curriculum intends to develop in learners. So the gap I identified here is that the participants lack an understanding of how to interpret the curriculum and translate it into their daily lessons, which causes them to focus on syllabus content only.

The evidence above makes one question the role of the syllabus as a guiding document to teachers. When I analysed the syllabus to determine the extent to which it guides teachers in the implementation of a learner-centred approach and the development of geographical skills, I was shocked to learn that there are neither guidelines on how teaching should be approached, nor guidelines on how teachers should incorporate the aims and assessment objectives in their daily lessons. So teachers are left to rely on their own professional judgment on how they should put all three dimensions of the syllabus together – the aims, content and assessment objectives. While this approach to curriculum development could not be condemned as it provides more autonomy to teachers to make personal choices regarding

curriculum management and evaluation if they have the skills to do so, in a new education system, as in this case, just sixteen years since educational reform was adopted, it seems that teachers are still in the process of establishing a state of 'equilibrium' as revealed by this study, which was disturbed by the new innovations. So the challenge as identified by Kickbusch (1996) that if policy documents are not consistent with a learner-centred approach, then teaching for understanding will be impeded, is affirmed. This study revealed that teachers are interpreting the syllabuses as they are. I therefore believe that there is a need for teacher support as revealed by this study, starting with the syllabus, by providing guidelines on how teaching and learning should be organised, and most importantly what types of questions should be asked in geography if teachers are to develop the required geographical knowledge in learners.

Another significant thing revealed by this study is the role of asking questions in the learning process. Since a learner-centred approach values the active construction of knowledge by the learners themselves, as thinkers such as Gray (1997), Baynes & Todd (as cited in Roberts, 2003) and others have suggested, as explored in chapter 2, I expected the participants to give learners more opportunities to generate their own questions, and in the process construct their own knowledge. However, only in one lesson with Ndapandula did I observe learners given opportunities to ask their questions, and the type of questions asked by the learners revealed that they have unanswered questions and are curious to know more. Unfortunately those opportunities are rarely given, as revealed by this study.

Lester and Onore (1990, as cited in Gray, 1996), as indicated in chapter 2, argue that teachers' definition of what knowledge is and how it is acquired, and how one determines whether knowledge has been acquired, accounts for the degree of changes and kinds of changes teachers will experience. This study reveals that the view of knowledge and how it occurs as adopted by the social constructivist theory of learning is in conflict with what the participants have accepted and 'internalised'. For example, the way Ndapandula and Hans posed questions to their learners reflected that they viewed questioning as a process of 'withdrawing' information from learners, since they just accepted learners' responses without adding, elaborating or asking for clarification, except when the response given was incorrect and they searched for the

correct answer. This means that the participants do not listen to what their learners are saying, instead they listen to what they want to hear. As such one could conclude that they view knowledge as bits of facts that learners accumulate that could be reproduced through questions that require one right answer and which are teacher-initiated. The way the participants (Ndapandula and Hans) interacted with their learners during the questioning process revealed also that they are unclear of the significant role that teachers should play for meaningful learning to take place, which is defined by Vygotsky's notion of zone of proximal development (Bennet & Dunne, 1994) and the notion of scaffolding (Webster *et al.*, as cited in Roberts, 2003) which also originated from the work of Vygotsky as discussed in chapter 2.

The only instances where I observed the significant role played by the teacher during the questioning process were in James' lessons. Although his questions were also syllabus-based, at least he managed to stimulate learners' thinking by asking open-ended questions and follow-up questions, by probing and giving clues whenever the learners hesitated to reach the required answers. A good example is when they were exploring the factors influencing rapid population growth since 1960, one of which is advances in medical science. They explored the changes between medical science in the past and medical science today. He probed and probed until the learners reached a point that doctors in the past were not educated in scientific ways compared to the scientific doctors we have today. These type of questions really encouraged learners to think rather than just copying information from textbooks.

In the light of the above, what I observed was that when the teacher asked open-ended questions, it provide more opportunities for learners to think, unlike asking closed questions that require one right answer, as dominated Ndapandula and Hans's lessons. One could speculate that James's ability to ask open-ended questions could be due to the length of his teaching experience compared to the other two teachers: the fact that James has been teaching for eight years now may have developed his expertise in how to ask questions that call for thinking skills. He is also the only one who indicated during our interview that a learner-centred approach allows learners to develop critical thinking, reasoning and problem-solving skills. One could see that developing critical thinking and reasoning skills in his learners is his target. However the main finding of this study concerning the process of asking questions is that all the

participants dominated the questioning process, as most of the questions were teacher-initiated. As a result learners' perspectives were not considered enough, they were too confined to the role of answering questions. Therefore I suggest here that teachers need support on how to engage their learners actively in the process of constructing knowledge by giving learners the opportunities to ask their own questions.

In conclusion it would seem that Van Harmelen's (2004) assertion that there is a need for conceptual understanding by the teachers of the ideas, the key concepts and organising structures that are embedded in particular discipline, if they are to implement a learner-centred approach successfully, is affirmed. Based on Van Harmelen's ideas, one could ask, to what extent do these teachers have a deep understanding of what geography is and how different dimensions of the subject are and should be taught in integration?

### 5.3.3 Involving the learners

Social constructivism emphasises the role of other people in helping us to make sense of the world. As indicated in chapter 2, knowledge from social constructivism is not solely constructed within the mind of the individual; rather it is constructed through interaction with others (Edward, 2000; Roberts, 2003). Teachers are therefore expected to create opportunities either in classrooms or outside for the learners to share ideas and learn from each other, and at the same time they are expected to play their roles as 'knowledgeable others' as referred to in literature, in helping learners to learn.

Findings revealed that the participants, although recognising the theory of learning through social interactions, attached different degrees of significance to the role of social interaction in learning. One strategy associated with a learner-centred approach that two of the participants made use of to involve learners in the learning process is group work (Ndapandula and Hans). The way they assigned group work activities to their learners and the way they interacted with them reflected that they are unclear about the role of group work in learning. Hans, for example, although using group work, did not give groups a chance to report on their findings, as this could serve both as a motivation for the learners to work hard in groups so that their findings will

impress others and as a means to scaffold new knowledge. Instead he asked individual learners to go and record the answers on the chalkboard at the end of group activities. The overall aim of group work, which as suggested by Bennet & Dunne (1994) and Lambert & Matheus (1996) is 'co-operatively achieved success', was not reflected through this approach.

Although Ndapandula gave chances to her learners to report back on their findings, no chance was given for the learners to reflect on their findings. For example, there was a good opportunity during one lesson, when she asked her learners to find solutions to environmental problems. I was expecting Ndapandula to give her learners a chance to reflect on the solutions they had suggested, however this did not happen. The responses were just accepted as they were without being questioned or elaborated upon by the teacher. One could conclude that the rationale for and the principles guiding the effective use of group work ought to be given attention.

Another issue concerning group work is the role of the teacher during group work. Thinkers such as Bennet & Dunne (1994), Webster *et al.* (as cited in Roberts, 2003) and others, as explored in chapter 2, emphasise the crucial role that teachers should play in collaboration with learners during group work. Findings revealed that the participants are unclear of what role they should play while learners are busy working in groups. While learners are working in groups, one could expect the teacher to move around, interacting with each group from time to time, to see how each group is progressing and providing support when necessary. However in this study the participants did not provide any support to the learners when they were working in groups. I observed during one lesson with Ndapandula how two groups wasted a lot of time by discussing a question without assistance from the teacher only to learn at the end of the activity that their answers were completely incorrect. It was a pity for the two groups because they were asked to rework their tasks, while others were reporting back. In the process these two groups did not gain anything, as their time for listening to others was interrupted by having to redo their task. In this instance it seems that the procedures for effective group organisation are not clearly understood by the participants.

Findings also revealed that the participants are unclear of what types of activities are worth discussing in groups. I mention this because some of the activities assigned to learners as group work activities required the learners to produce only one right answer. For, example, for the question "*suggests a solution to the problem of cutting down trees for firewood?*" the group answer = "*use solar energy*". Is that a challenging task to be discussed by a group of five learners for five minutes? One of the principles of a learner-centred education that calls for learners' natural curiosity to be catered for by challenging and meaningful tasks as explored in chapter 2, serve as a requirement for tasks worth to be discussed in groups. A clear understanding of Vygotsky's notion of zone of proximal development would enable teachers to design activities worth discussing in groups.

In all the lessons that I observed with James, he did not use group work, he only used whole class teaching and individual work, in addition to the question and answer methods discussed earlier. There were activities assigned to learners to solve individually that I felt required a group to solve, and so learners were deprived of the opportunity to share ideas and learn from each other in a formal way, as I observed that through whole class teaching, only the active learners dominated the discussions.

Another strategy used by the participants to involve learners in lessons, associated with a learner-centred approach, is the use of local examples in explaining new concepts to the learners. As indicated in chapter 2, one of the principles of a learner-centred approach is that the perspectives of learners should be appreciated and taken into account in the work of the school (Namibia. MBEC, 1996). So teachers are expected to provide learners with opportunities to draw lessons from their own experience outside school. This study revealed that although teachers recognised the role of linking the new topic to what learners already know, learners were not involved in choosing their own examples based on the new topic. In geography, as a practical subject, as all the participants have indicated, one could expect the teachers to generate lively discussions by giving learners the opportunities to draw lessons from their experience outside school. However, this study shows that teachers are unclear on how to exploit the many opportunities that geography offers to be linked to real life experiences of learners as most of the discussions were teacher-initiated and based on information from the textbooks. So it seems that the participants are unclear

of the nature of activities that could allow learners to relate the new information to what they already know. In other words the participants find it difficult to incorporate the perspectives of their learners in the work of the school, as required by a learner-centred approach.

However, I observed a degree of active involvement of learners in James's lessons, because he used open-ended questions and provided opportunities for learners to elaborate and clarify their responses by probing and asking for clarification. I attributed this to James's awareness of the purpose of a learner-centred approach; as he indicated during our interview that it promotes critical thinking, reasoning and making of judgments. So in his lessons he provides opportunities to learners to develop these capacities by engaging them actively in lessons. James's lessons serve as a good example of what involvement from a social constructivist perspective mean. As Gray (1997) suggests, involvement from a constructivist perspective, is more than mere participation (my emphasis), it requires 'active mental process of constructing knowledge', whereby learners are engaged in critical thinking.

### 5.3.4 Use of resources

As indicated in chapter 2, in a learner-centred approach there is a greater acknowledgement of resources for effective teaching and learning. In geography, teachers and learners could use their own creativity to design models and use local media such as newspapers, radios, TVs, audiocassettes etc. to supplement the ready-made materials such as textbooks, maps, weather instruments etc. (Namibia. MBESC, 1996). Findings from this study revealed that the participants are making use of learners' creativity to a certain extent, as I observed the models of weather instruments designed by learners.

However, apart from the designing of weather instruments, findings revealed that the participants are depending on textbooks as the only sources of geographical information. Relying on the textbooks influences the nature of activities they gave to their learners, as they mainly use the activities in the textbooks as classwork activities. This also influences the nature of knowledge they focused on in their teaching. From the activities that I observed done by learners from textbooks, the questions do not go

beyond comprehension levels. This is one of the contributing factors to why teachers do not ask questions that explore the values and attitudes of learners on the issues under discussion.

Therefore this is a signal to textbook developers to re-evaluate the nature of content and assessment activities they include in their textbooks. They need to develop activities, which are in line with the principles of a learner-centred approach and with the aims and assessment objectives in the syllabus, aimed at developing all the required geographical knowledge. Teachers should be watchful too, to select the textbooks that meet their needs and those of their learners. Nevertheless, the appearance of all the classrooms that I have visited does not reflect that learning with understanding is taking place in the classrooms. Geography is a visual subject, and so one expects geography to be visualised in the classrooms, by means of photographs, maps, newspapers articles with geography related events and so on. Unfortunately the classroom walls were clear. I attribute this to lack of support to teachers on how to collect geographical information from different sources and use it as visual material in the classroom, as one teacher indicated they need support from advisory teachers on the use of learning support materials.

### 5.3.5 Use of assessment

As indicated in chapter 2, assessment plays both a formative and summative role in a learner-centred approach, so teachers are expected to use a variety of assessment activities to assess the progress of their learners (Namibia. MBESC, 1996; Wilmot, 2003). This study revealed that the participants have accepted and are comfortable with the informal part of formative assessment, as it is done on a daily basis in the form of oral questioning and class work activity. However, the formal part of formative assessment, more especially projects and other forms of issue-based enquiry, are rarely used, if not at all, because the teachers mainly used a series of short tests as a form of continuous assessment. It appears that teachers need support on how to use projects as a form of formative assessment.

I attribute this, firstly, to the demanding nature of examinations, especially in Grade 10, where the learners write national examinations at the end of the year. For example

Hans indicated specifically that he used old examination papers in setting up his tests because he wanted to train his learners and to familiarise them with the format of the final examination. Secondly, I attribute it to lack of understanding on how to translate the assessment objectives into the assessment activities, as this was reflected by the nature of questions that teachers asked. Thirdly, I attribute it to lack of guidelines in the syllabus on how teachers should use the assessment objectives as guidelines in setting up their assessment activities. Lastly, I attribute it to the nature of pre-service teacher education the participants went through. For example, Hans indicated that he learned skills on how to set up and assess a project using criteria in his Further Diploma in Environmental Education, something that he did not learn in his pre-service teacher education.

**Summing up**

Based on the evidence above, I conclude that the reasons why teachers are not implementing a learner-centred approach as expected are twofold. On one hand it appears that teachers' beliefs about teaching and learning are in conflict with what social constructivist theory dictates. On the other hand, policy documents such as syllabuses used are not in line with the principles of a learner-centred approach, as no guidelines are provided in the geography syllabus on how teachers should implement a learner-centred approach. Therefore this study adds another layer of understanding to the findings of earlier research (as indicated in chapter 2) that not only do teachers have a misunderstanding of what a learner-centred approach is, but most importantly, the policy documents are not consistent with the principles of a learner-centred approach. Therefore the teachers are interpreting the syllabuses as they are.

## 5.4 Issues and challenges in the implementation of a learner-centred approach in geography

As indicated in chapter 2, a learner-centred approach presupposes that "teachers must have sufficient knowledge and skills to be able to interpret syllabi and subject content in terms of the aims and objectives of Basic Education" (Namibia. MEC, 1993:80). One issue that emerged as a challenge in the implementation of a learner-centred approach in geography is the need for a deep knowledge of the subject. This study

revealed that the participating teachers are unclear of the rationale, the aims and assessment objectives of the subject as stipulated in the syllabus. The challenge is that as teachers do not understand what the rationale of geography is, what the aims of geography are and what knowledge, skills, values and attitudes are to be developed, they were not able to implement a learner-centred approach successfully. If the teachers understood the rationale, the aims and assessment objectives in the syllabus, then all their teaching and learning activities would be geared towards achieving the aims not only for geography education but for general education as well.

Another issue that emerged as a challenge is that the participating teachers lack an understanding of the key ideas underpinning social constructivism as a theory of learning in which a learner-centred approach as adopted in Namibia is embedded. The gaps that this study revealed between teachers' practical understanding and their real understanding of a learner-centred approach validated the assumption held by social constructivist thinkers such as Bennet & Dunne (1994) that a clear understanding of how children learn and the theories underpinning the new view of learning is central to the successful implementation of a learner-centred approach. It appears that the views of knowledge and how it is acquired, and the view of learning as adopted by social constructivist theories of learning, is not clearly understood by the participants, otherwise they would be motivated to use with confidence the teaching strategies, which are in line with a learner-centred approach.

The above issues raise questions about the preparation of these teachers in the context of both their pre-service programmes and in-service professional development. This is a challenge that needs to be considered by those who have the responsibility for teacher education and professional support.

The last challenge that emerged from this study is the tension between covering the syllabus for examination and promoting meaningful learning. This study revealed that teachers are worried too much about time, as a result they did not listen to what their learners are saying, they did not have time to prepare stimulus materials, rather they asked oral questions, they did not have time to give chances to their learners to ask their own questions, they did not have time to ask reasoning, evaluation and problem-solving questions to develop high-order thinking and engage their learners in

enquiring about real life issues. I think something should be done to see how to reconcile content coverage with development of meaningful knowledge.

Linked to the above is the challenge that curriculum developers face in terms of both making sure that curricula are consistent with the ideals of reform process and also providing the necessary support for teachers to implement the curriculum from a learner centred position.

In the light of the above, this study revealed that there is a long way to go and a lot to do in terms of preparing teachers and re-evaluating pre-service and professional development programmes and the guiding documents to be consistent with the principles of a learner-centred approach before the fruits of a learner-centred education ripen and become edible in the Namibian education system.

## 5.5 Conclusion

In this chapter I discussed the findings to my research question in depth, which is how the selected geography teachers understand and implement a learner-centred approach. This study revealed that while the perceptions of the teachers appeared to embrace a sound understanding of the theoretical ideas within which Namibian learner-centred education is situated, their practice revealed that they understood those ideas only superficially. Although this study is not meant to generalise, the findings raised a number of questions that focus attention on where there might be a need for improvement. I also discussed issues and challenges in the implementation of a learner-centred approach.

In the next chapter I discuss the lessons learned, make some tentative suggestions and draw some conclusions.

# CHAPTER 6

# CONCLUSION

## 6.1 Introduction

In this chapter, I reflect on the key dimensions of my study. I reflect on the research process and the results, the lessons learned, the potential value of the study, and the limitations of the study; and I make tentative suggestions to address the issues that emerged.

## 6.2 A reflective overview of the research process and the research results

This section is intended to provide an opportunity to reflect on the various dimensions of the research process and results as a precursor to considering the lessons learned, the potential value and limitations of the study.

### 6.2.1 The research process

In reflecting on the research process I consider the achievements of my research goals and in this respect I feel that the study has answered my research questions. I attribute my research findings to the form of inquiry I opted for, that is, a qualitative research approach which is interactive in nature and makes use of multiple sources of data, such as semi-structured interviews, classroom observations and documentary analysis. By using multiple sources of data, I was able to identify the gaps between participants' theoretical understanding and their real understanding of a learner-centred approach, something that would have been impossible if I had only made use of one source of data. The use of semi-structured interviews enabled me to probe and understand the participants' perceptions and experiences of a learner-centred approach. Classroom observations helped me to gain insights into the real understanding of the participants of a learner-centred approach.

An analysis of documents such as assessment activities helped me to identify the gaps between the way the participants talked about assessment and the way they implement it. At the same time, an analysis of documents such as syllabuses and schemes of work helped to illuminate part of the problem of why the participants are implementing a learner-centred approach the way they do. I might not have gained the insight that helped me to understand why teachers hold a particular view they have about LCE. Therefore, an analysis of syllabuses and schemes of work helped me to understand that part of the problem is the curriculum, which is not consistent with a learner-centred approach.

Although, this was my first attempt to conduct a systematic intervention of this nature, the whole process developed my research skills, which I believe will improve with time and practice. At the same time I learned for the first time how appropriate the qualitative method is when one is interested in understanding people's perceptions, beliefs and actions.

### 6.2.2 The research results

In reflecting on my research results I found the following results particularly significant. The first significant one was the difference between the way teachers speak about LCE and the way they implement it. The interesting dimension here is that teachers were able to articulate the theories perfectly, which is an indication of their exposure to theories through pre-service and in-service education programmes. However the implementation of LCE revealed, as could be seen in chapters 4 and 5, that there are fundamental gaps in the way they understood and 'internalised' the theories of LCE.

The second finding that I found particularly significant was the nature of the policy documents that teachers are using. These included the syllabuses and schemes of work. These documents should support teachers by providing guidelines and directions regarding teaching, learning and assessment. As indicated in chapters 4 and five, these documents are not in line with the tenets of LCE as developed in the national policy document, *Towards education for all* (Namibia. MEC, 1993) and *Conceptual framework document on LCE in the Namibian context* (NIED, 2003).

Thirdly, the findings raised questions about teachers' subject knowledge that is of concern given the nature and role of geography in the Namibian curriculum.

### 6.3 Lessons learned

This section provides a reflective overview of the lessons learned. I group these lessons firstly in relation to my own development as a researcher and secondly in relation to how the results have informed my professional development.

The first lesson I learned is the value of an in-depth, small-scale study as a means to illuminate the phenomenon being studied, in this case what is happening in the selected geography classrooms in Namibia. Secondly, I learned that making sense of other people's perceptions is both a demanding task as well as one that requires a great deal of patience, sensitivity and honesty on the part of the researcher. Thirdly, I learned how important it is in a process of transformation to continuously revisit our progress to ensure that we are still on the desired road of development.

In terms of my personal growth, as a geography facilitator, one of my roles is to help teachers in areas where they experienced difficulties. So I learned that we have to reduce the gaps, as identified in chapters 4 and 5, between participants' theoretical understanding and real understanding of a learner-centred approach if the aims of the reform process in Namibia are to be realised.

### 6.4 The potential value of the study

Educational reform in Namibia aims to equip learners with the skills, knowledge and competencies needed for the 21st century. Geography, more than any other subject in the curriculum, has a central role to play, as highlighted in chapter 2, in equipping learners with most of the skills they need to live comfortably in the complex society. However, the findings of this study paint a picture that although learners at the three selected schools are equipped with geographical knowledge and skills, they are not equipped well enough with all the knowledge and skills that they are supposed to develop during geography lessons.

Therefore the potential value of this study is the fact that it shed some light on what is happening in some geography classrooms. Considering the fact that there is limited literature in Namibia on the implementation of a learner-centred approach in the context of geography education, these findings could be useful to those who are interested in studying in depth changes and development in the implementation of a learner-centred approach in the geography context.

The greatest value of this study lies in the number of questions raised rather than the answers. The questions raised in this study are not meant to criticise the practice of all those involved, but rather to reveal possible gaps that might need the attention of those who have a stake in education to re-examine their practices and beliefs about what they value and accept as worthwhile knowledge. These could be curriculum developers, teacher educators for both pre-service and in-service teacher education programmes, and geography teachers themselves. So they need to think critically about these gaps and the questions, as raised in this study, and use them to reflect on their practice.

### 6.5 Limitations of the study

This study has a number of limitations. The first one is related to the generic limitation of the case study. Since this was a small-scale research, involving only three teachers and conducted within a limited time frame, I was not able to generalise the findings, rather I interpreted them on the basis of the perceptions and practices of the three teachers involved in this study.

The second limitation is related to the issue of skills, and subjectivity as associated with qualitative research due to its interpretative nature. Since I conducted this research as a novice researcher and being a primary instrument for data collection and data interpretation, my limited skills and subjectivity could limit and influence the quality of my findings. However, I believed that by keeping in touch with my critical friends, who worked through my findings, and by taking the data back to the participants to confirm the findings, helped me to overcome these limitations to a degree.

The third limitation is related to the issue of time. Due to the limited time for a half thesis research report, I narrowed the focus of my study to teachers' practice only, although an investigation of learners' work could also add depth to the findings of the study. In addition, based on the findings as emerged, I felt that since I observed only a few periods, I could not conclude *per se* that the participants did not use certain teaching strategies or assessment methods. However I believed that by observing a series of lessons with each participant, and not only one lesson, provided me with opportunities to observe a range of teaching strategies and assessment strategies employed in depth. At the same time using multiple sources of data allowed me to cross-check the findings from different sources and this strengthened the validity of my findings.

## 6.6 Tentative suggestions for action and the way forward

### 6.6.1 Support for teachers

Since this was a small-scale research, I provide tentative suggestions on the basis of these three participants. The findings illuminated a need for support to these teachers in the following areas:

- An understanding of what pre-knowledge is, what role it plays in the learning process and how one could access it.
- A guideline document outlining the role of the aims and assessment objectives in the syllabus and how one might translate them into learning and assessment activities.
- An understanding of the strategies for effective group work organisation as well as an understanding of the role of teachers in facilitating learning during group work activities.
- The types of questions asked in geography to generate deep geographical understanding.

- The use of resources and other stimulus materials to make geographical knowledge more accessible to all the learners, irrespective of their cultural background.

The areas identified, however, will only be of value where teachers are provided with clear understanding of what learning is and how people learn, what knowledge is and how it is acquired, and what conceptual understanding means in the context of geography education.

### 6.6.2 Tentative suggestions for further research

Given the nature of this study, issues and problems were raised that could not be studied in the depth they deserved or that were beyond the scope of this study. These include:

- An investigation into the extent to which learners develop conceptual understanding as required by the geography curriculum and as intended by a learner-centred education, as this study focused only on teachers' understanding and implementation of a learner-centred approach without looking at the effects that teachers' understanding and implementation have on learners' development of conceptual understanding. So I believe that an in-depth study on this issue would illuminate a deep understanding of how geographical understanding is being enhanced through a learner-centred approach.
- One limitation of this study is that it focused more on teachers' perceptions and experiences of a learner-centred approach, rather than their subject knowledge. Therefore I felt that an investigation into geography teachers' subject knowledge and how this influences their ability to implement a learner-centred approach would generate a deeper understanding of how and why they implement a learner-centred approach the way they do.

## 6.7 Concluding remarks

This study raises some possibilities for improving the implementation of a learner-centred approach in geography in the selected schools in Oshikoto region. It provides insight into the gaps as identified between teachers' theoretical understanding of a learner-centred approach and their real understanding of it. The big lesson learned from the findings of this study is that the gaps as identified could only be reduced if the participating teachers are equipped with a clear understanding of the theory and pedagogy of LCE/social constructivism, and if the policy documents, e.g. the syllabuses, which teachers are using are consistent with the principles of learner-centred education. The study also raises questions about teachers' subject knowledge that are of concern given the nature and role of geography in the Namibian curriculum.

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## APPENDIX 1

## A LETTER OF PERMISSION FROM THE REGIONAL DIRECTOR

REPUBLIC OF NAMIBIA

MINISTRY EDUCATION:OSHIKOTO REGION

Tel: (065) 281909
Fax: (065) 240315

Private Bag 2028
Ondangwa
2005-12-08

Enquiries:Mr A. Strüwig
Ref No. 13/1

Mrs. Adelheid Angula
P.O.Box 931
Ondangwa

Re: Request to conduct research

We hereby grant permission for you to continue with you research in doing classroom observation at the three mentioned schools.

The necessary arrangements should be done in time with the principals of the schools to be visit. The learners of your own school must not be affected by your absence.

I sincerely hope that your research will be to the benefit of the Region at the long run.

Yours sincerely.

.....
Mr. A. Strüwig
Acting Director

MINISTRY OF EDUCATION
DIRECTORATE OSHIKOTO
08 DEC 2005
PRIVATE BAG 2028, ONDANGWA
REPUBLIC OF NAMIBIA

# APPENDIX 2

## CONSENT FORMS

### Consent form 1

I hereby agree to participate in an interview with Adelheid Angula. I understand that she will be inquiring about my understanding of and implementation of learner-centred education with regard to the teaching of geography in grade 10 classrooms.

Signature---------- Date----------

### Consent form 2

Adelheid Angula is hereby given permission to record an interview conducted with me as part of the process of her data collection for a research report that she will be writing for the completion of her Masters' degree. I understand that transcripts will be made of the interview and that extracts from these may be used in the final report. I have been assured that my school, my learners and I will have anonymity in the report. I have been further assured that I have the right to quit the research at any time and the phone number where I can reach her is 065-240386 (h) or 065-245714 (w).

Signature---------- Date----------

# APPENDIX 3

## SEMI-STRUCTURED INTERVIEW SCHEDULE

**Interview questions to investigate teachers' understanding and implementation of learner-centred approach in geography education.**

**Biographical information**

1. How old are you?
2. Are you a male or female?
3. What language(s) do you speak?
4. When did you complete your teacher training?
5. What teacher training did you do? Where did you do it?
6. What other further training have you done since you started teaching?

**Questions about perceptions and experiences of teachers of learner-centred approach**

7. How long have you been teaching geography?
8. What grades are you teaching?
9. Why are you teaching geography?
10. What aspect of geography do you enjoy most? Why?
11. What aspect of geography do you enjoy least? Why?
12. What problems/difficulties did you experience in teaching geography?
13. What teaching and learning materials did you use and how do you feel about them?
14. What aspect of geography did your learners find difficult or easy in learning geography? Why?
15. How do you view your learners interests in learning geography and why?
16. What teaching and learning strategies or techniques do you use and how do you feel about them?
17. What type of learning activities do you set up for your class?
18. Do you consider yourself as a learner-centred teacher? Why?

19. Is there any difficult or problem that you experience in teaching geography using a learner-centred approach?

## APPENDIX 4

## OBSERVATION SCHEDULE

Investigation of how the geography teachers understand and implement learner-centred education

| | |
|---|---|
| What are the key concepts and how did the teacher introduce them to the learners? | |
| How did the teacher contextualize the lesson? | |
| How did the teacher promote learning with understanding? | |
| How did the teacher involve the learners? | |
| What sort of learning is the focus of the lesson? | |
| How did the teacher assess learners' learning and progress? | |

# APPENDIX 5

## STIMULATED RECALL QUESTIONS

### Stimulated recall questions on Ndapandula's lessons

- Why did you choose to use group work for learners to come up with solutions to the problems of deforestation?
- Why did you remind them all to contribute? Could you please tell me more about the participation of your learners during group work activities?
- Why did you ask them to ask their own questions?

### Stimulated recall questions on Hans's lessons

- Why did you ask your learners to sit in groups before you start with the lesson?
- When you asked your learners to define the term population, you reminded them that they learned it in grade 8 and 9. Why did you do that?
- When you were teaching the meaning of the word population density, you bring in the way density is defined in physical science. Why did you do that?
- Why did you choose to use the chalkboard for your learners to record the answers to the activities you planned for them?
- Do you think your lessons were learner-centred? Can you explain why you think that way?

### Stimulated recall questions on James's lessons

- Why do you always give them a clue when your learners hesitate to answer the questions?
- Why are you concerned with time?
- Why do you prefer to give individual work?
- Why do you prefer the brainstorming method?

## APPENDIX 6

## SAMPLES OF LESSON PLANS

## Sample A: James' lesson plan

SCHOOL :

GRADE : 10B — DATE : 22 may 2006

SUBJECT: GEOGRAPHY — DURATION : 40 MINUTE

THEME : POPULATION GEOGRAPHY — LEARNERS NO : 36

LESSON TOPIC : POPULATION DYNAMICS

LESSON OBJECTIVES: Learners should be able to the meaning of population trends and also to give reasons for the rapid growth either local or international. to identify cities with more than a million inhabitants

LESSON CONTENT: population growth (Local and international, factors influencing pop. change and results of population change.

TEACHING AIDS : CHALK board, Diagrams in the text books.

INTRODUCTION : The teacher ask the learners to give the figure of the namibia population and ask them to guess the local number of their community then introduce the topic for the lesson.

TEACHING AND LEARNING

| TEACHER | LEARNER |
|---|---|
| # The teacher explain the meaning of population "dynamics" | - The learners listen carefully for the explanation |
| # explain the rapid growth of the popin the world since 1960 | - The learners also pay attention to the statistics given |
| # ask the learners to identify the growth patterns in different regions. | - The learners give the figures from the diagrams or maps |

| TEACHER | LEARNER |
| --- | --- |
| Ask the learners to compare the Namibian situation with a developed and developing nation | The learners compare the data of Namibia & the developed countries and notice the differences |
| Ask the learners to give reasons for that rapid growth either local or international | - The learners list the reasons and also give other opinions for the rapid growth rate |
| Ask the learners to find out the possible solutions to minimise the rapid growth rate worldwide or local. | The learners present or give the opinions about possible solutions on how to minimise the growth rate |
| The teacher give chance to the learners to ask some questions for clarity | The learners ask questions where they don't understand |

Conclusion: The teacher conclude the lesson by highlighting the main points. Give learners a chance to ask questions for clarity

Assignments/Homework: The teacher tell the learners to read the next topic.

Reflection: The lesson was successful, the learners have full participated, the ask good questions, they create some arguments on the topic and

**Sample B: Ndapandula's lesson plan**

Date: 14/3/06 Subject: Geography 10
Media: chalkboard, posters and textbooks
Topic: Over population. Stage: sub-topic

Objectives: to explain the effect of population explotion as a worldwide and Namibian issue
- Suggest solutions from their own vicinity. eg sustainable production, education, etc

Content.

(1) The term overpopulation.
(2) Causes/factors lead to overpopulation.
(3) Problems resulting from overpopulation
(4) Possible solution, eg birth control, educ. etc

| Teacher activities | Learners' activites |
|---|---|
| INTRODUCTION | |
| - hangs the poster with some pictures then asks learns to identify - guides them, introduces the topic | observe the poster and try to figure out the content. |
| Presentation | |
| - defines the term overpopulation, asks learners to identify the causes<br>- interprets more and suggest a few solutions | listen.<br>- give answer based on their prior knowledges. eg urbanisation<br>- suggest solutions |
| Conclusion | |
| - Re-caps the main points, invites questions | - listen and observe<br>- may ask questions |

## APPENDIX 7

## SAMPLES OF ASSESSMENT ACTIVITIES

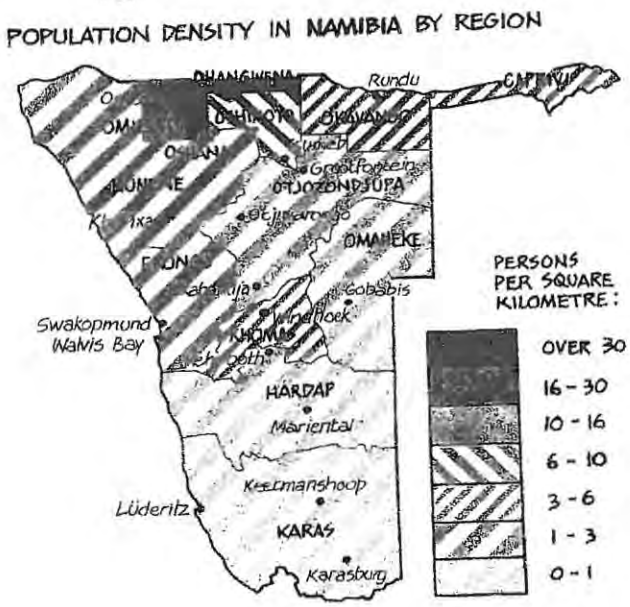
## Sample A: James' test

Geography Test
Mark: 20

Grade:10
Date: 09/ 06/ 2006

Answer all the questions.

1. What is a population density (2)
2. .....is the method of using resources in a way that they are able to recover and to be used again for along period (2)
3. Mention two factor that influence either distribution or density (2)
4. Define what is fertility rate of a population (2)
5. Name two pull factors that contribute to migration (2)
6. Study the map below about population density in Namibia by Region.




i) In which regions is the population density less than 2 per square km (2)
ii) Which regions are the most densely populated? (2)
iii) In which region is Arandis situated? (2)
iv) What is the population densities of Khomas and Ohangwena? (2)
v)Why do you think the regions you mentioned in question (ii) have a high population density, explain your answer (2)

[20]

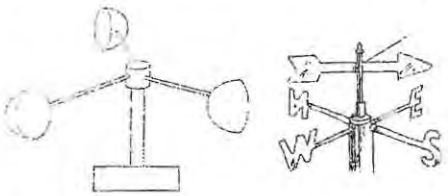
## Sample B: Hans' test

# PRACTICE EXAM 2

SECTION A – Physical Geography

1. **Climatology**

(a) Study the weather instruments shown in Fig 3

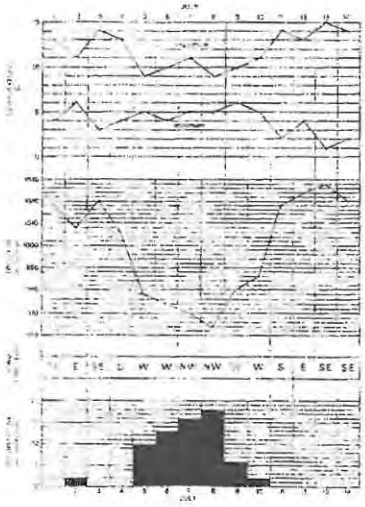


i) Name each of the instruments as well as the element of weather measured by it. (2)

ii) Describe, and explain, the best location for these instruments at a weather station. (2)

iii) Describe how each of the instruments functions. (4)

b) Study the weather information shown below.



i) Identify the instrument used to find each of the elements of weather shown in the graphs. (4)

ii) Calculate the highest and the lowest temperature range shown. (2)

iii) What was the highest atmospheric pressure recorded in the graphs? (1)

iv) What was the most common wind direction? (1)

v) Calculate the total rainfall for the period. (1)

vi) By referring to specific examples from the information provided, explain the relationship between the different aspects of the weather over the period shown in the graphs. (3)

[20]

2. **Ecology**

(a) Study the photograph of a traditional settlement in the north of Namibia and answer the questions that follow.

i) Describe how natural materials have been used in the construction of this and similar settlements. (2)

ii) Why do the local people use natural materials for building? Give two reasons. (2)

iii) How can the use of these natural materials have serious consequences for the environment? (2)

iv) How can the local people ensure that they have natural building materials for the future? (1)

(b) Refer to the diagram below which shows how desertification occurs.

i) Which factor is natural, not human-made? (1)

ii) How can humans make the effects of this natural cause worse? (2)

iii) Describe how the various causes together lead to desertification. (3)

iv) Why is it difficult for people to reverse the process of desertification? (2)

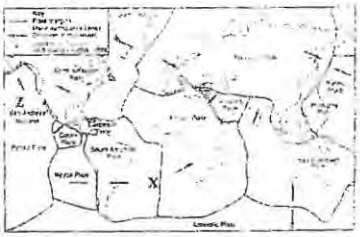
v) Explain how education can reduce the destruction of the environment. (3)

vi) Why is education alone not enough to save the environment? (2)

[20]

3. **Geomorphology**

(a) Use the information below to answer the following questions.



## Sample C: Ndapandula's test

Grade 10A - D Mastery Test Term II 20-06-20

SECTION B : POPULATION GEOGRAPHY Marks: 40

QUESTION 1

(a) Figure 4A shows the distribution and density of the world population.

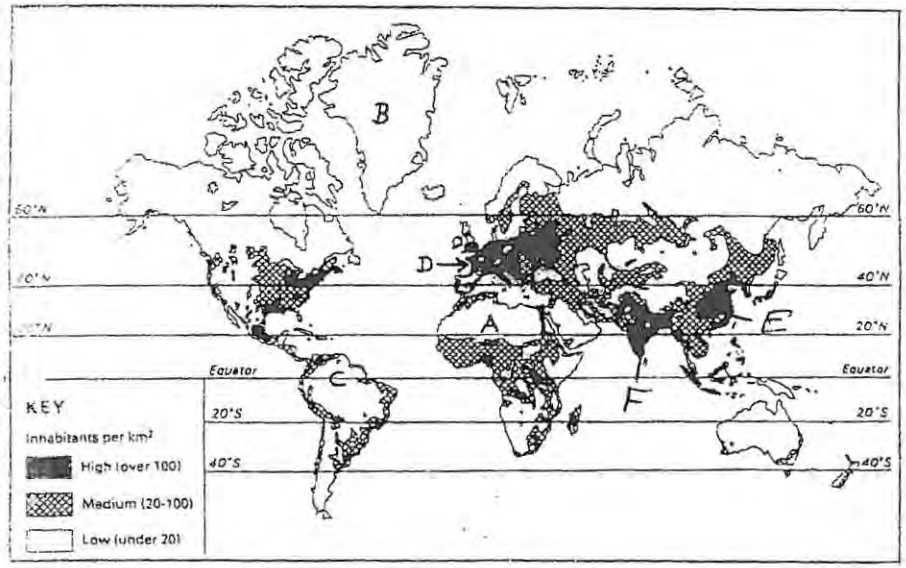



Figure 4A

(i) Distinguish between population distribution and population density. (2)

(ii) State two large regions where the population density is over 100 per km². (2)

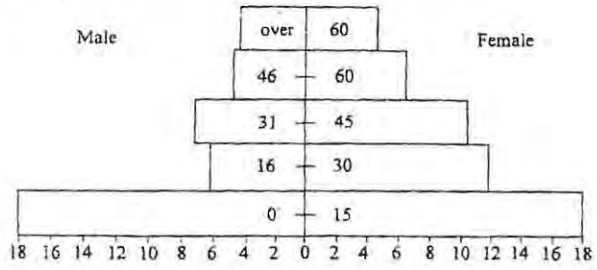
(iii) Give one reason for the low population density of each of the areas numbered A, B and C. (3)

(iv) Explain the high population density of the region marked D on the map. (3)

[10]

QUESTION 2

(a) The following population pyramid shows the population of a farming village. It is situated about 40km from an important mining and industrial city.




(i) How does the male population aged 16 to 45 years compare with the female population of the same age? (2)

(ii) Suggest some reasons for this. (2)

(iii) What problems could this cause for the village? (2)

(b) The table shows details of some large recent migrations of refugees. [6]

| Origin | Numbers | Destinations | Reasons |
|---|---|---|---|
| Afghanistan | 5,9 million | Iran and Pakistan | Civil war |
| Israel | 2,5 million | Occupied territories (eg Gaza Strip) Jordan and Kuwait | Palestinians resettled after Israel occupation |
| Vietnam | 1,2 million | Hong Kong, Japan, China and other SE Asian countries | Political and economical factors |
| Ethiopia | 1,1 million | Sudan and Somalia | Drought and civil war |
| Mozambique | 1,0 million | Zimbabwe, South Africa, Malawi | Civil war |

(i) What is a refugee? (1)

(ii) Use the table to state the main cause of people becoming refugees. (1)

(iii) Suggest one political factor which may have caused people to migrate as refugees. (1)

(iv) Suggest reasons why the governments of some countries are often not willing to receive refugees and other migrants. (4)

[7]

[Turn over

QUESTION 3

(a) Figure 5 provides information on the populations of four countries.

| countries | population (millions) | birth rate (births per 1000 population per year) | death rate (deaths per 1000 population per year) | years for the population to double | infant mortality (per 1000 per year) | life expectancy (years) | population under 15 years (%) | population over 65 years (%) | G.N.P. * per person US $ |
|---|---|---|---|---|---|---|---|---|---|
| Europe | | | | | | | | | |
| Germany | 80 | 12 | 11 | 1300 | 7.5 | 75 | 16 | 15 | 17 830 |
| Switzerland | 7 | 12 | 9 | 1230 | 7.3 | 78 | 17 | 15 | 30 270 |
| Asia | | | | | | | | | |
| India | 860 | 31 | 10 | 34 | 91 | 57 | 36 | 4 | 350 |
| Saudi Arabia | 16 | 42 | 8 | 20 | 71 | 63 | 45 | 3 | 6230 |

* Gross National Product

Figure 5

(i) Which of the countries in figure 5 has

(A) the highest life expectancy?

(B) the highest rate of infant mortality?

(C) the biggest dependent population?

(D) the highest average annual income per person? (4)

(ii) Which country listed has the highest annual population growth rate? (1)

(iii) Use the following formula and calculate the annual growth rate of the country mentioned in (ii). Show your workings.

Growth Rate = Birth Rate - Death Rate (3)

(b) (i) Define the term *life expectancy*. (1)

(ii) Suggest reasons why some countries have a high life expectancy. (3)

[12]

(b) Read the following passage (figure 4B) on urbanisation in Namibia and answer the questions.

**Urbanisation in Namibia**

If we are to solve our urbanisation problems, it is important to understand why urbanisation is occurring. This is difficult in Namibia as there are many possible reasons for people wanting to move to towns and cities. Some of the most common causes in the north include the war and increased pressures on the land. The pressure on the land can be attributed to rapid population growth, drought and inefficient farming methods. Other reasons include the rising expectations of young adults, and their need to make a living. Since the environment in the rural situation is often not favourable, many young people travel to urban centres in search of a better standard of living. Urbanisation patterns in the south are affected more by long term drought, a declining regional economy and the land's rapid degradation as a result of increases in population growth. In the eastern and western parts of the country, factors such as drought, the decline of smaller service centres, lack of markets and environmental degradation have resulted in people being concentrated in the urban centres of Swakopmund, Walvis Bay and Gobabis. (*Lives in the Balance: enviroteach 1991*)

Figure 4B

(i) What seems to be the single most important reason all over Namibia why people leave the rural areas? (1)

(ii) What section of the population is the most likely to leave the rural areas to go to urban areas? (1)

(iii) Give two factors that attract people to urban areas. (2)

(iv) Suggest a possible explanation of the phrase from the passage: "... the land's rapid degradation" which refers to the South of Namibia. (1)

[5]

[5]