A CASE STUDY ANALYSIS OF THE ROLE OF RESOURCES IN THE TEACHING AND LEARNING OF SENIOR PRIMARY GEOGRAPHY IN THE NORTHERN PROVINCE

Submitted in partial fulfilment of the requirements

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by

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DECLARATION

I declare that this thesis comprises my original work, and has not been submitted for a degree at any other university

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ABSTRACT

The dynamic nature of Geography has meant that over the years it has undergone many changes. These changes - for example, in curricula, approaches and methods - have had a great impact on how Geography is taught and learned in schools. Learning theories on how children learn Geography are changing from behaviourism, in terms of which learners are regarded as passive recipients of knowledge in the form of facts, to socially constructivist theory, where learners learn by constructing their own knowledge. In the South African context this has meant moving away from the positivistic tendencies of the 1960s and 1970s, to constructivist practices embodied in the outcomes-based education envisaged for the 21st Century. These changes have impacted on the nature and use of resources.

This research attempts to reveal teachers' and learners' perceptions of resources. In the previous curriculum, resources were largely limited to textbooks. In the new curriculum, our perception of resources has to become wider to encompass anything that can enhance teaching and learning.

This study focuses on Grade 5 and 6 children in the Northern Province. In the intermediate phase, young children need a wide variety of resources. As we approach the 21st Century, the information technology of media like computers and the Internet, together with traditional media and resources found in the environment, provide teachers and learners with great opportunities and a wide variety of choices.

The study surveyed schools in the Northern Province, through a questionnaire. In order to understand the depth of the problem, three schools were selected for a case study. Data obtained from these studies were analysed and compared to determine trends and patterns regarding the availability or use of resources as teaching and learning aids.

On the one hand the study highlights the severe lack of even basic infrastructure on which to develop a 'traditional' resource base and stresses the need for innovation and

creativity (and dedication) among a teaching body which feels isolated and marginalised, while on the other hand this research has revealed teachers' desire and willingness to accept change and to adapt, given the necessary epistemological enforcement to effect change.

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DEDICATION

To my elder brother

The late

PIET MBERENGENI SCOTCH KHUBANA

For bringing me up and for laying a strong foundation
for my education.

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CHAPTER 1

INTRODUCTION

Since the early 1990s concerns have been expressed in various quarters about the deteriorating standard and quality of education in the Northern Province. The poor matriculation results were seen as an indication that something was seriously amiss with the quality of education. The situation was so critical that the South African government had to declare education in this province a disaster area.

My concern as a researcher is basically for the general improvement of teaching and learning, starting from the lower standards where a strong foundation needs to be laid.

While this study focuses on Geography, it must be emphasized that the arguments and issues raised in this research apply to many other subjects as well. In the new situation of outcomes-based education, where subjects have lost their traditional discrete character, this research has relevance for the learning area, Human/Social Sciences and Natural Sciences, of which a geographical focus is just one dimension. Nevertheless it is a focus which may well have implications for other learning areas.

1.1 THE NEED FOR RESOURCES IN PRIMARY SCHOOL GEOGRAPHY

What kind of resources do primary school learners need in order to learn the subject effectively? What are the perceptions of teachers and learners of the resources, their availability, value and uses? These matters are addressed in detail in this study.

Since the learning resources employed influence the effectiveness of teaching and learning, I was motivated to investigate this area. I wanted to find out what the teachers

and learners think about resources and how they use them. Problems, opportunities and possible solutions are also investigated.

Geography emphasizes the concepts: 'place', 'space', 'time' and 'environment' (Wiegand, 1993; Unwin, 1992; Catling, 1987). A central tenet in Geography is the development of a sense of place. For young learners in particular Geography is an aid to their developing sense of place and as such is a key dimension in the child's developing sense of identity (Van Harmelen and Irwin, 1995; Wiegand, 1993; Mills, 1988; Catling, 1987).

When teaching Geography to children in the primary school, teachers should stop undermining them. They should refrain from thinking and saying that young children cannot think, or cannot think in the abstract, or cannot use their imagination. Children are curious beings who can think, reason and ask many questions (Wiegand, 1993; Unwin, 1992; Catling, 1987). In order to satisfy their quest for knowledge, we need to provide them with a wide variety of resources.

South Africa needs to give more attention to children in the primary school. This sector of education is seriously neglected (Cole, 1994; Taylor, 1994). Funding and research concentrate on high schools and tertiary education. We need to do more research in primary schools as well, so as to understand this sector of education and help solve problems. Funders and sponsors need to do more for this sector. Primary education is the foundation of all future learning. We have a good example in the United Kingdom where primary school Geography is highly regarded (Unwin, 1992).

Children should be made to participate actively in the lessons. Their love for games and playing with toys must be explored and exploited in order to develop their perceptual understanding and graphicacy skills (Mills, 1988).

The paradigm shift from positivism and behaviourism to socially critical theory has resulted in a change of teaching strategies in Geography (Unwin, 1992). We have moved

away from practices in which the teacher was regarded as the only source of knowledge and a transmitter of factual knowledge, to a situation in which learners are regarded as active participants and active agents who construct their own knowledge (Van Harmelen and Irwin, 1995). Learners are no longer regarded as 'empty vessels' or a 'tabula rasa'.

These changes impact on the way Geography is to be taught and learned. Emphasis is now placed on the learners' understanding, with teachers acting as facilitators to this understanding. In South Africa, outcomes-based education focuses on active learner-participation and teacher facilitation (Clarke, 1997; Lubisi et al., 1997). Learners are expected to acquire useful knowledge, which they construct on their own. They are expected to acquire skills, positive attitudes and values. Geography learning in this curriculum is no longer simply a matter of accumulating facts. Learners are rather empowered to acquire skills to access facts or information.

Another notable change in the development of Geography is its placement in the school curricula both here and abroad. In South Africa, Geography is placed in the Human/Social Sciences and Natural Sciences, in the outcomes-based system (Table 2.1, adapted from Lubisi et al., 1997). However, because Geography is an eclectic subject, aspects of this field of knowledge cross over to several of the other learning areas. Geography is also referred to as a queen of the sciences (Unwin, 1992). This status makes it a suitable subject for reference in this research. What is said about Geography in terms of resources can easily be said of many other subjects in all eight learning areas.

1.2 STATEMENT OF THE PROBLEM

Geography is a subject located in real life. It is a highly visual subject and as such requires a wide use of resources that goes beyond reliance only on textbooks (Holmes and Moorhouse, 1991).

Poor teaching and learning lead to poor achievements. Society is concerned about poor quality education. In the Northern Province, parents try to solve the problem of poor quality education in their province by sending their children to schools in other provinces. Generally, most parents are very poor and cannot afford to send their children to boarding schools. We are aware that the situation is aggravated by the lack of resources in the schools. The situation is exacerbated by the narrow perception that some teachers have about the resources, and the fact that they sometimes lack training in their use.

This study, therefore, aims at revealing and highlighting conditions pertaining to resources in primary schools in the study area, conditions which may be similar to those obtained in the wider situation of South African schools.

In the midst of frustrations and confusion, caused by shortages and poverty, the study seeks to point the way towards possible solutions and alternatives.

1.3 GOALS OF THE STUDY

Research has been done on issues such as teaching strategies, but we still need to know more about other matters, like resources, which contribute to the success of teaching and learning.

Secondly, in South Africa, very little has been researched or written on primary teaching and learning in general and on Geography in particular, let alone on resources.

In light of the above, this study has had two goals:

> The first was to investigate the perception, availability and use of teaching and learning resources in the senior primary schools in the Thohoyandou area, with Geography used as a subject of reference.

The second was to initiate a participatory action programme to develop a resource base at selected schools. This was done through my involvement in the teachers' and learners' lessons.

1.4 RESEARCH LOCATION

The research took place in the Northern Province, one of the provinces in South Africa.

The Department of Education, Sports and Culture in the province has divided the province into six regions. The research took place in some of the schools in the Northern region, also known as Region 3 (Appendix 13).

Each region is further divided into 'inspection areas', and each inspection area is further divided into 'circuits'. The research took place in the schools under the Thohoyandou Inspection Area (Appendix 13).

The Thohoyandou Inspection Area comprises five circuits, with a total of 151 schools. However, the population, which the research targeted is that of senior primary schools with Grade 5 and 6 classes and which offer Geography as one of the subjects. These schools formed the research population for a small-scale survey. Out of the target population of 67 schools, three schools were selected as a case study, a convenience sample being used for this purpose. Two of the schools selected for the case study are public schools and one is an independent, private school.

1.5 CHAPTER OUTLINE

The thesis is made up of the following chapters:

Chapter one is an introductory chapter, which maps out the route of the research. It briefly outlines the need for primary school children to study Geography.

Chapter two examines relevant literature pertaining to Geography and learning resources. Examples used in the research are mainly taken from primary school Geography in the United Kingdom where primary school Geography is regarded highly. Therefore, more British than South African literature is cited in this chapter. The type of literature that exists in South Africa on primary Geography consists mainly of prescribed, content-based textbooks. Whenever these sources discuss resources, they do so technically, that is, explaining how the media are to be used, with a list of do's and don'ts. The books usually emphasize classroom resources.

Chapter three outlines the research methods and tools used to collect research data. The methods and tools are identified and the reasons for choosing them are given. This chapter also explains how the research instruments were administered to participants.

In Chapter four, survey questionnaire data are presented and analysed.

Chapter five analyses data from the interviews conducted with teachers and learners at the case study schools. Other data presented and analysed are from: field notes taken during visits to case study schools; lessons observed when they were conducted by the teachers at these schools; lessons conducted by me as a participant observer; and a workshop conducted at one of the case study schools.

Chapter six summarizes the research, presents conclusions and makes tentative recommendations.

CHAPTER 2

RESEARCH CONTEXT AND REVIEW OF RELEVANT LITERATURE

2.1 INTRODUCTION

> We cannot make extensive demands on our teachers and then not give them the tools with which to do the job. (Roger Briggs, City Press Supplement, 24 August, 1997:1)

The main purpose of this chapter is to examine literature which deals with primary school Geography and learning resources in order to discern how current thinking and trends in Geography have influenced the use of resources.

Because Geography is a visual subject (Holmes and Moorhouse, 1991), its effective teaching relies heavily on classroom resources and the nature and role of these require serious attention. Unfortunately, in the South African context very little literature exists on primary education in general and primary school Geography in particular. Research has thus far tended to focus on secondary school Geography.

In this chapter, therefore, reference will continually be made to examples from other countries, especially the United Kingdom, where there has been considerable interest in primary school Geography. However, we should remember that the United Kingdom and South Africa, the Northern Province in particular, are very different places, both geographically and in the level of their economic and technological development.

When reference is made to the situation in the United Kingdom it will be to inform the reader about the state of primary school Geography in that country. The purpose is not to suggest that South Africa should slavishly imitate British practices, but to indicate how we might learn from their experiences. Notwithstanding differences in levels of

economic and technological advancement, children are children, whether in Britain or in South Africa. According to Unwin:

> Of all the countries in the world Geography is probably in the strongest position in the primary and secondary curriculum in England and Wales. (Unwin, 1992:10)

If certain practices have been successful in those countries, we can surely predict comparable success if similar teaching and learning conditions were to be created in the Northern Province of South Africa.

The relevance of 'foreign' experience is enhanced by the fact that the development of Information Technology is steadily drawing South Africa into the global village, while the outcomes-based education currently being phased into the South African curriculum will serve to bring our school system in line with many of the technologically advanced countries.

This chapter will highlight the following issues: the nature of Geography; development and changes that have taken place in Geography; the present situation of Geography in South Africa, especially primary school Geography; primary school children and Geography; theories about how children learn; and the need to provide for, and use, a wide variety of resources for Geography.

2.2 THE EVER-CHANGING FACE OF GEOGRAPHY

Geography has undergone many changes over the ages. It is possible to trace these changes historically from the times of Roman and Greek classical Geography to the present (Unwin, 1992). However, for the purpose of this chapter, and due to constraints of time and space, only the present state and the possible future of Geography will be examined, as these relate in particular to South Africa.

The 'old' Geography curriculum of South Africa is to a large extent a relic of the developments of Geography that occurred in the United Kingdom in the 1960s and 1970s, the focus of which was strongly scientific (Hall, 1984a). In South African schools and universities, this Geography is still being taught. The general characteristics of this Geography are the result of the influence of rationalism, where ideas, theories and concepts are over-emphasized (Hall, 1984a). Empiricism and rationalism later on combined to result in positivism (Hall, 1984a).

This particular Geography has been criticised by some South African Geography researchers for being irrelevant and Euro-centric (Rambuda, 1994; Mphaphuli, 1992; Ndlwana, 1992). So, too, positivism has been criticised for over-emphasizing universal laws, which were supposed to be the basis for prediction. Humans are treated as if they are objects, their subjective feelings and imagination are ignored, while empirical evidence, experimentation and quantification are highly regarded for their objectivity. This Geography puts much emphasis on cause-effect relationships, principles, assumptions, order and patterns (Hall, 1984a).

According to Crabb (1995:9), Geography has in many places and situations "been merged with or submerged by other disciplines, sometimes retaining its name, sometimes losing it, sometimes never having it". This merging and re-labeling of Geography appears to be an ongoing process, which is necessitated by paradigm shifts in the school systems and curricula. Geography is indeed a dynamic but vulnerable subject. In South Africa at the present time, Geography is faced with changes brought about by the introduction of outcomes-based learning areas.

As Slater (1995:4) has said, "Geography is likely to continue in some form but also to continue to adapt to changing philosophical viewpoints and curriculum orientations". Such change is reflected in the switch to subject names like Social Studies, Environmental Science, Environmental Studies, Human Science or Social Science (Boden, 1976; Williams, 1976; Graves, 1975; Walford, 1973). According to Slater (1995), it is likely that the core of Geography's interests will be environmental and

developmental issues in the U.K. Traditional Geography is largely descriptive and earth-focused, while current Geographies are tending to move towards a socially critical approach which is issues-based (Bailey and Carter, 1996; Dale, 1995; Slater, 1982).

In South Africa, Geography in outcomes-based education primarily exists in the learning area called Human and Social Sciences. It seems as if the titles will continue to change, but the essence of Geography will remain. According to Young (1995), the restructuring of Geography need not make it weaker, but rather makes it stronger. For example, Geography has benefited from the assimilation of developments in information technology, the computer and the Internet (Davidson, 1996; Durbin, 1996; Kent, 1987).

Rather, the problem identified by Slater (1995) is perhaps one which should concern us more. Slater could have been describing the position of Geography in the South African curriculum when she wrote:

> Even so, the humanities, including Geography, are threatened, as Science, Mathematics and English are given political and educational priority and time-table space. (1995:5)

Young (1995) has said that the problem with Geography is that its practitioners undervalue it and lack the confidence to blow their trumpets about the value, relevance and importance of the subject in many areas of human life in the world.

Unwin (1992) concurs with Young in saying the public has no idea what geographers do or what Geography is all about. The blame, he suggests, lies with geographers themselves for failing to inform or to justify their role in public. The public generally still remembers Geography as a subject of capes and bays, states or countries and their capitals. Today, although still centred on the concept of 'place' (Hurry, 1994; Bateman and Martin, 1980; Dunlop, 1976; Jones, n.d.), Geography plays a wider role in society, be it in the work place or in communities (Fox, 1996). A wide variety of skills can be learned in Geography, as well as attitudes and values (Bailey and Carter, 1996; Fox,

1996; Sawicka, 1996; Boardman, 1983; Boden, 1976). It is also a useful subject in that it encompasses or feeds into a variety of careers (Fox, 1996).

Thus Geography should not be allowed to disappear from school curricula, because it has an important role to play in the life of people (Wiegand, 1991; Williams and Richards, 1980; Broek, 1965). In school curricula, it is particularly important as a bridge-builder between the natural and social sciences (Young, 1995; Williams, 1976). Geography's concern is the well-being of people on our planet. It focuses on issues that impact on the quality of life of people, e.g. resource consumption, environmental destruction and population growth (Ranger, 1997; Hicks, 1993). It does not only focus on present issues, but also looks into the future.

2.3 WHAT GEOGRAPHY MEANS TO PRIMARY SCHOOL CHILDREN: LEARNING ABOUT 'PLACE' IN GEOGRAPHY

Why should senior primary school children (intermediate phase) study Geography? Has the subject any role to play in the life of children?

In Geography, the concept 'place' is one of the most essential ideas (Unwin, 1992; Bateman and Martin, 1980; Jones, n.d.; Dunlop, 1976). Geography has its origins and roots in place (Catling, 1987). The other concepts which are basic to Geography are space and time (van Harmelen and Irwin, 1995).

The concept 'place' is part of children's development (Bins, 1996). Children will naturally develop a sense of place, but it is through Geography that their sense of place can best be fostered and enhanced. Space explores relationships between places and patterns (Wiegand, 1993).

Children know about place in two main ways: directly, e.g. through visiting and experiencing the place first-hand; and indirectly, by forming mental pictures through

second-hand experiences, e.g. looking at images on T.V., in books and in films (Wiegand, 1993). It is as an example of the former that local fieldwork as a resource comes into the picture. Taking children out into the field to see and experience the environment at first-hand is an essential dimension of their developing a sense of place (Bland, et al., 1996; May, 1996; May, et al., 1993; Walford, 1973). That is it not possible to go everywhere highlights the need for the use of a wide variety of classroom resources. Every available resource should be made use of so that even in the classroom children can still learn effectively.

Maps in the form of atlases and globes remain useful resources for teaching about place. Locational awareness can be enhanced through the use of these resources (Bailey and Fox, 1996; Wiegand, 1996; Wiegand, 1991; Boardman, 1983). Children can be taught to draw cognitive maps, e.g. maps showing their journey from home to school (Catling, 1987).

When we use resources such as pictures, we should go further than just displaying or showing the picture. We must let the children analyse and interpret the picture. They should learn to probe into pictures and photographs (Lewis, 1991; MacDonald, 1991; Dove, 1988; Warwick, 1987).

Children learn about place from birth, as they grow and develop, before they even come to school. They travel with their parents and visit places and in the process they learn about place and location. They develop "a sense of locational awareness, where they are, other people are, features in their environment are and events occur" (Mills, 1988:11). In Geography children continue to learn about place, that things have a place. If "no child, in reality, comes to school who is not already a geographer" (Catling, 1987:19), then the role of Geography is "to enhance children's maturing understanding and enable them to become more effective perceivers, users, appreciators, evaluators and developers of places" (Catling, 1987:19).

According to Hall (1984a), environmental awareness is integrally linked to awareness of place. 'Awareness' is a cognitive term which describes a variety of mental activities such as "observing, identifying, sending, responding, interpreting, discriminating, appraising, and imagining" (Hall, 1984b). It is also an emotional experience, because besides sensory awareness, it involves feelings and aesthetic appreciation of the cultural and natural environment (Hall, 1984b).

When we think of Geography and children we need to think in terms of how the children interact with their world or environment, what their experience is of place (Binns, 1996; Catling, 1987). Children are curious and have inquiring minds. They ask questions such as Why? Where? How? We must not stifle their enquiry, as much formal education tends to do, but should encourage it (Unwin, 1992). In other words, teachers should not undermine children's imagination, that is, their capacity to build a mental image or create an image of place, real or imaginary (Catling, 1987). On the contrary, children's creative and constructive abilities can be developed through Geography learning, and since this development cannot take place in a vacuum, Geography needs recourse to a wide variety of resources.

Geography remains an important subject for children, because through it they learn about real life. This is the reason Geography teachers should try and make their subject as real as possible, by making use of real life resources. In this way learners will "see that what goes on in their classroom is directly linked to what goes on in the real world" (Hill, 1995:47). Children should learn to know that Geography is "that which is all around us" (van Harmelen and Irwin, 1995:36).

2.4 PRIMARY SCHOOL GEOGRAPHY IN SOUTH AFRICA AND THE POSITION OF GEOGRAPHY IN THE OUTCOMES-BASED EDUCATION SYSTEM

In South Africa, primary school Geography has not been researched as much as secondary school Geography, yet the primary phase is a very important level of the

child's learning. This level serves as a basis for all future learning. If the child does not get a good foundation at this level, his/her future education suffers. Emphasizing this fact, the World Bank has stated:

> Education is a cornerstone of economic growth and social development and a principal means of improving the welfare of individuals. Primary education is its foundation. (Cited in Cole, 1994:3)

Weber (Sowetan Time Out, 1995:15) wrote:

> Few people realise the extreme importance of primary education; yet this phase provides the roots for other forms of education. If the roots are weak, the plant will not survive and bear fruit.

Describing the importance of primary education, the White Paper on Education (1995:34) stressed that:

> The care and development of young children must be the foundation of social relations and the starting point of human resources development strategies from community to national level.

Since the introduction of outcomes-based education in South Africa, the status and position of Geography in primary schools has changed. Geography does not appear as a discrete subject in the curriculum. It is now primarily located in the Social Sciences or Human Sciences learning area with other subjects which mainly focus on human beings. However, it also permeates other areas of learning (see Table 2.1).

TABLE 2.1: THE POSITION OF GEOGRAPHY IN THE LEARNING AREAS OF OUTCOMES-BASED EDUCATION

CORE LEARNING AREA	DESCRIPTION, INCLUDING OPTIONS
Communication, Literacy, Language Learning	Literacy, South African official languages, other modern world languages, classical languages
Numeracy and Mathematics	Numeracy, mathematics, statistics, etc.
Human and Social Sciences	Geography, history, democracy education, development studies, world ethical and belief systems, utility and social services
Natural Sciences	Integrated sciences, biological sciences, physical sciences, agricultural sciences, engineering
Technology	Technology education, information technology, technical education, applied arts and sciences
Arts and Culture	Visual, expressive and performing arts, music education, movement, oralcy studies
Economic and Management Sciences	Economic education, financial management, business education including entrepreneurship, public management
Life Orientation	Health education, career guidance, lifelong learning skills, inter and intra-personal development, religious studies, physical education

(Table adapted from Lubisi, et al., 1997:24)

The new position of Geography in the national school curriculum was necessitated by the changes in the curricula as a whole, the purpose of which is an integrated, skill-based education system. The country's education has moved from a content-based system of discrete subjects to a unified, integrated, skill-based system of learning areas (Clarke, 1997). Skills, values and attitudes are now emphasized. Geography had to find its place in the learning areas. In outcomes-based education, learning resources are needed more than ever before because learners are no longer as dependent on their teachers for learning.

2.5 LEARNING PRIMARY SCHOOL GEOGRAPHY AND THE THEORIES OF LEARNING

Our understanding of how children learn determines the whole process of teaching and learning (Walters, 1990). Thus, the extent to which we use resource materials in our teaching may largely depend on the theory of learning we hold.

Behavioural theories of learning regard the learner as a passive recipient of knowledge. The child is regarded as a 'tabula rasa' or 'empty vessel' into which the teacher must pour knowledge in the form of facts. The child is regarded as a sponge, which soaks up information, knowledge or facts, transmitted by the all-knowing teacher. Rote learning, drill and practice and passive listening are thought of as conducive to learning.

In the behavioural paradigm, learning is seen as a change of behaviour in learners as a result of their acquisition of knowledge. The emphasis, however, in behavioural theories tends to fall on one dimension of cognitive learning only, that of memory. The teacher gives as much knowledge as possible in the form of facts to be memorized by the learner 'parrot-fashion'. The rationale is that the accumulation of a mass of facts will eventually lead to a change of behaviour, and learning will take place. Since these theories mainly emphasize the role of the teacher, learning becomes teacher-centred. This means that even if the teacher is using resources in his or her lessons, the perception of resource use is that of the teacher using his/her own tool of teaching, and not as the learners' tools for learning. Therefore the role of resources in these situations is minimal. Usually in Geography maps and textbooks become the dominant resources (Bailey and Fox, 1996).

In schools where this group of theories dominates, van Harmelen and Irwin describe the situation as follows:

> Teachers and pupils are not encouraged to question, to challenge or to critically analyse and evaluate that which is prescribed. Rote learning, teacher-tell and the reliance on a single textbook dominate the teaching and learning milieu of the majority of classrooms. (1995:36)

It becomes inevitable that in such learning situations, learners are passive, dependent and uncritical. We cannot hope to produce and develop critical thinkers and independent future leaders under such conditions. We need other strategies of learning which encourage more use of resources, active participation and critical thinking.

The outcomes-based education model adopted by South Africa focuses on social constructivism, which regards children as the architects of their own learning. Children take co-responsibility for their own learning and construct their own knowledge within a variety of social settings. Knowledge in this theory is seen to 'fit' rather than 'match' reality (Saunders, 1992; Bodner, 1986).

The children in constructing their own knowledge must be viewed as unique beings with unique individuality and abilities. In a learning situation children should therefore be treated as individuals who must be assisted to construct their own knowledge and allowed to learn at their own individual pace. The learner is an active agent and not a mere passive recipient of knowledge (Brombacher, 1996; Prawat, 1992).

For this kind of learning to take place effectively, the teacher is called upon to create an environment conducive to learning, to scaffold, and to facilitate. The educator has to create and facilitate learning activities in a variety of ways, to cater for different learning abilities and styles. In this kind of education, there is a need for a wide variety of resources for teaching and learning to be effective.

Resources used in this environment are not an end in themselves, but a means through which learning takes place. Osborne and Harlen (1985) defined the role of learners in the constructivist learning situation as one of being involved in developing their own ideas and processing information together and by themselves, while the role of the teacher is to provide experiences and help children to ask and to find answers to their own questions; to help them to reflect on their ideas, to test out ideas and to promote the interaction of children with materials.

Through the use of resources, children are given opportunities to investigate and manipulate their environment. Their curiosity is aroused and information provided to them to construct their own useful ideas (Osborne and Harlen, 1985). During lessons, learners are presented with resources, which they use to construct their own knowledge. According to Walters: "The use of media, demonstration and practical examples can help the teacher make the information more comprehensible to the child" (1990:9).

2.6 WHAT CONSTITUTES RESOURCES: THE MEANING OF 'RESOURCE' IN PRIMARY SCHOOL GEOGRAPHY

According to Martin and Bailey: "Geography is a resource-rich subject" (1996:235). What is a resource and what do we mean by a learning resource?

A resource can mean different things in different contexts. In the wider context, resources include things like time, money, materials and facilities and people (Hill, 1995).

A resource assists us to carry out something well. In the context of teaching and learning, a resource helps to make effective teaching and learning possible. Resources support teaching and learning so that learning can be meaningful and successful. They also help to make education enjoyable and fun, so that children are motivated to learn.

Singh defined resources as "anything which may be an object of study or which assists or stimulates a student in his learning" (Singh, 1982:255).

This definition alerts us to the variety of resources that are available because anything, which serves or supports teaching and learning, can be regarded as a teaching and learning resource.

To illustrate the sort of lateral thinking about resources that is needed for participatory education practice the notion of games and simulation as resources is highlighted. Mills

(1988) and Walford (1996, 1973) regard role-play, games and simulations as among the most useful and available resources that can be used to stimulate teaching and learning. To simulate means to 'pretend as if' or 'feign' or 'reproduce the conditions of a situation'. Simulations are a form of game playing within the young learners' frame of reference, "even if they may not explicitly recognise the activity in the classroom as the cousin of what they do in the playground" (Mills, 1988:142). Children employ simulations even when they are playing together at home, e.g. simulating or acting 'mom and dad'.

Therefore children learn something by simulating that activity. Simulations can enhance "both class participation and geographical understanding beyond what might have occurred in more traditional approaches" (Mills, 1988:142). Simulations help to replicate the situation so that by playing it children can understand it better (Mills, 1988; Maccoll, 1984).

We often hear complaints about the non-existence of resources in the schools. Perhaps the complaint is based on the fact that teachers restrict learning resources to those that are found in the classroom and which they themselves can use as teaching aids. For if we interpret the meaning of resource in a wider sense, we will find that there are many more resources in the classroom and outside the classroom (Opie, 1989).

Resources are available in many guises. Ready-made resources produced by companies and organisations (e.g. in the form of resource packs, pictures and posters) are increasingly available for the teacher. Sometimes these are made available to schools free of charge. It takes the initiative of the Geography teacher to look for addresses and make requests for such material resources.

Feature films can also be used as learning resources in Geography. Such films increasingly come in the form of videocassettes and are therefore a form of television resource (Hollingham, 1997; Butt, 1991; Lambert, 1988; Roberts, 1987). "They provide moving pictures of an area which cannot be visited and promote a sense of place"

(Hollingham, 1991:131). In South Africa there is a National Film Library, where videocassettes and films can be ordered. However, there are many logistic problems in the schools, including a lack of funds for this purpose.

Sadly, in South Africa we do not see government agencies and education authorities being actively and seriously involved in the production and development of learning resource materials. Teachers' organisations and Geography associations in South Africa do not seem to be doing it either. When they do, their efforts are concentrated only on universities and to a lesser extent, high schools, and not primary schools. In the United Kingdom there are teachers' Geography associations and agencies which plan, develop, produce and advise teachers on learning materials at all levels of learning (Bennet, 1989).

The teachers and learners themselves must produce some of the resources. It is not very difficult to collect newspaper cuttings, or artifacts or other resource items from homes. Collections could involve samples of rocks, soil, vegetation types, agricultural produce and products from industries (Holmes and Moorhouse, 1991).

Another form of resource, which is liked by children, is story telling. Carefully planned stories can be used in a Geography lesson as a resource.

People, including learners, teachers, parents, and non-teaching adults are all resources which can be used in the learning process (Hindson, 1989). Guest speakers can be invited to come and talk to the learners on topics relating to Geography or the environment. In this way people in the community could serve as resources of teaching and learning (Maccoll, 1984).

Teachers themselves should be regarded as resources. "Teachers are the most important, most expensive and potentially the most versatile resource possessed by a department" (Bailey, 1986:85). Maccoll (1984) agrees, pointing out that other resources are of secondary importance, since they depend on how they are used by the teacher. Good

schools or departments "grow their teachers, to the obvious benefit of their pupils" (Bailey, 1986:85).

The school itself is a resource whenever it is used for teaching and learning (Pick, 1979). Resources in the school can exist in many forms: people, fixed resources like buildings (e.g. library or laboratory), and moveable resources like books, posters or computer software (Catling, 1995; Hindson, 1989; James, 1988). Moreover, "the school is a microcosm or mini-environment in its own right; an ecosystem" (Pick, 1979:25). Most learning can take place in the schoolyard or in the neighbourhood. It is easier and cheaper to carry out fieldwork in or near the school. As Pick has pointed out, the school "is one of the most underutilised resources available to teachers. It can be used to develop a wide range of environmental, historical and social ideas and skills" (1979:25).

To list every conceivable learning resource would be an impossible task. It is, however, possible to classify them in various ways. We can distinguish traditional resources like chalkboard and textbook from hi-tech modern ones, such as the computer and the Internet. Some writers choose to classify them as first generation, second generation and third generation. First generation resources are those basic ones, which have long existed, like the chalkboard. Second generation resources came into being with modern technological developments, e.g. film, radio, and overhead projectors. Third generation media came on the scene very recently, e.g. TV, VCR and computer (Kruger, 1981). Maccoll (1984) on the other hand, has classified resources as verbal, pictorial and quantitative.

Table 2.2 below suggests the range and variety of resources that are available for teaching and learning.

TABLE 2.2: EXAMPLES OF LEARNING RESOURCES AND MEDIA

- Notebooks and pens/pencils
- Chalkboard and chalk
- Bulletin board
- Flannelboards
- Text/textbooks
- Publishers' wordbook activities, graphs, charts, tables, maps, diagrams
- Atlases
- Models, e.g. globes
- Almanacs
- Wallmaps
- Radio
- Audiotapes/tape recorder
- Videotapes or video cassettes
- Filmstrips
- Slides
- 16mm films/sound or cine projector
- Overhead projector and transparencies
- Television and television broadcasts
- Posters, photographs and pictures
- Artifacts
- Guest speakers and presenters
- Coaxial or phone line classroom connections
- Epidiascope and episcope
- Geographical games and simulations
- Meteorological instruments like thermometers, raingauge
- Other specialist equipment, e.g. clinometer, soil test kit, water test kit
- Records/record player
- Demonstrations and puppet shows

- Multimedia computer station
- Multimedia computer network
- Hard or floppy drive generated programs and data
- CD-ROM
- Laser videodiscs
- Floppy diskettes
- Bar-code readers
- Interactive software
- Liquid Crystal Display Panels (LCD) [for overhead projection]
- VGA to television converter software and hardware
- Fibre optic classroom connections
- Modem
- Telecomputing
- Word processing
- Distance learning
- TV and video recorder
- Realia

(Adapted from Gerber, R., 1995:8(3):53)

The child's world is filled with possibilities for learning. For example, if learners are learning about the topic 'communication', most of their resources may exist in the form of fieldwork. The local environment as a resource of learning includes far more than the traditionally accepted places such as museums, libraries and botanical gardens. Anything that exists in reality can serve as a resource for learning, which is why field trips are so important: they take children out of the classroom to where something real is to be found, for study purposes.

A particular resource which educators tend to neglect, maybe due to lack of time or money, is the display. Cawley writes "to remind readers of the superb educational resource a display can be if used imaginatively, especially for a subject like Geography" (Cawley, 1997:26). Cawley lists the following advantages of a display in a Geography classroom. Displays can:

- show materials on a larger scale and more permanent basis than any other method employed in the classroom
- bring distant places, as well as up-to-date and topical events, into the classroom
- give more time for students to take in images
- provide an additional source of geographical materials such as maps, photographic images, and statistics, and promote their use
- highlight the essential parts of geographical themes being studied. This is ideal for providing a focus for a theme and showing students the aims and progression of a series of lessons, and as a basis for revision at the end of a topic (1997:26-27).

Books in all forms – textbooks, maps, charts – are still important resources for teaching and learning. We cannot learn without them. Teachers should not have the idea that because new, technological media have arrived, books have become obsolete. Maps and atlases, like textbooks, have been with us for a long time and will remain so for a long time to come (Sandford, 1987; Sandford, 1983; Catling, 1980). "Education is so wedded

to the idea of the book that a school without books seems about as likely as a pub without beer ..." (Lambert and Butt, 1996:202).

2.7 USING RESOURCES FOUND IN THE ENVIRONMENT (THAT IS, CLASSROOM AND SCHOOL AND DISTANT ENVIRONMENTS): LEARNING THROUGH FIELDWORK

According to Laws (1984), Geography is fieldwork.

Fieldwork involves using resources found in the environment. Fieldwork possibilities are enormous and range from the school grounds to a variety of opportunities in the local environment, and further, if so desired (May, 1996; May, et al., 1993; Hindson, 1989; McCormick and Weston, 1981).

The advantages of using resources in the classroom and near the school are that no money is required to study them, e.g. for transport or entrance fees. There are some that remain skeptical as to whether fieldwork in the primary school is possible. This view has been refuted in primary schools in the United Kingdom (Rowbotham, 1982; Jex, 1979). The onus is on the teacher to organise the activity at a level suitable to the children.

Unfortunately, as van Harmelen and Irwin correctly point out, in many schools "Geography (as indeed many other subjects) has been taught 'from a book' with fieldwork the exception rather than the rule ..." (1995:36). This is regrettable because the best way for children to learn is "through young children's own first-hand personal experiences ..." (Mills, 1988). And a rich variety of first-hand experiences can be gained from a well-planned field trip.

2.8 THE VALUE AND USE OF RESOURCES AS AIDS TO LEARNING IN PRIMARY SCHOOL GEOGRAPHY

In using and developing resources teachers need to appeal to all the learners' experiences and all their five senses (Hurry, 1989). Teachers should approach a variety of themes and topics in various ways, to motivate learners to learn.

Moreover, classes in South Africa today have become multicultural (Carter, 1987). To satisfy the variety and plurality of cultures, abilities and styles, we need to have a variety of resources for use during lessons as their specific value and use depends on the specific lessons.

Outcomes-based education involves many learning activities occurring in many different ways, with an emphasis on the learners learning at their own pace. The outcomes-based education adopted for the new South African curriculum emphasizes the development of concepts, skills, values and attitudes. The particular skills involved in learning Geography are graphicacy, numeracy, oracy and articulacy. All these are complex and require that teachers harness all the available resources to help learners enjoy and understand learning activities. Craig (1980) has referred to resources as "geographical crutches", effective, interesting, meaningful and fun.

As Holmes and Moorhouse (1991) have said, Geography is a very visual subject, and therefore children should be made to see as much as possible of what they are learning about (Hurry, 1989). It is thus desirable that "students use a wide range of visual materials in order to study the environment..." (Gerber and Wilson, 1984:147).

We also use resources to serve "as a vehicle for the communication and stimulation that make up instruction" (Gagne, et al., 1988:198). Learning involves communication between the educator and the learner. Communication is made more effective through the use of resources. Learners can then enjoy learning activities and effective learning can take place.

It is not, of course, claimed that resources are a panacea for all teaching and learning ills. Effective teaching and learning strategies, dedication and commitment on the part of the teachers and learners are also contributory factors. For it is one thing to have resources and another to use them effectively. It is possible to find a school with many of the much-needed resources not being used effectively. If teachers lack training or simply the will to use them, they will be of no value. Resources on their own cannot teach, and their value can only be felt when teachers and learners use them effectively in their activities.

2.9 OUTCOMES-BASED EDUCATION (OBE) AND THE LEARNING RESOURCE CENTRE

Valuable as fieldwork, is it is obviously not the only way to expose learners to the real world. Time and money does not permit that. In the classroom, other resources can be made available to substitute for reality. If we are really serious about quality education, we should establish infrastructural support for teachers in the form of resource centres.

It is important that resource centres be set up in all schools (Ubsdell, 1992). If each school cannot set up its own centre, the education authorities should do so for a group of schools.

Seeing that resources are so important, it would be a good idea for the school to consider setting apart a classroom to serve as a Geography room or a resource centre (see Figure 2.1 for the possible planning of such a resource centre).

The main purpose of a resource centre is to make independent learning possible through the provision of the necessary equipment (Cullingford, 1995; Bailey, 1974). The Geography room is not just another room, but a laboratory in which learners study Geography (Jordaan and Alberts, 1982).

To serve a variety of purposes, the room needs to be larger than an ordinary classroom. A display area ought to be set aside for various media like pictures, models, and maps

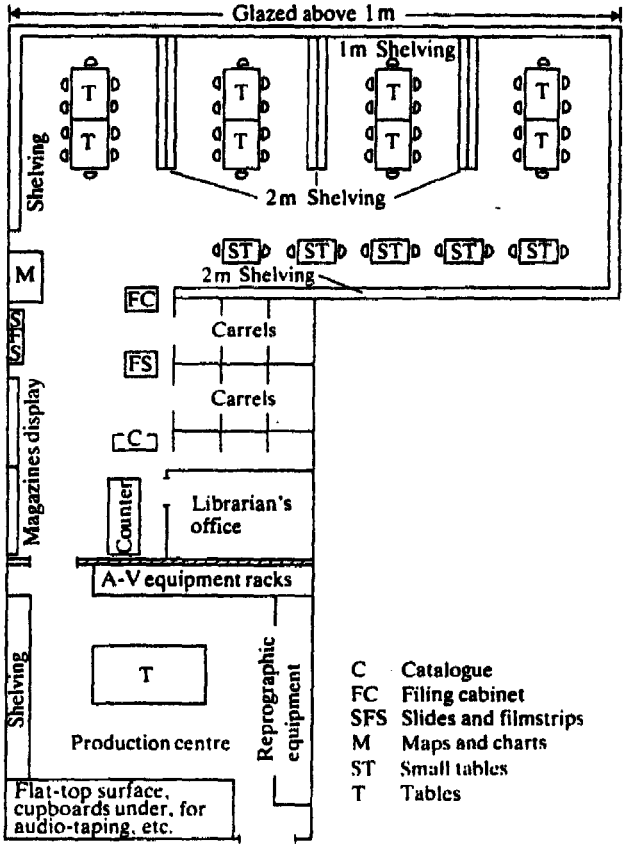
(Holmes and Moorhouse, 1991). The room should have different tables of different sizes, storage cupboards and shelves, bulletin boards and so on. It ought also to be fully equipped with resources such as globes, photocopiers, computers, maps, pictures, posters, TV and VCR, cassettes and books.

Perhaps now that subjects have been grouped into learning areas in outcomes-based education, it would be a good idea to establish something bigger than a Geography room, a school resource centre, to serve all the subjects or learning areas in the school. Cross-curriculum and interdisciplinary borrowing is a major feature of the learning areas in outcomes-based education.

One or more teachers (depending on the size of the school) could be assigned to be in charge of the school resource centre full-time. Their duties could include: maintaining the resource centre, producing learning resource materials in collaboration with the other teachers, purchasing or borrowing resource materials, as well as organising field trips and refresher courses.

Geography, being an eclectic subject, would serve as a good starting point in establishing the school resource centre.

PLAN:RESOURCE CENTRE.



Plan of a resource centre. A fixed and somewhat formal layout is sometimes dictated by circumstances. Here, an L-shaped library room is used for all media storage, grouped into subject bays. Carrels for use of equipment are near issue counter and away from other areas. Resources not easily integrated on shelves are stored within sight of issue counter. A classroom next door has been adapted for a production centre, though not for photographic purposes for which a small dark-room is often sufficient. Plan is not to scale, and amalgamates elements found in several resource centres visited. (*Sources:* Beswick 1972)

Figure 2.1: Figure showing examples of resource centre:

[From Singh, 1982:267]

2.10 GEOGRAPHY IN THE 21ST CENTURY AND NEW RESOURCES FOR LEARNING PRIMARY SCHOOL GEOGRAPHY: INFORMATION TECHNOLOGY AND THE INTERNET

> When I first heard about the Internet, I dismissed it as a plaything for rich, bored American teenagers and of no use or relevance to Geography teaching. Obviously I watch the wrong type of film, because when I was persuaded to try it, I found that I was completely wrong. I was, and still am, staggered by the sheer volume of good quality resources on the Internet that are directly relevant to Geography teaching. (Taylor, 1997:11)

This quotation introduces us to the use of modern world technological resources like computers, the Internet and the World Wide Web, for teaching and learning primary school Geography.

At the beginning of this chapter, mention was made of the ever-changing nature of Geography. As school curricula have changed, Geography has had to adapt to the changes. Now that information technology is upon us, Geography has adapted to and adopted some of this technology to add to its wealth of teaching and learning resources (see Media Classification Table 2.2).

Primary school Geography teachers must be prepared for the classroom of the twenty-first century (Rogers, 1996). Computers, which have "a legion of applications" in Geography (Forer, 1984:174), have infiltrated the Geography classroom (Davidson, 1996; Kent, 1987; Forer, 1984; Shepherd, et al., 1980). A number of these applications are discussed in this chapter.

Our focus is not on computers as such, but on their uses as tools or media for enhancing Geography teaching and learning. As Favaro has said, the most important thing for teachers is "not only how to use a computer but how the computer affects the educational process" (1986:16). In sum, then, our concern is "computer-assisted learning in Geography" (Gerber, 1995).

A study by Miller and Ziegler (cited in Gerber, 1995:52) found that "in areas of teacher training curriculum development, geographical education has begun to regard computer technologies as indispensable tools for teaching in much the same way that the previous educators viewed overhead projectors, audio and video tapes". Gerber himself goes further:

> With the advent of multimedia computer resources, Geography has the opportunity to exploit its comparative advantage as a field of study where visuals provide the raw materials for learning. Through the fourth wave of multimedia, virtual reality, geographical education has come more alive than through the combination of sights and sounds that are found on CD-ROMs and Laser Videodiscs. (1995:55)

Why this enthusiastic embrace of computers, information technology and the Internet? The short answer is that they constitute great sources of information. The greatest advantage of the Internet, for example, is that it offers data on demand. Textbooks can be updated using Internet information; experts can even be contacted on the Internet (Durbin and Sanders, 1996). Indeed, the Internet makes the idea of the global village a reality. Durbin and Sanders write:

> The Internet is another resource to add to the Geography teacher's repertoire. Its unique property is that it positively encourages communication between users through interaction, feedback and the exchange of ideas – all of which can be achieved easily and quickly and at a global scale. (1996:19)

However, the Internet is a new phenomenon and in South Africa only a handful of schools are thus far connected. But this is beginning to change, thanks to initiatives like NetDay '97, a project to promote the connection of schools in South Africa to the Internet.

Geography teachers need to acquaint themselves with what is available, and learn techniques for using new media. It is important that "Geography teachers everywhere should have an idea of the innovations available" (Singh, 1982:255). Our world is changing very fast and so are curricula and the means of teaching and learning them.

Primary school Geography teachers need to adapt their teaching strategies and use of resources to changing times.

According to Garner and Holmes:

> The revolution in information technology presents Geography with important new opportunities and significant challenges that are without parallel in the history of the discipline. (cited in Davey, 1995:43)

The advantages of using Information Technology as a resource in Geography are many. Hassell (1997) lists the following:

- the educators and learners can gain access to a wide range of geographical knowledge and information resources
- their understanding of environmental and spatial relationships is deepened
- alternative images of people, place and environment are experienced.

Simmonds saw the value of using computers as follows: "The most exciting thing about using computers is that it forces you to think how you teach and structure your lessons" (1985:129). The following are some of the advantages of using computers for learning Geography:

- A wealth of information can be accessed in the Internet, using the browser program and much information can be viewed on the World Wide Web. Some of this information is relevant for Geography (Taylor, 1997).
- Geography topics covered include weather, ecosystems, graphics and maps, and pictures (including satellite pictures) are also to be found (Hilton, 1991; Selmes, 1991).
- Information or pictures can be printed out and be used in the same way that books or newspaper articles are used (Taylor, 1997).

TABLE 2.3: SHOWING EXAMPLES OF GEOGRAPHICAL TOPICS ON THE WEB SITES

Example web sites:
http://www.meto.govt.uk/ - UK Met Office – excellent daily weather satellite images

http//:mai.hyg.med.kyotou.acjp/kansai./quakepage.html – Kobe earthquake site

http://thunder.atms.purdue.edu./hurricane.html– live hurricane information

On-line Learning
Some sites offer the facility to pose questions to an expert. Other sites provide students with on-line activities.

Example web sites:
http://www.meto.govt.uk/ - the UK Met Office has a students' enquiry page
http://icair.iac.org.nz/ - the Antarctica page has a series of on-line worksheets (figure 1).

Virtual Geography
A great many tourist offices around the world have pages of information on the web. You can go on a virtual tour.

Example web sites:
http://www.asiaville.com/ - Asian explorer (figure 2)
http://www.u-net.com/ - virtual Manchester
http://www.tourism.wales.gov.uk/ - the Welsh Tourist Board
http://www.totalny.com/ - virtual New York

(Adapted from Whiddon, Teaching Geography, 21(3), 146-147)

An important application of information technology not mentioned thus far is the CD-ROM (Compact Disk-Read Only Memory). They are becoming commonly available. They come in many forms, e.g. text-based retrieval systems or multi-media containing graphics, animations, sound and video (Martin and Swift, 1996).

A number of geographical skills can be taught using multi-media CD-ROMs. Martin and Swift (1996) cite the following uses and advantages of CD-ROMs:

- Geography recognises the value of building on the child's own experience. Many pupils use information technology in their social lives and do play games. Geography educators need to build on this experience.

- Geography is involved with real issues and real problems. Information from CD-ROMs can enable the learners to take responsibility for their own geographical enquiry.
- Geography is about the real world and real people, and Geography teachers need to offer the learners high quality material.
- Using CD-ROMs, teaching and learning can be differentiated to cater for different and various learning styles.
- Geography is wide, and has links with many subjects. CD-ROMs can assist that Geography teachers are not geographic specific.
- CD-ROMs enable Geography teachers to differentiate individual needs during teaching and learning.
- CD-ROMs are an integral part of the learner trying to learn geographical concepts and skills.
- CD-ROMs can enrich both Geography teachers and learners through access to information.
- "Geography is fun. We must not forget to enjoy our teaching and learning. CD-ROMs may help!" (Martin and Swift, 1996:22).

Learners can use computers to learn and develop information handling skills, that is to collect, analyse, synthesize, evaluate and draw conclusions (Hassell, 1996). Davey claimed that: "those Geography classes making regular use of computer-based IT were found to have made the greatest learning gains" (1995:43). Learners' writing skills also improve when they use word processors (Hassell, 1996).

Quoting North American findings, Davey writes that research in "social studies shows that when a computer is used for interactive multimedia methods of instruction, retention is raised 80 per cent compared to a 40 per cent with lecture, visuals and discussion and 20 per cent with only lecture and visuals" (Northup, Barth and Kranse, cited in Davey, 1995:43).

For outcomes-based education computers will increasingly play an important role because they are a suitable tool for individual or group learning, a teaching-learning strategy that this system emphasizes.

But even if the value of using information technology in the Geography classroom is appreciated and understood, a developing (or unevenly developed) country like South Africa faces major obstacles. Unlike the United States or the United Kingdom (where information technology has been incorporated in Geography curricula since 1993), the new technology is only gradually and unevenly being introduced in South African classrooms. For instance, most of the schools being connected to the Internet are those in the bigger cities. Rural schools lack infrastructure. They lack electricity, money and big business sponsors.

In his survey of media in the former Model C primary schools in the former province of Natal, Taylor (1994) found that the use of computers was ranked last. The situation in underprivileged schools is even worse.

The Department of Education does not have enough money to provide such facilities and amenities. This means that schools and communities themselves will have to do something for their children, so that they do not lag behind in their education. Parents, too, could help so that if schools cannot provide computers and the Internet, learners might at least have access to these resources in their homes. The problem is that most parents are too poor to afford a computer, which is considered a luxury even in an average wage-earning household.

Although using computers has many advantages, there are disadvantages as well, such as when learners encounter undesirable and harmful material on the Internet like pornography or radical political propaganda (Whiddon, 1996). Geography teachers in the primary schools need to be aware of this. Further, unless teachers fully understand how best to use this resource for their teaching/learning situation its value is severely reduced. Holmes mentions another disadvantage of computers, which is a possible tendency to

focus on the computer rather than on the geographical aim of the lesson (Holmes, 1996). The computer should be regarded as a resource of learning when used for a Geography lesson. It should not be an end to itself. Holmes stresses that IT in Geography seems most successful when used to supplement learning materials and not always as the focal point for learning. Yet it should not be forgotten that this technology is exciting for children and should form a stimulus to encourage their participation and in turn generate wider considerations (Holmes, 1996:132).

Perhaps learners should have the last word. These are the findings from Miller and Ziegler's survey, reflecting American students' perceptions of computer technologies and their learning processes:

1. Computers will never replace teachers.
2. Computers assist visual learning and cater to multiple learning styles.
3. Computers make learning more fun.
4. Computers give students control over the learning process.
5. Computers prepare students for the future.
6. Computers centralise the learning environment.
7. Computers make you think more.
8. Computers make learning more efficient.
9. Computers allow students to achieve perfection in the final product and build self-esteem.
10. Computers allow students to set their own pace. (cited in Gerber, 1995:56)

2.11 SUMMARY

What this chapter has highlighted is that Geography has changed over the years and will continue to change.

The essential aim of studying Geography for primary school children is to understand the concepts: 'place', 'space', and 'environment'. Furthermore, the study of Geography helps equip children with essential knowledge, skills, attitudes and values.

For all these to be learned effectively and successfully, teachers and learners need a wide variety of resources. The introduction of outcomes-based education has made the need for a wide variety of teaching resources even more urgent.

Fieldwork remains a cheap, effective and readily accessible source of resources. But Geography has changed and is changing; strategies and resources for teaching and learning it have also changed. New strategies are being adopted and new resources added to the existing ones. Examples of the latter include the computer and the Internet, which can be used together with traditional resources like maps and books.

Teachers and learners must be trained to use these resources effectively. And every effort must be made to increase their availability in all schools, rural as well as urban.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 INTRODUCTION

The goal of this research was to investigate perceptions of teaching resources and the availability and use of such resources, by teachers and learners in schools in one inspection circuit of a region in the Northern Province. The research surveyed the sixty-seven senior primary schools in the research area, from which three schools were selected for an in-depth case study.

In order to achieve this goal, the research was located in an interpretative, naturalistic paradigm and employed a multi-data approach.

This chapter therefore analyses:

(1) the paradigm in which the research was located;
(2) the research procedures that were followed;
(3) the research instruments that were used; and
(4) the limitations of the methodology and instruments employed.

3.2 THE RESEARCH PARADIGM

The research aim and the situation in which the research was located led to the selection of the interpretative naturalistic-humanistic paradigm (Keeves, 1988; Lincoln and Guba, 1985). Research in this paradigm takes place in natural settings such as the school (Guba and Lincoln, cited in Keeves, 1988). The table below shows the key characteristics of the naturalistic-humanistic paradigm as compared to the scientific paradigm:

TABLE 3.1

The Key Characteristics of the Naturalistic-Humanistic Paradigm Compared to the Scientific Paradigm (Guba and Lincoln, cited in Keeves, 1988)

POSITIVISTIC/SCIENTIFIC/ RATIONALISTIC PARADIGM	NATURALISTIC-HUMANISTIC PARADIGM
• Is based on the belief that there is a single, tangible reality.	• Is based on the belief that multiple, intangible realities exist in the minds of people.
• The enquirer and the respondent can maintain objectivity.	• The inquirer and the researched are interlinked.
• Generalizability is possible.	• Generalizability is not possible with humans.
• There is cause-effect relationship.	• Human relationships are interconnected.
• Enquiry is value-free. Key characteristics include:	• Values impinge upon enquiry. Key characteristics include:
• Methods are quantitative.	• Methods are mainly qualitative.
• The formulation of theory.	• No belief in theory formulation.
• The use of instruments which are treated 'objectively' and as 'objects'.	• Humans as research participants are treated as subjective, flexible, responsive entities.
• The design is based on the proving or displaying of hypothesis.	• The design does not necessarily depend on any appropriate theory or hypothesis.
• Setting: in the laboratory.	• Setting: is natural.

From the above table the following characteristics of the naturalistic paradigm are highlighted as being particularly relevant to the research question which motivated this study:

a) Any study involving human beings should focus on their interaction in their actual social settings. That is the reason the paradigm is known as 'naturalistic-humanistic'. According to Ely, "naturalistic research lets you explore those things that arise naturally in social situations" (Ely et al., 1991:46).

Qualitative methods are stressed within the naturalistic paradigm not because the paradigm is anti-quantitative but because qualitative methods come more easily to the human-as-instrument (Lincoln and Guba, 1985).

b) The naturalistic-humanistic paradigm makes use of descriptive-illuminative designs, based on case studies and social anthropological methods (McKernan, 1991). The qualitative data analysis focuses on seeking to describe and to interpret rather than to measure.

During the course of my research, the activities of educators and learners in the classroom were observed, described, explained and interpreted. They were not quantified, but described qualitatively.

c) Within this paradigm it is held that human behaviour is strongly influenced by aspects of its context, such as social and economic factors (McKernan, 1991). Actions and behaviour are therefore best understood when studied in their context: "behaviour must be studied in the field, by the practitioner, who may be helped by a collaborating team" (McKernan, 1991:7).

In the case of this research, I visited the schools, where interaction between educators and learners actually takes place. I observed activities as they occurred, and made notes in the field, on the schools' premises and particularly in the classrooms.

d) This paradigm, unlike the positivistic or scientific paradigm, does not believe in value-free research and total objectivity. It recognises that the researcher, as a human being, can never be totally objective. The researcher should nevertheless strive to avoid bias and prejudice, through constant critical reflection.

Therefore, whereas in the positivist paradigm the researcher is a quantitative-empiricist, in the naturalistic-humanistic paradigm, the researcher is an interpreter, a qualitative

participant, who observes and interprets the feelings and values of the subjects in their setting (Anderson et al., 1994; McKernan, 1991; Spindler and Spindler, 1987). This suggests that subjectivity and prejudice are not the same thing. Whereas prejudice is undesirable, subjectivity is part of us, and is not necessarily a negative thing.

Wolcot (cited in Denzin, 1994) argues that the traditional emphasis on and methods of generalizability are not appropriate for researchers in social science and education, for they should be interested more in meaning and interpretation than in generalizability as such. Research within this paradigm is characterised more by the researcher wanting to explore and understand the nature of social phenomena than to test hypotheses (Denzin, 1994).

Therefore the naturalistic paradigm tends to advocate detailed study of a small number of cases which focuses on verbal descriptions and explanations to make meaning.

In this study the primary focus was on the three schools selected from the target population of sixty-seven senior primary schools in the research area. The initial survey was included to provide a 'bigger' picture from which the smaller case study could refine and enrich the data gathered.

3.3 AN EDUCATIONAL CASE STUDY

Yin has defined a case study as an empirical inquiry that investigates a contemporary phenomenon within its real life context, when the boundaries between the phenomenon and context are not clearly evident and in which multiple sources of evidence are used (1989:23).

Hammersley (1994) defines the term 'case' as "the phenomenon (located in space/time) about which data are collected and analysed, and that corresponds to the type of phenomena to which the main claims of a study relate" (Hammersley, 1994:184).

According to McKernan, "a case study is a formal collection of evidence presented as an interpretative position of a unique case, and includes discussion of the data collected during fieldwork and written up at the culmination of a cycle of action, or involvement in the research" (McKernan, 1996:74).

Thus in a case study, there is a narrow focus on a particular person, site or scene. The reason for concentrating on a single phenomenon or entity is to uncover the interaction of significant factors characteristic of the phenomenon (Anderson et al., 1994). An educational case study concerns itself with the understanding of an educational action or phenomenon (Stenhouse, cited in Keeves, 1988) actually happening in schools and classrooms (Walker, cited in Hammersley, 1995).

A sample or individual unit studied in a case study should either be highly representative of a particular population or extremely atypical (Huysamen, 1994). The case needs to be defined or demarcated, that is, boundaries need to be determined (Huysamen, 1994). My case study restricts itself to investigation of the use of teaching resources in the classrooms of three schools representative of a larger educational context.

In case studies, the emphasis is on understanding, rather than on assuming a value stance. We try to understand how things happen and why (Anderson, 1990). We try to understand the uniqueness of each particular case in its complexity (Huysamen, 1994). The deceptive simplicity of case studies has led to their being criticised. Entwistle, cited by Walker (1993:19), suggested that "the simplest approach to educational research is the case study". Case studies have also been criticised as lacking in rigor, an allegation refuted by Yin (1989) and Anderson (1990). According to Anderson, the fact that case studies do not rely heavily on statistics does not render then less valuable (Anderson, 1990). Case studies may be considered even more valid and more rigorous than traditional forms of educational research because they use multiple source data, whereas other research methods often draw on a single source of data, e.g. surveys or experiments (Anderson, 1990; Yin, 1989).

Another criticism leveled at case studies is that they do not allow for generalization (Anderson, 1990; Yin, 1989). Anderson suggests that the case study method "in its best form, is valid, rigorous and often generalizable" (Anderson, 1990:158). However, it is difficult to generalize on the basis of a single case. If several cases are studied, and are found to have something in common, generalizability is possible (Anderson, 1990). Stenhouse (in Keeves, 1988) does not rule out generalization. He argues that generalization and application are matters for judgement rather than for calculation, and the task of the case study is to produce ordered reports of experience which invite judgement and offer evidence to which judgement can appeal (Stenhouse, cited in Keeves, 1988:49). The most important function of case studies is to investigate and understand, and to search for recurring patterns and consistent regularities. Triangulation is usually used to discern these patterns (Huysamen, 1994).

Criticism of a method may of course be valid when that method is used poorly. Any method, which is used poorly, will tend to have weaknesses, and will produce poor results. The case study is a valid method, but we must be careful to use it effectively. That is, the researcher has to be careful not to be sloppy, careless or biased (Anderson, 1990; Yin, 1989).

Using the case study method, the researcher has to ask good questions, to listen attentively, to adapt, and to understand clearly what is being studied (Yin, 1989). Some researchers question whether the involvement of the researcher in the situation is justified or not (Walker, cited in Hammersley, 1995). However, it has to be understood that in this type of research, it is not possible for the researcher to detach himself/herself. Justification for this involvement should not present any problems, as long as the researcher guards against bias and prejudice.

For the sorts of reasons adduced above, I found the case study to be the most appropriate to the investigation of resources at the three schools. If during the course of analysis it emerges that there are problems, recommendations will be made. It will be left to readers who find themselves in a similar situation to decide whether they would want to try out

the recommendations, in order to solve similar problems in their own unique context. This cannot be regarded as generalization in the sense in which it emerges from quantitative research.

3.4 ACTION RESEARCH

"Research that produces nothing but books will not suffice" (Kurt Lewin, quoted in McKernan, 1991:3). I begin with this quotation in order to emphasize that research should do something positive for our lives, that research should not be done for its own sake. There should be a useful purpose, and the purpose of action research is to improve practice, to improve our lives.

Thus, within the dimension of the case study, I felt I needed to go one step further than interpretation, and hence an element of action research was incorporated.

"The linking of the terms action and research highlights the essential feature of this method: trying out ideas in practice as a means of improvement and as a means of increasing knowledge" (Kemmis and McTaggart, quoted in McNiff et al., 1996:9). The central idea is improvement, so the central question is: how can I improve? (McNiff et al., 1996). Since action research is motivated by the concern to improve a situation, in my research the main concern was to improve teaching and learning through the effective use of resources.

Ideally, in action research, the problem should emanate from the practitioners themselves, and research should be initiated by them, and not by an outside researcher (Bless, 1995). However, in the case of this research project, the initiative came from me, and not from the Geography educators at the schools concerned. Knowing that effective and meaningful learning can only take place in the classroom when there are adequate resources that are used effectively, I was inquisitive about what was happening in Northern Province senior primary schools. I wanted to know what was happening in the

classrooms in these schools. How are the educators utilizing what they have (if they have anything)? How are they coping? What are they doing, or what can they do to obtain what they do not have? What is needed to provide support for teachers to develop a different perspective on resources and their utilization? These and many other such questions were to be answered by the findings of this research.

Geography in outcomes-based education is located in the Social Sciences/Human Sciences learning area, together with other subjects. I think I can safely claim that what is happening in Geography is also happening, in terms of resources, in the other cognate subjects taught at the schools included in my case study. Nor do I think that the situation is different at similar schools and, although my case study focussed on the intermediate (Grade 5 and 6) phase (senior primary classes), I doubt that the situation is different in other classes at the same schools, e.g. Grades 3 or 4.

Action research is difficult to define, because its practice varies with time, place and setting (Zuber-Skerrit, 1996; Cohen and Manion, 1994). According to Cohen and Manion, action research is "small-scale intervention in the functioning of the real world and a close examination of the effects of such intervention" (Cohen and Manion, 1994:186). McNiff et al. confirm the centrality of praxis in action research. Praxis is informed, committed action that gives rise to knowledge, rather than just successful action. It is informed because other people's views are taken into account. It is committed and intentional in terms of values that have been examined and can be argued. It leads to knowledge from and about educational practice (McNiff et al., 1996:8).

Action research is used to find a solution to a particular problem, and not to test a theory. It therefore works well in conjunction with the case study, in that a case is usually a problem situation (Huysaman, 1994). Through action research, practitioners intend to improve their own practice. 'Outsiders' can play the role of facilitators but the collaboration of practitioners is essential (Carr and Kemmis, cited in Hammersley, 1995; Altrichter et al., 1993). In my research, the practitioners who were involved with me in

participatory action were the Geography educators and learners in Grades 5 and 6 at the three selected schools.

Action research can be described as democratic and emancipatory (Huysamen, 1994; Kemmis and McTaggart, 1988) in the sense that all the actors involved in the research process are equal participants and must be involved in every stage of the research. The research process cannot be planned outside the participant group and then 'handed over' for implementation and subsequent evaluation by an outsider (Carr and Kemmis, cited in Hammersley, 1995:238).

In sum, I chose the action research approach because it complements the case study, and my study was aimed at addressing real life issues in education, namely the availability/non-availability and use of resources. My desire was to help practitioners improve the situation at their particular schools; indeed the primary goal of the project was the improvement of teaching and learning in the senior primary classes of three selected schools in the Northern Province through the better use of resources.

Action research tends to proceed in a progressive, cyclic manner in the sense that results can at any stage send the researcher back to reconsider initial aims and assumptions. Strategies can be changed, plans revised and adjustments made at any time during the course of the research (Huysamen, 1994). This is a great advantage of the approach, because it means that the action or the direction of the action is not fixed but flexible. The goals and methods of the research can be changed to suit the requirements of the situation.

According to Lewin, action research consists of: analysis, fact-finding, conceptualization, planning, execution, more fact-finding or evaluation; and then a repetition of this whole activity in a spiral of circles (Hopkins, 1993). Lewin sees action research as a reflective process which happens in the form of steps, and each step has four stages, namely, planning, acting, observing, and reflecting (see Figure 3.1 below).

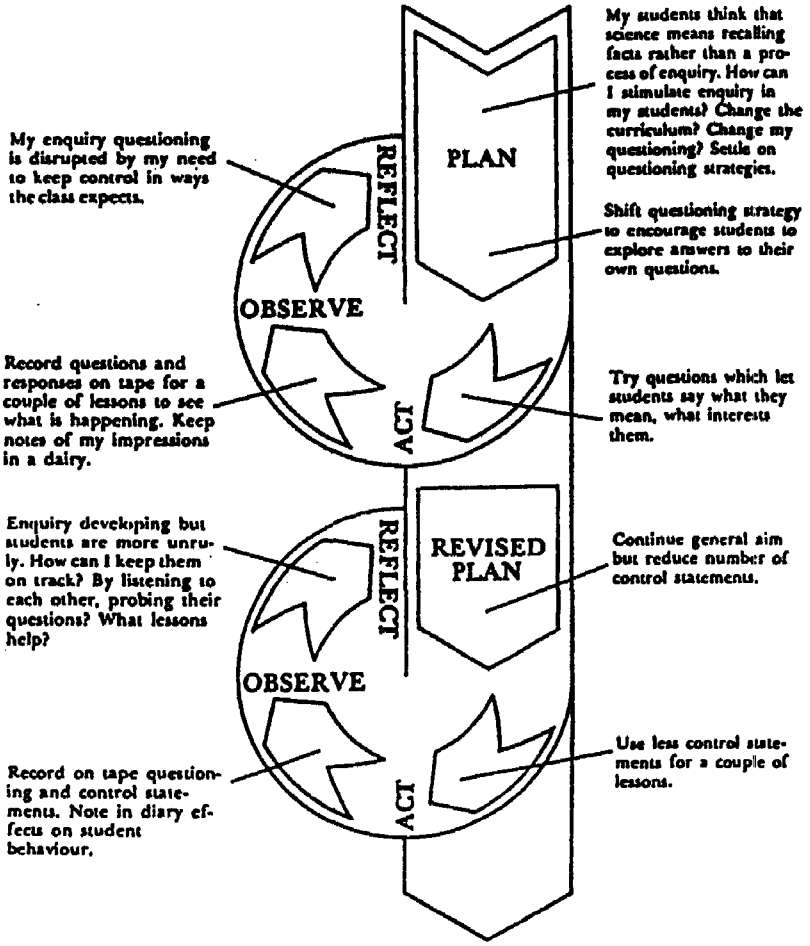


Figure 3.1

Deakin action research model (in McNiff, 1988)

Since action research progresses in a cyclical fashion through planning, acting, observation and reflection and evaluation (Huysamen, 1994), it does not follow a straight line from problem to solution (Carr and Kemmis, cited in Hammersley, 1995). It is not to be expected that a problem will be solved at once.

My research used qualitative methods mainly, and followed the interpretative approach, not the predictive approach of quantitative, positivistic science. The research followed a participatory action research programme, in which educators and learners at the three schools, which constitute the case, collaborated with the researcher, in order to look at the situation closely. The main purpose was to conduct an in-depth analysis in order to know and understand what happens at these schools with regard to resources. We have often heard general remarks about education in the 'poorest province' of South Africa, but we need to know what is happening inside the classrooms. How are the educators and learners coping? What are they doing? What are the opportunities? What are their fears and frustrations? These are some of the questions the researcher had to address, and find answers to. It is hoped that these findings may serve to enhance our understanding of the situation at such schools.

As action research favours the use of multi-data, different methods or tools were used for the collection of data. When I reflect on what I did in this research, I realize that I could not possibly have followed all the steps identified as constitutive of action research, although I did employ several elements of action research in my investigation. As I pointed out at the beginning of this section, "there is no general formula for doing action research" (Bless, 1995:56).

3.5 RESEARCH PROCEDURES AND TOOLS USED

The case study method uses multiple data sources. It is eclectic in that it makes use of a variety of styles and methods (McKernan, 1996). By using various methods we allow different perspectives to emerge, so that in the end we have a holistic view of the

situation (Denzin, 1994). For this study the following research tools were used to collect data: a small-scale survey using questionnaires; interviews; and direct observation on site. I was solely responsible for the collection of the data, and was closely involved as an active participant-observer in the situations at the three schools. Before I visited the schools, I sent out sixty-seven questionnaires to the target population of senior primary schools in the Northern Province. From this target population of sixty-seven schools, three schools were selected for an in-depth study.

3.5.1 Survey/Postal Questionnaires

A survey can be used to collect many kinds of data relatively rapidly. It is a useful tool when the population being investigated is very large (Cohen and Manion, 1994).

In postal or mail surveys, the questionnaires are posted to the respondents, who are requested to complete and return them (Huysamen, 1994). Therefore the respondents targeted should be able to read, write and follow instructions (Huysamen, 1994). The questionnaire must be designed with care, and with particular attention paid to the content and wording of questions. Everything should be made appealing and easy for the respondents, who will answer the questionnaire in the absence of the researcher. Self-addressed stamped envelopes must be enclosed in the questionnaires mailed; and a covering letter must be included (Cohen and Manion, 1994).

The survey method was used in this research because I wanted to collect baseline data on the whole target population. This was important since the three schools to be studied in depth were to be drawn from this population. These general data could then be used for triangulation, to test validity.

Defining the target population is not always easy. Since the research focus was on resource use in Geography in senior primary schools, the target population in the research location was too large for the purposes of this research. For this reason it was decided to

limit the survey to one inspection area in the province, that of the Thohoyandou district in the former Venda. I visited the Inspection Area Office at Thohoyandou to obtain a list of all the senior primary schools under its jurisdiction, which then constituted my target population.

This was a small-scale survey (Cohen and Manion, 1994). Most of the schools surveyed are deep in the rural areas of Thohoyandou in the Northern Province. One would have had to travel many kilometers to deliver the questionnaires personally. Then one would have had to travel the same distance again to collect the questionnaires, without any guarantee that one would find them ready for collection. For these reasons I had to post the questionnaires (Cohen and Manion, 1994).

It is important to design questionnaires with great care. A distinction is made between open-ended and closed-ended type questions (Huysamen, 1994). In open-ended questions, respondents are free to answer the way they like, and to express themselves freely, whereas in closed-ended questions, their responses are limited to given alternatives, from which they choose. Both types of questions have their own weaknesses and strengths. It is therefore good practice to use both types in the same questionnaire, and the questionnaires I sent out were made up of both open-ended and closed-ended questions.

One disadvantage of postal survey questionnaires is that with high postage rates, they can be very expensive. Another disadvantage is that the return rate may be low (Huysamen, 1994; Cohen and Manion, 1994). Then there is the possibility of language difficulties which may result in misunderstandings (Oppenheim, 1994). In this research I experienced both the latter problems. The questionnaire return rate was 39%, which, however, fell within the acceptable range suggested by Cohen and Manion (1994) for postal survey.

3.5.2 **Sampling**

The Northern Province is divided into six education regions. From the Thohoyandou Area Office, in the Northern region or Region 3, I obtained lists of schools and their addresses. The list showed a total of 151 schools, including the 67 senior primary schools which were to form the target population. Out of this number, three schools were selected through sampling procedures.

Dane (1990) described sampling as a process of selecting participants for a research project. Participants are selected as units or individuals or elements representing the whole population. The term 'population' in this context does not refer to people only, but designates the entire group that you wish to describe (Jackson, 1995:394). The rationale for sampling is that in most cases it is not possible to research every single unit/member of the population, due to time and financial constraints (Cohen and Manion, 1994). Therefore a small group called a sample is chosen to represent the whole population. The sample should have properties which makes it representative of the whole population (Bless, 1995). Concerning samples and interviewing them, Oppenheim has said that "it is important for the interviewer to be able to explain how the particular respondent came to be selected for the sample and why it is important that he or she, rather than someone else, takes part" (Oppenheim, 1994:82).

There are various ways of doing sampling. Purposive sampling, also called judgmental sampling, is a non-probability sampling method based on the judgement of the researcher regarding the characteristics of a representative sampling (Bless, 1995). "Purposive sampling refers to procedures directed toward obtaining a certain type of element" (Dane, 1990:303): members of the population are selected for the sample for certain purposes or due to certain reasons. According to Patton (quoted in Denzin, 1994), "the logic and power behind purposeful selection of informants is that the sample should be information rich" (Denzin, 1994:229). The members of the population are handpicked by the researcher for inclusion in the sample on the basis of their typicality (Cohen and Manion, 1994). Researchers rely on their experience, ingenuity or previous research to

deliberately find participants in such a way that the sample obtained is regarded as representative of the relevant population (Huysamen, 1994). However, although participants in the sample may be regarded as representative of the population it may not be accurate to generalize about the whole population simply on the findings of the sample. It has to be remembered that case study research is not sampling research. "We do not study a case primarily to understand other cases. Our first obligation is to understand this one case" (Stake, 1995:4).

I followed purposive sampling procedures because it was consonant with the aims of the research. As already mentioned, I chose three schools from a target population of 67 senior primary schools offering Geography in the Northern Province. The desire to conduct a small-scale, in-depth case study guided my choice of sample. The choice of schools was based on convenience and accessibility. I did not want to choose faraway schools where I would spend all my time and money travelling. Most of the schools in the target population are found in the rural areas of Thohoyandou, and access to most of them is very difficult because of bad roads. There are other factors: on several occasions appointments were cancelled on the spot, after I had arrived at the school. Sometimes I arrived to find that there was no school going on, or there was nobody on the school premises or the gate was locked. Most of the schools have no telephones and therefore no means of communicating with me before I arrived. Sometimes the telephone was there, but operating on a poor farm line and it was very difficult for the educators to get through to me.

The sample I chose was therefore purposive to cater for all these difficulties. All three schools selected are not very far from Thohoyandou town. They are within a radius of about 10 kilometres. I struggled for a number of days to reach the gate of one of these three schools when it was raining. Roads to two of the three schools are not tarred. However, because these three schools are near to my home, despite the road conditions mentioned above, I managed to reach them on the days of my appointments. The purpose of the sample is not generalization, but an understanding of the unique situations at these three specific schools. Perhaps the main consideration should not be whether

every school is like that or not, but what a school in a similar situation can do to cope with a similar condition.

According to Lincoln and Guba, naturalistic sampling is, then, very different from conventional sampling. It is based on informational, not statistical considerations. Its purpose is to maximize information, not facilitate generalization (Lincoln and Guba, 1985:202).

3.5.3 Personal Interviews and Audio Tape Recording

Another important tool used in the collection of research data for this study is the personal interview. Research interviewing is not just another ordinary conversation (Oppenheim, 1994). In a personal interview, the researcher and the respondent come face to face, and the researcher records the respondent's responses (Huysamen, 1994; Denzin and Lincoln, 1994).

According to Oppenheim (1994), when taken seriously, there is no other skill as important to the survey research worker as the ability to conduct good interviews: "the interview, unlike most other techniques, requires interpersonal skills of a high order (putting the respondent at ease, asking questions in an interested manner, noting down the responses without upsetting the conversational flow, giving support without introducing bias); at the same time the interviewer is limited by his or her own sex, apparent age and background, skin colour, accent, etc." (Oppenheim, 1994:65).

Personal interviews differ from telephonic interviews in that in personal interviews the researcher and the respondent meet face to face. Through interviews we come to understand how people experience their own situation, how they feel, etc. The purpose of interviews is not to test hypotheses, gather answers to questions or corroborate opinions, but to reconstruct experience and explore meaning (Seidman, 1991). Interviewing allows us to put behaviour in context and provides access to understanding

people's actions (Seidman, 1991:4). However, to see things from the point of view of the other person is a great challenge to the researcher. It is not easy, because we all have our own perspectives. As Schutz has said, "it is never possible to understand another perfectly because to do so would mean that we had entered into the other's stream of consciousness and experienced what he or she had. If we could do that, we would be that other person" (cited in Seidman, 1991:3). It is not possible to be the other person, so all we can do is to try and understand what the other person is experiencing.

An interviewer must try by every means possible to avoid prejudice and bias. Powney (1987) warns against self-fulfilling prophecies in research interviews. The interviewer must be a skillful, experienced or trained person, someone with good listening skills.

Interviews can take many forms, and are called by many names, depending in part on the type of research. They are commonly classified into structured, unstructured and semistructured interviews. The interview type which I found most suitable for this research is the semistructured type. In this type of interview only guides are used, instead of a rigidly prepared interview schedule (Huysamen, 1994). The respondent is allowed to raise issues as the interview progresses (McKernan, 1996).

This type of interview was especially suited to my research because I had to interview learners as well as teachers: "although all respondents are asked the same question, the interviewer may adapt the formulation, including the terminology, to fit the background and educational level of the respondents" (Huysamen, 1994:145). In this type of interview the order of questions can vary, depending on the situation. According to Huysamen (1994), this type of interview is versatile and can be used with all age groups, even pre-school children who are unable to read, and even with elderly people with poor eyesight.

This interview type is also suitable for sensitive and highly emotional issues (Huysamen, 1994). It allows the interviewer the liberty to formulate follow-up questions and to

paraphrase questions. The method is flexible and open. However, this does not imply that it is casual and should not be treated carefully (Cohen and Manion, 1994).

Before interviews are undertaken, it is very important to fulfil certain ethical obligations, e.g. explaining the purpose of the interview, assuring anonymity and confidentiality. Huysamen (1994) also advises on the manner of dress, suggesting that it is better to dress like the people one is going to interview (although partisan dress is not recommended, e.g. wearing the T-shirt of a certain political party). However, there are other factors which the interviewer can do nothing about, like one's sex or race. In sum, the researcher is advised to think about how he/she is going to present himself/herself (Denzin and Lincoln, 1994). During my visits to the sample schools, I fulfilled protocol by making the necessary arrangements and appointments to interview both the Geography educators and the learners on the matter of resources, their perception of resources, their availability and non-availability, use or non-use, etc. The purpose of the interview was also explained to the interviewees. They then felt comfortable to take part.

The interview was arranged to supplement and triangulate data collected by other means like observation and questionnaires. During the interview data is supplied, questions are followed up and answers clarified. To come face to face with a respondent, to hear the voice and see the facial expressions are a great advantage indeed and a valuable personal experience. A questionnaire can never bring all these factors out.

When all the necessary arrangements and appointments had been made, I interviewed the Grade 5 and 6 learners and the Geography educators at the selected schools. They were interviewed separately, that is, on different days according to appointments made. Owing partly to my inexperience, it was not easy for me to conduct group interviews with learners. As Seidman (1991) has noted, below a certain age, interviewing children may not work. Nevertheless, in this case, I think I managed to get what I wanted from the learners, and it was a useful exercise to compare their responses with what the educators had said.

At first I thought interviewing was going to be very simple and straightforward, but I discovered that for one to do it well, practice and experience are necessary ingredients. For example, having asked the first question, I had difficulty in knowing how to pose the second question to a group: whether respondents had to maintain the same sequence of answering or whether they could answer at random. There are certain unexpected difficulties that crop up during the interview, which if you are not prepared for or experienced to deal with can upset or hold up the interview process. Seidman (1991) offers good advice to inexperienced interviewers, including the caution to listen more and talk less, to follow up on questions, not to interrupt the interviewee, as well as guidelines on what kind of questions to ask.

I taped the interviews that I conducted. Originally I did not have a particularly effective recording instrument, and had to buy a new audio tape recorder of good quality. The advantage of taping interviews is that data can be recorded accurately and played back over and over again (Hopkins, 1993). After taping interviews, tapes have to be transcribed. Some researchers argue that transcribing tapes verbatim is not necessary. They advocate a reconstruction of the main account and the presentation of key ideas (Stake, 1995).

The researcher participants all agreed to the interviews being taped and a total of five interviews were undertaken. Transcripts of the tapes were analysed with the following in mind: "The researcher must come to the transcripts with an open attitude, seeking what emerges as important and of interest from the text"; "the interviewer must come to the transcript prepared to let the interview breathe and speak for itself" (Seidman, 1991:89).

The interviews I conducted involved only those participants directly involved in the activities of teaching and learning, namely, the Geography educators and learners. Other people, like parents, community and education authorities, although they are also stakeholders in education, were not interviewed due to the constraints of time.

3.5.4 Site Visits, Observation and Field Notes

Another method of collecting data which I used was to visit the 'site' to make direct observations. For the recording of non-verbal behaviour, observation is obviously superior to the survey, although it does have its weaknesses (Cohen and Manion, 1994). During site visits, human behaviour and physical environments are observed and recorded (Cohen and Manion, 1994; Keeves, 1988). Sometimes these visits are called fieldwork, because the researcher conducts investigation on the spot under natural circumstances (Huysamen, 1994).

Observation is more than just casual looking. Observation is focused and attentive. The purpose of observation is not to make value judgements, but to collect empirical and factual data (McKernan, 1996). In observation, it is important to keep a record of what is observed (Altrichter et al., 1993). The method of recording data observed which I used was the writing of field notes.

Some researchers, especially those using quantitative methods, use a recording sheet and codes. The qualitative methods I was using required descriptive notes only. Field notes require no technical tools beyond a pen or pencil (Altrichter et al., 1993).

Using this method one must be prepared to conduct focused observation, which involves knowing what to select for observation, why the observation is being made, etc. (Altrichter et al., 1993). It is better to record observations immediately than to reconstruct them at a later stage. Field notes can be general or 'issue oriented' (Hopkins, 1993), as in the case of this research, where the issue is 'teaching resources'.

Field notes, like any other tool of data gathering, have advantages as well as disadvantages. One advantage is that notes are simple to keep; a disadvantage is that conversations cannot be recorded by field notes (Hopkins, 1993; Walker, 1993). Observations may also need other data to corroborate them.

I visited sample schools initially to ask them both to allow me to do research in their school and to take part in the research. From the first day, I took my diary with me so that I could make entries and record things which I thought might be of interest to me and useful for the research. As Ely has said, "Keep writing. Keep listening and looking" (Ely et al., 1991:48). Of course, since the researcher cannot record everything, there must be a focus; only those things that are being studied closely need be recorded (Ely et al., 1991).

From the day of my initial visit I recorded things that I could observe as soon as I had entered through the school gate. When I was told to wait at the office (or a classroom serving as a principal's office), I would start to take notes as I looked around and watched. In line with the kind of research I was doing, my field notes were therefore in the form of narrative descriptions and not in the form of codes (Keeves, 1988).

Fortunately for me the schools that I visited to ask for their participation immediately agreed. After the appointments were finalised, my classroom observations started. These mainly involved observing lessons in progress and recording the activities during these lessons, particularly with respect to resources used.

During my first visit to a venue or classroom, I recorded what I saw inside in terms of facilities, class size, seating arrangements and the reactions of the learners when they saw me arriving in their classroom for the first time. My field notes also included what the educators and the learners did during the lesson, such as the lesson topic and what resource(s) were used for the lesson. When the lesson was over, the educator and I would find a place somewhere, e.g. under a tree (there are no offices or staffrooms). We would continue to have discussions on the resources used for that particular lesson and resources in general. This was done to elicit more data so that the situation could be understood more fully (Anderson, 1990). Our discussion would naturally drift from resources used in that specific lesson to teaching and learning resources in general. As we spoke, I made notes of the substance of our discussion. I found this method of data collection useful because of the nature of the events I was observing.

During the lessons I observed what was used, and how it was used. Researchers who use quantitative techniques for observation commonly use coding systems and rating scales in their observation, e.g. Flanders categories for interaction analysis (Keeves, 1988). I preferred to use the narrative description method (Keeves, 1988). According to Keeves, "this technique involves writing in narrative form everything observed that is relevant to the focus and purpose of the observation. Although some technical terms may be useful and desirable, for the most part, the terms used to describe the observed phenomena are the observer's natural words" (Keeves, 1988:473). Keeves went on to say that narrative descriptions are suitable for case studies of individuals or schools and that the researcher has to look for specific events. Narrative descriptions have an advantage over quantitative measuring instruments in that they describe situations in a rich and holistic manner. Narrative descriptions do not need complicated codes (Keeves, 1988), although they require more time during subsequent processing (Keeves, 1988).

3.5.5 **Discussion Meetings and Workshop**

Another source of data during field visits were meetings, which were held regularly to discuss lessons, resources used during lessons, and resources in general. These meetings produced much-needed and useful data. Notes that were taken during these meetings formed part of the field notes.

3.5.6 **Research Diary**

During the research process I kept a diary in which I recorded events. Entries were made in the diary and then later formally transcribed in the form of a report. Observations, self-reflections and memos are appropriate for diary entry (Altrichter et al., 1993).

3.6 THE ROLE OF THE CASE RESEARCHER: ACTIVE PARTICIPANT OBSERVER

The participant observer is the important tool or instrument of action research (Ball, cited in Keeves, 1988). Moreover, participant observation is not a method of collection but a role (Walker, 1993). What was my role during this research?

The researcher in qualitative research needs to be part of the group, to try to be an insider rather than an outsider and experience the situation first-hand (Huysamen, 1994). Becker identified participant observation "as a process in which the observer's presence in a social situation is maintained for the purpose of scientific investigation. The observer is in a face-to-face relationship with the observed, and, by participating with them in their natural life setting he gathers data" (cited by Ball, in Keeves, 1988:507).

There are basically two roles that the researcher can fulfil in action research: simple, passive observer or active, participant observer (Ely et al., 1991; Anderson, 1990). Cohen and Manion (1994) identify these roles as participant observation (where the observers are so actively/deeply involved in the activities they set out to observe that they become one with the group); and non-participant observation (where the observer stands aloof from the activities of the group and eschews group membership).

It is also possible for the researcher to assume dual roles for different circumstances and situations. There are various degrees to which we can participate, ranging from full participation to mute observer (Ely et al., 1991). Denzin (1994), quoting Gold and Junker, suggested a typology of participation observation ranging from complete observer, through observer as participant, participant as observer, to complete participant. But whatever nomenclature we choose to use, the participant observer is not a neutral person in social research. As Denzin said, "we cannot study the social world without being part of it" (Denzin, 1994:249), even if such participation involves only listening and taking notes.

During the course of this research my role was that of an active participant observer rather than a passive or limited observer. However, since the situation at the three schools was not the same, my role was not always the same. In two of the schools, opportunities were created for me to become an active participant. At these schools I interacted actively with educators and learners. During lessons I was invited to take part by making input. At one of the two schools I was even offered two lessons to conduct. I accepted this offer gladly for I wanted to experience for myself what it means to conduct a lesson in a crowded class of 70 learners. So, at these two schools I actually teamed up with the educators: they informed me as to what they were going to do next and asked for my input in terms of resources. I made inputs and suggestions and even contributed resources to some of the lessons.

To be an active participant observer requires trust between the active participant observer and the observed. If there is not trust, observation by the researcher can become a painful or even impossible experience (Ely et al., 1991). At the third school there seemed to be a lack of such trust: opportunities were not created for me to become an active participant, so I became a limited participant observer asking questions and taking down notes.

When I visited the sample schools for the first time, I explained to the teachers what my roles could be in the research. I did not have any personal preferences about roles. I was ready to be anything they were prepared to allow me to become. During my initial visit I also explained that I was not going to 'interfere' in their situation, e.g. by wanting to re-arrange things like timetables. They should not do things for me. They should carry on as usual. Ely aptly quotes the words of an observer: "I ask myself, is this behaviour typical, or are they playing a part for me?" (Ely et al., 1991:50).

Many of us worry that the events we are witnessing as participant-observers may not be characteristic of what 'really' goes on or may even be put on for our benefit just because we are there. I do not know for certain whether my injunctions to them to just carry on as usual were followed. I also explained that I was not coming to judge them (Ely et al., 1991), or to 'inspect' their work. I was coming to observe and learn. As I observed their

lessons, I also took down notes of what I was observing, sometimes even asked questions to get more information.

The participant observer should try "to become the other; to attempt to see life through the eyes of the person we are studying" (Ely et al., 1991:49). This is quite demanding because we are used to seeing and interpreting things from our own perspectives, our own point of view, not according to how the other person sees things. According to McKernan, "the researcher must come to see through the eyes, and from standing in the shoes of the subjects. The qualitative participant field study researcher allows the data to emerge on their own, without any preconceived theories or forced structures imposed on the study and looks for meaning in the events" (McKernan, 1991:7). The participant observer's role is "to come to know the actors' social world as they know it themselves" (Ball, quoted in Keeves, 1988:507).

3.7 LIMITATIONS ENCOUNTERED

Although I tried my utmost to do what I had set out to do in this research, it was inevitable that in the process of carrying out the research, certain things were not done or were not done well. There are many factors which could have contributed to this.

The main factors were lack of experience and in some instances, lack of time. In other situations, there were circumstances which were beyond my control which made it impossible for me to carry out certain activities, although I had the time, the knowledge and the experience. It is not possible to detail all such limitations here, but they include the following:

3.7.1 Interviews

3.7.1.1 Lack of Piloting

I did not find the time to pre-test or pilot or practice the interview on the specific subject of my research: resources. I was anxious to start as soon as possible. As soon as the appointments were made, I conducted the interviews. I had inherent fears that should schools not function for a long time, due to some unforeseen disruptions, my research project and targets would be jeopardized. I think if I had practiced interviewing during piloting, the quality of my interviewing would have been better. But while lack of piloting and practice could have affected the quality of my interviewing, I do not think it detracted from the substance of the data I obtained from the educators and learners.

3.7.1.2 Lack of Interview Experience

Another limitation to my interview skills was lack of experience. An experienced interviewer is confident, and tends to make fewer mistakes. As an inexperienced interviewer, obviously I committed errors. An added problem was that I was interviewing people who themselves were not experienced in being interviewed. This was quite evident when I was interviewing learners. As Seidman (1991) said, it is difficult, sometimes impossible, to interview children, especially of a younger age. Sometimes as a researcher I had to guide or lead them when it seemed they did not understand what was going on. And guiding the respondent (by means of statements) in an interview is not recommended. Some of the learners were fascinated to be interviewed. Others looked shy and tense. Besides the fact that I was interviewing children, it is known that group interviews are difficult to conduct (Oppenheim, 1994; Powney, 1987). It is not only the interviewer who experiences problems with a group, for sometimes members of the group may feel reserved about answering questions in the presence of other respondents. This I noticed particularly in another interview, when

learners were answering questions about teaching in the presence of their educators, who were there simply to observe the interview.

As a researcher, I also had some unfortunate mannerisms and habits, for instance repeatedly using the following expressions: 'O.K.', 'Mm.'. However, as an active participant observer maybe it was not wrong to have spoken so informally or hesitantly: I was after all attempting to participate in the same reality as my often shy respondents.

3.7.1.3 **Lack of Privacy (place free of interferences)**

Oppenheim (1994) advised that the place where the interview is taking place should be private, quiet, comfortable and not intimidating. The interviewee should never feel uncomfortable or go away angry or upset.

In poor schools, such as the ones I was working at, a place such as that described by Oppenheim is hard to find. Thus, in this research a lack of privacy was one of those disadvantages which fell within the scope of things that were beyond my control. It has been explained that at these schools there is no office or staffroom. Every available building is occupied. Therefore, several interviews took place outside, under trees, with noises and interruptions. Fortunately, the tape recorder I used was good in that, despite all the background noise, the interview conversation remained clear on the tape.

3.7.2 **Questionnaires**

3.7.2.1 **Lack of Piloting**

What was said in the previous section regarding the pre-testing or piloting of interviews (Keeves, 1988) can also be said of survey questionnaires.

3.7.2.2 Low or Poor Return Rate

The second drawback about my questionnaires was the low response rate or return rate of 39%, despite my attempts at follow-up. However, it is understandable that many factors could have played a part in this, including respondents' lack of knowledge and experience of research questionnaires.

Few of the educators in the rural areas of the Northern Province are used to coming into contact with researchers, questionnaires, etc. School research has in the past concentrated on high school curricula, with very little attention focussed on primary schools. For most of these educators it was a novel experience to be asked to complete a questionnaire and with such lack of experience, it is possible that when they received it they had no idea of how to complete it and what to do about it. Even forms from the offices of the Department of Education are not often returned fully or well completed. I think the same fate could have befallen the questionnaires; if one cannot make head or tail of what something is about, one avoids it.

To some respondents, the questionnaire may have appeared to be too long. Another possibility is that due to poor postal systems in the rural areas, schools may not have received the questionnaires, or they may have arrived after the deadline date, or since they were sent to these educators through the principals, the latter may not have passed them on because they were forgotten or simply through negligence. Some people are not keen to fill in a questionnaire 'simply to assist someone to obtain a degree'.

3.7.3 Observations

3.7.3.1 Limited Time and Limited Access to Classrooms for Observation

Although in general I had access to lesson observation, especially in two of the three schools, I would have collected more data if I had been given more access. It has been

pointed out that one educator refused to take part at one of the schools. In the case of those who agreed to take part in the research, accessibility was limited by factors such as examination writing, school holidays, protest meetings, and cancellations and postponements for personal reasons on the part of both the researcher and the educators. These factors limited my observations. I might have been able to observe more, and maybe would have collected more data that I did. In the following section attempts made to reduce the possible effects of such limitations are considered.

3.8 DATA VALIDATION

When data has been collected, processed and analysed, we have to ask ourselves to what extent the results from such data can be believed. We cannot simply accept findings or results at face value. There are some questions which have to be asked and answered. In other words, we need to find reliable means to verify the truthfulness or worthiness of the data.

According to Bless (1995), poor measurement can invalidate a research project unless it can be shown that the data reflects the research subject: "unfortunately, virtually no measurement technique in social science is perfect. It is therefore important that researchers always evaluate the measures that they use" (Bless, 1995:130).

Reliability refers to the consistency of the measurement (Bless, 1995). If an instrument produces the same scores every time it is used, it is consistent, and therefore reliable. If every time it is used it produces different scores, it is inconsistent and therefore unreliable or has low reliability (Bless, 1995). Therefore, "the reliability of measurement is the degree to which that instrument produces equivalent results for repeated trials" (Bless, 1995:130). One might ask oneself, for instance, is the way I measured this learner the same as I measured the other? If I have to measure the same work again, would I arrive at more or less the same score/comments?

Another criterion for the worthiness of research data is validity. "A measure is valid if it does what it is intended to do" (Zeller, cited in Keeves, 1988:322). In validity, the questions asked are: "what does this instrument measure? And what do the results mean?" (Bless, 1995:135). Did the question ask what was intended? Did the instrument measure what it was intended to measure?

According to Oppenheim (1994), concurrent validity asks: is the respondent telling the truth? Does the question, item or score measure what it is supposed to measure?

In qualitative research such as this study reliability is not so much the issue as is validity. In the case study approach using the three schools internal validity was sought through triangulation. The following triangulation techniques were used in this research to obtain validity.

3.8.1 **Triangulation**

Triangulation refers to the use of two or more methods in the data collection (the use of the multi-data method or the multi-method approach). In some research, a single method of research may be used, e.g. in medicine, chemistry and physics (Cohen and Manion, 1994). However, in the educational research that I conducted, it was necessary to use more than one method, more than one instrument and more than one source of data.

Denzin has defined triangulation as follows: "triangulation is the application and combination of several research methodologies in the study of the same phenomenon" (in Keeves, 1988:511). The diverse method or approaches used should be related to what is studied. The main reason for using multi-methods is to eliminate or reduce the bias and weaknesses of a single method (Denzin in Keeves, 1988).

In the context of educational research, Altrichter et al. (1993) describe triangulation as consisting "of a combination of observation and interview, whereby data on a particular situation are collected from three perspectives ('corners'):

- the teacher's perspective (by an interview);
- the perspective of individual pupils (by interview);
- the perspective of a neutral third party (by observation). (1993:115)

According to Stake (1995), when we are working with data, we have to ask if we are getting it right, whether we are generating an accurate description or interpretation. According to him, we cannot rely on common sense or intuition and must have recourse to discipline and protocol. In qualitative research there is a belief in multiple perspectives or views, partly because "there is no way to establish beyond contention, the best view" (Stake, 1995:108).

Denzin (1970) and Stake (1995) have identified four types of triangulation, namely:

Data Source Triangulation

This involves data collected over a long period of time, from several locations, and from more than one person. As Stake puts it "we look to see if the phenomenon or case remains the same at other times, in other spaces, or as persons interact differently" (1995:112). This method was not suitable for my study, and was not used.

Investigator Triangulation

This involves more than one observer for the same object. Other researchers take a look at the same phenomenon or scene. In my study it was not possible to make use of another researcher in the field.

Theory Triangulation

More than one approach is employed. Here, co-observers, panelists or reviewers from alternative theoretical viewpoints are asked to view the same phenomenon.

Methodological Triangulation

More than one method is employed to obtain the data. This method was suitable for my research and was therefore used.

3.9 SUMMARY

In this chapter, methods and instruments used for the research were identified and described. Qualitative research of this nature favours the use of various methods and tools.

The paradigm selected for the study is the humanistic-naturalistic paradigm.

The small-scale survey, the case study and the action research employed within this paradigm are seen as complementary approaches designed to uncover the uniqueness and richness of a particular situation in order to understand it and in so doing to 'improve it'.

The multi-faceted use of a variety of research instruments provided the means to access the data and created validity, insofar as it was possible to do so, through triangulation.

Above all, the methodology used in this research provided me, as a novice researcher, with a wealth of thought-provoking possibilities, and helped me to develop skills that I do not believe a more traditional approach would have done.

CHAPTER 4

QUESTIONNAIRE: DATA PRESENTATION, ANALYSIS AND RESULTS

4.1 INTRODUCTION

The development of Geography in OBE emphasizes learners' participation in the construction of their own knowledge. Resources, as aids to learning, are therefore more important than ever before. In highlighting the situation in the schools selected for this study with regard to resources and basic amenities and facilities, an attempt is made not only to describe the situation as it is but also to consider how teachers perceive and use available resources.

This chapter looks at the responses of Geography teachers to the questionnaire (Appendix 1) used in the initial survey of the primary schools in the Thohoyandou inspection area. As indicated in Chapter 3, the purpose of this survey was to provide a database pertaining to the resources in the study area for Geography in the Intermediate Phase. The data from this survey are explored further in the specific school case studies that are the focus of Chapter 5. The results of this Chapter serve to provide empirical evidence of a situation about which there is speculation but few hard facts. While it is generally accepted that schools in the former independent states and homelands are drastically under-resourced in comparison to schools in the metropolitan areas or in relation to former Model C schools, the precise nature of the differences in terms of particular learning areas needs to be considered. If meaningful changes in resource provision are to be effected, it is argued that we need an assessment that includes not only an accurate quantitative inventory, but also a qualitative understanding of the various factors that impact on the situation. The questionnaire has, therefore, been structured as an attempt to capture data that provides a quantitative picture of particular dimensions pertaining to the question being researched, while the case studies discussed in the following Chapter attempt to create a better understanding of the situation through illuminating the

perceptions of teachers and learners about the nature and point of resources in the teaching and learning of Geography.

The questionnaire included three areas of enquiry relating to:

- the composition of the respondents with regard to their professional background;
- the precise nature of the facilities and teaching resources that are available and the extent to which these are used;
- learners as resource users and as participants in the process of resource development.

The questionnaires, targeting the Grade 5 and 6 teachers, was sent to the 67 senior primary schools in the study area and the postal survey provided a 39% return rate. This return rate was expected and deemed satisfactory, given that 86% of the schools are rural schools where there is a poor postal service (Chapter 3).

4.2 THE COMPOSITION AND CHARACTERISTICS OF THE QUESTIONNAIRE RESPONDENTS

The questionnaire included an analysis of the professional background of the teachers in the survey area as a means to provide data relating to teacher qualifications and experience in the field of Geography. This aspect was considered necessary as problems in our current education system are all too often (and perhaps too simplistically) equated with teachers who are not qualified to teach in particular subject areas. Lack of qualifications has featured prominently in recent education audits, particularly in relation to teachers in rural schools. This section of the questionnaire provided insights pertaining to the professional background of the respondents teaching Grades 5 and 6, one third of whom teach in both of these grades.

The analysis of the professional qualifications of the respondents is revealed in Table 4.1 below.

TABLE 4.1: GEOGRAPHY TEACHERS' PROFESSIONAL QUALIFICATIONS

Diplomas/Certificates	Number of Teachers	Number in %
PTC	11	42,3
JPTD	0	0
SPTD	9	34,6
JSTC	0	0
STD	4	15,3
UED	1	3,9
HED	1	3,9
Others	0	0

Before analysing the significance of this data, it is necessary to explain the meaning of the professional qualifications of teachers indicated.

a) PTC = Primary Teachers Certificate:

This certificate was issued by the former Department of Bantu Education. It was offered to teachers who qualified to teach primary classes (both junior and senior). Students or prospective teachers trained for this certificate after passing Std. 8.

b) JPTD = Junior Primary Teachers Diploma:

SPTD = Senior Primary Teachers Diploma:

These diplomas replaced the certificates explained above. They were issued to teachers who were qualified by the former Department of Education and Training, that is, those who were qualified to teach junior primary and senior primary. Students or prospective teachers trained for these diplomas after passing Std. 10.

c) JSTC = Junior Secondary Teachers Certificate:

This certificate was issued by the former Department of Bantu Education. It was meant for teachers who teach Junior Secondary schools. Training was offered to students who passed Std. 10.

d) STD = Secondary Teachers Diploma:

This diploma was first offered at Universities and later offered at some Colleges of Education. It was also issued by the former Department of Education and Training for those colleges which followed the Department's syllabi. Trainees were required to have passed Std. 10. For those colleges which are affiliated to universities, diplomas were issued/accredited by those universities. They also provided syllabuses.

e) UED = University Education Diploma:

HED = Higher Education Diploma:

These diplomas are issued by universities to successful candidates who enroll for these diplomas after a degree.

The teachers surveyed were all in possession of teaching certificates or diplomas. The main difference is in the level of their qualifications. We can justifiably call some of them 'underqualified' since many of them received the old Bantu Education Teachers' certificates, which had certain deficiencies. However, they are not 'unqualified'.

The majority of the respondents (42,3%) consists of teachers who did the old PTC, which used to be done after Std. 8 in the old Department of Bantu Education. However, it must be stated that most of these teachers have improved their qualifications. Many have studied by correspondence to pass Std. 10 and then continued their studies at universities. Others have added a degree, then an HED, to their old PTC qualification.

The second highest number (34,6%) are those who did SPTD. What was said above about improving qualifications applies to this group as well.

The smallest percentage (7,8%) did UED or HED, which means that academically this group has a university degree.

Secondly, analysis of the questionnaire results revealed that 61,5% of the respondents indicated that they had Geography as one of their method subjects. This means that 38.5% of the respondents who are teaching this subject at the schools surveyed did not do Geography method in their teacher training. However, the findings show that even if only 61,5% of the respondents had Geography as one of their method subjects, 80,8% indicated that they had it as one of their major subjects at college or university.

It can be argued whether 'paper qualifications' can be regarded as a guarantee of competence in the classroom. It would also be interesting to know what these teachers learned during their training at colleges of education about the use of resources, and how much of what they learned is being applied in their teaching. However, these matters are beyond the scope of this study.

Table 4.2 below shows the number of years of teaching experience:

TABLE 4.2: GEOGRAPHY EDUCATORS' TEACHING EXPERIENCE

N = 26

Number of Years	Number of Teachers in %
Probatory	0
1	3,8
2	19,2
3	11,5
4	11,5
More than 4	53,8

The table above reveals that most respondents have more than one year of teaching experience. It is significant that 53,8% have more than four years of teaching experience, with only 3,8% of the respondents having one or less years of teaching experience. The findings of the questionnaires therefore reflect the views of experienced teachers. It is accepted that experience is not necessarily equated with effective teaching; however, these results are representative of teachers in similar situations and circumstances. The survey revealed a notable absence of in-service training: only 20% of the respondents

indicated that they have ever attended a course where the use, production and development of resource material were discussed.

The survey revealed that the largest class had 97 learners. The smallest class had 29 learners, with an average class size of 64. The size of the class in the primary school is very important for effective learning and teaching, particularly when one considers available facilities at the schools. The survey reflects the situation at most schools in the Northern Province, where smaller classes are the exception rather than the rule. The situation of overlarge classes is discussed in detail in Chapter 5. The problem is compounded by a lack of classrooms. Instead of a large group of learners split into smaller groups, each with its own teacher and classroom, what happens in practice is that class groups are combined to share what few facilities there are.

These results indicate that teachers do not on the whole lack qualifications in relation to the statutory requirements necessary at this particular level. When considered in relation to other aspects of the questionnaire, and in terms of the results of the following chapter, the situation in our schools is seen to be more complex than simply equating education problems with the qualifications or lack thereof of teachers.

4.3 BASIC FACILITIES AND AMENITIES AT THE SCHOOLS SURVEYED

An analysis of teaching and learning resources has little value without an understanding of the infrastructure within which teaching and learning take place. While the existing amenities of schools have been researched in recent audits at the provincial level, such statistics become more meaningful when approached through particular case studies, such as those presented in this research. It could be argued that there is little point in seeking to resource schools that lack even the most basic of amenities. The data of this section of the questionnaire have emphasized those facilities that need to be seen as the most basic to the functioning of education and as the most obvious for opportunities for teaching and learning. Table 4.3 is therefore important because teachers may be well qualified

academically and professionally, but if they are not provided with tools to work with, it reduces the effectiveness of that work. Equally, if learners are learning in deplorable conditions that are not conducive to learning, their learning is seriously hampered.

Table 4.3 below shows schools surveyed and the category of facilities and amenities they have, that is, how many schools (in %) have a certain category of facilities and amenities.

TABLE 4.3: SHOWING BASIC FACILITIES AND AMENITIES AT THE SCHOOLS SURVEYED
N = 26

Facility/Amenity	**Number of schools where these are available**	**Number of schools in %**
Electricity	5	21,7
Alternative power, e.g. generator	3	12,0
Good chalkboard in each classroom	8	33,3
Sufficient chalk in the school	20	90,9
Flannelboards	1	4,5
Duplicating machines, e.g. photocopier	9	37,5
School gardens	17	70,8
Playing fields	18	81,8
Toilets	16	69,6
Water	15	68,2

Table 4.3 highlights the problems associated with facilities and amenities. The greatest need according to the table is for electricity, with only 21,7% of schools being adequately supplied with power. A yet more fundamental need, not mentioned in this context but ascertained elsewhere, is for buildings and classroom space: only 24% of schools canvassed said they had sufficient classrooms. A third basic disability is reflected in the fact that only 37,5% have facilities to print or duplicate materials.

The facilities and amenities listed above are indeed basic needs. For example, if there is no electricity there are many things that cannot function or happen at that school, e.g.

overhead projectors, photocopiers, faxes, computers and the Internet, TV sets and video recorders.

The lack of duplicating machines like photocopiers means that even if the teachers were willing to produce other learning materials, they would find it very difficult. In the classroom, studying handouts is far better than copying notes off the board. There is a considerable difference in quality between work that relies on chalkboard copying and that which relies on handouts. This is particularly important when one considers that not all learners are issued with textbooks and that many of the textbooks issued are out of date. It is clear that not everything can easily be written or drawn accurately on the chalkboard, e.g. detailed maps and graphs. A teacher who has only the chalkboard at her/his disposal simply gets tired of writing and drawing things on the board.

The 37,5% of schools who said they had duplicating machines are more likely to be referring to the old manual machines than to modern photocopiers. Teachers type on old stencils using manual typewriters and do not use computers. Facilities that are outdated and that constantly give problems are seen by teachers sometimes to be more trouble than they are worth. Equally, where the facilities have to be shared among a large number, time becomes a crucial discouraging factor.

Table 4.3 shows that most schools have school gardens, playing fields, water and toilets. These figures, however, given a distorted picture of the situation. A personal visit to these schools will reveal that the quality of these amenities leaves much to be desired. Playing fields are merely a dusty, open space with perhaps a set of poles for soccer and netball only. Sports fields are simply not sufficient and those that are there are not well developed. This was also supported by the interview held with teacher B of case study school Y, reported in Chapter 5. Toilets are usually pit latrines and may be inadequate or derelict. It is common in the Northern Province to find schools in the remote rural areas making use of nearby bushes as toilets. This obviously affects the dignity of the teachers and their learners and is not environmentally friendly.

4.4 MEDIA AND RESOURCES AVAILABLE IN THE SCHOOLS SURVEYED

The selection of items included in this part of the survey is based on a survey of former Model C schools in the former Cape Province. The items relate to those resources which appeared on the approved Departmental catalogue and were obtainable from the then Cape Department of Education on the basis of an annual grant, or which could be purchased from the Department with school funds in the period from 1984 to 1988 (van Harmelen, 1992). These items give an indication of the sorts of resources that are regarded as central aids to teaching and learning in modern educational institutions. It may be argued that certain of the resources included are 'luxuries' that are beyond our capacity to acquire given our financial backlog in education. But it must also be emphasized that if we are to be internationally competitive (as advocated by the new educational dispensation), and if participatory learning linked to the OBE model is to be effective in practice, then it would seem that in fact we cannot regard resources as an unnecessary luxury. When compared to aspects covered in the foregoing section, resources such as these serve to highlight the need for adequate facilities and amenities in schools, which include secure storage space and secure classrooms, not to mention a consistent supply of electricity.

The picture revealed in the previous set of data is highlighted by the situation revealed in Table 4.4.1, particularly when these are compared to that of a survey conducted in former Model C schools in the Cape Province (Table 4.4.2).

TABLE 4.4.1: SHOWING MEDIA AVAILABLE AT THE SCHOOLS SURVEYED AND THE FREQUENCY OF USE EXPRESSED IN %

N = 26

Media	Number of Schools Where available	Frequency of use in % (that is, what % of schools use: often, seldom, never) Often	Seldom	Never
Blank video cassettes	0.00	0.00	0.00	100
Prepared video cassettes	0.00	0.00	0.00	100
TV set	2	0.00	7,1	92,9
VCR	1	0.00	7,1	92,9
Video camera	0.00	0.00	0.00	100
Blank tapes	1	0.00	0.00	100
Tape recorders	2	0.00	0.00	100
Photographic film	0.00	0.00	0.00	100
35mm camera	0.00	0.00	0.00	100
Prepared photographic slides	1	0.00	7,1	92,9
Sound tape recorder	1	0.00	0.00	100
Overhead projector	1	0.00	7,1	92,9
Media or resource centre	0.00	0.00	7,1	92,9
Computer	1	0.00	7,1	92,2
Aerial photographs	1	0.00	7,1	92,9
Maps	20	56,5	26,1	17,4
Pictures/photographs	9	20	45	35
Newspapers/magazines	9	44,4	33,3	22,2
Textbooks	20	90,5	4,8	4,8
Field trips	26	16,7	55,6	27,8
Atlases	15	40,9	31,8	27,3

One can see from Table 4.4.1 that the absence of resources is extensive. Media that are commonly available in most schools are:

Maps, used by 56,5% of the schools surveyed (20 schools)

Textbooks, used by 90% (19 schools)

Atlases, used by 40,9% (15 schools).

These findings correspond well with observations made at the case study schools. The picture is further compounded when one looks at the way these few available resources are used. As for frequency of use, one has only to look at the percentages in the last column, 'never', to see how many schools never use the media. The table above also

reveals the frequent use of traditional learning resources in the form of maps, textbooks, globes and chalkboards. It appears that teachers at the schools surveyed have very few alternatives. This could be ascribed to various factors, some of which are mentioned in Table 4.9.

TABLE 4.4.2: SURVEY CONDUCTED IN FORMER MODEL C IN THE OLD CAPE DEPARTMENT OF EDUCATION (van Harmelen, 1992)

A-V EQUIPMENT			Total	City schools	Other schools	Boys schools	Girls schools	Co-ed schools	Eng. medium	Afr. medium	Dual medium	Day schools	Boarding schools
Rank	Item	N =	103	50	53	11	10	82	38	37	28	42	61
1	OHP		98	98	98	100	100	98	100	95	100	95	100
2	Prepared transparencies		92	90	94	91	80	94	89	100	86	95	90
3	Tape recorders		91	92	91	100	80	92	92	92	89	91	92
4	Television set		75	80	70	91	90	71	95	58	71	79	72
5	Sound-tape projector		74	74	74	64	70	76	79	66	75	74	75
5	Media centre		74	74	74	73	70	74	76	66	79	71	75
7	Video recorder		71	74	68	81	80	68	89	51	71	71	69
8	Blank tape cassettes		66	70	62	91	60	63	76	59	61	67	66
9	Blank video cassettes		55	64	47	73	60	54	76	39	50	64	46
9	Prepared video cassettes		55	66	45	73	50	54	74	46	43	60	54
11	Photographic film		54	54	55	64	50	54	63	49	50	57	53
12	Prepared photo slides		53	62	53	64	50	49	63	49	46	60	49
13	Video camera		46	48	43	64	30	45	53	35	50	41	49
14	35mm camera		44	54	24	46	50	43	55	38	36	55	33
15	Technical assistant in media centre		21	34	9	36	30	18	11	30	25	31	18
Library facilities													
a)	More than adequate		6	6	6	0	20	5	11	3	3	10	3
b)	Adequate		52	66	38	64	40	51	59	54	39	62	44
c)	Less than adequate		42	28	56	36	40	44	30	43	58	28	53

(A-V equipment listed according to ranking)

4.5 RESOURCES IN THE ENVIRONMENT

Geography is, as noted in Chapter 2, a subject that is able to use a variety of resources, both physical and human, in the local environment. That certain teachers are aware of the value of the local environment for teaching and learning was revealed in both the survey and in the visits to schools. The study also revealed a certain level of involvement of learners in the making and collection of learning resource materials.

When the Geography teachers surveyed were asked to indicate what learners were doing to contribute materials for their learning, 86,4% of the respondents indicated that learners at their schools did collect resource materials sometimes. As was revealed during interviews with teachers and learners at case study schools (Chapter 5), learners can contribute resources in many ways. The provision of resources is therefore not the sole responsibility of teachers. Learners have a role to play and they are capable of doing this.

Although it is preferred that the local environment be used, there is of course a place for school visits to areas outside of the local environment. The table below shows the results of the questionnaire relating to fieldwork and school visits.

TABLE 4.5: SHOWING FREQUENCY OF SCHOOL VISITS AND FIELD TRIPS TO CERTAIN SPECIFIC PLACES

Places visited	Often	Seldom	Never
Museums	9,5	38,1	52,4
Place of local interest	14,3	71,4	14,3
Field trips in local areas	8,7	65,2	26,1
Field trips to faraway places	9,5	57,1	33,3

Of interest in these results is the fact that schools do make an attempt to undertake school visits - often, as will be seen in Chapter 5, at considerable cost to the parents. The fact that museums appear to have the least appeal may be ascribed to the fact that the Northern Province is less well situated in respect of access to key museums than other regions. Teachers' references to 'field trips' should be interpreted as denoting 'visits',

rather than fieldwork in the geographical sense. This was corroborated by the interviews conducted with teachers and learners in case study schools (discussed in greater detail in Chapter 5).

Fieldwork is very important. Through school visits and fieldwork, resources can usefully be supplemented. Especially in Geography and in the Human and Social Science learning area more generally there are many things that exist in the real world and which cannot or should not be restricted to the classroom. Therefore, the importance and value of fieldwork can never be overemphasized. In fact, this way of learning is more relevant than ever in outcomes-based education. There are many things in the classroom itself, outside the classroom, in the schoolyard and in the neighbourhood that can be used as vehicles of learning. More extensive use of fieldwork, not only for Geography, but also for many other learning areas, can go a long way towards solving some of the problems relating to a lack of resources.

During the interviews with educators at case study schools, I came to realize that the way the school timetable is structured can sometimes be restrictive, e.g. a 30 minute period may render fieldwork impossible during school time unless the fieldwork is taking place near the classroom. The use of local resources is obviously more complex than the mere question of the teacher's awareness of their potential value.

Table 4.6, which ranks destinations, should be regarded as an extension of the previous one (Table 4.5). These data reveal that most of the places visited by the schools are in their own province, the Northern Province. There are also some schools which have organized visits to distant places like Cape Town, Port Elizabeth, Durban, Zambia, and Zimbabwe. One can think of these distant trips as tours and not as actual fieldwork. Distant tours are usually very expensive, considering that transport, accommodation, food, entrance fees and pocket money have to be paid.

However, visits to distant places once in a while should not be discouraged. They widen the learners' horizons (their understanding and knowledge of people and places in

general). Schools should, however, prioritize their programmes and activities in terms of their needs. For example, the expenses associated with long-distance tours have been cited as costing a school as much as R20,000.00. A legitimate question that then arises is, if parents can raise that much money for a school tour, what stops them from raising money for a computer, a fax machine or a photocopier? Therefore, with good vision and better planning, schools can supplement their resources little by little each year.

TABLE 4.6: RANKING DESTINATIONS OF SCHOOL VISITS AND FIELD TRIPS

Rank	Places/Destinations/Provinces	Frequency	Specific Places
1	Northern Province	28	Daman Tea Estate, Tshikondeni Mine, Nwanedi-Lupepe Dam, Messina/Beit Bridge, Shayandima Industrial Area, Kruger National Park, Louis Trichardt/Schoemansdal Environmental Education Centre, Tshatshingo Potholes, local dairy farm, nearby resort, Thathe Vondo Dam
2	Mpumalanga and Kwazulu-Natal	6	Manyeleti Potholes, Durban
3	Gauteng and Northwest	5	Pretoria, Johannesburg, Magaliesberg, Sun City
4	Western Cape	3	Cape Town
5	Eastern Cape	1	Port Elizabeth

This table reveals that the Northern Province is rich in natural resources. There are many places that can be visited for learning purposes. Mpumalanga, which is a neighbouring province to the Northern Province, also has a diversity of places that teachers and learners can visit. From the table it is clear that some schools do visit places in these provinces.

The questionnaire furthermore attempted to identify whether teachers understand the role of learners as possible suppliers of resources and as participants in the use of resources, since OBE emphasizes this dimension of learning and teaching. The survey also attempted to establish the extent to which teachers were able to identify resources for teaching and learning that go beyond the traditional perception of resources as media.

This section of the discussion first examines the results obtained from the respondents pertaining to the learners' involvement, and then examines the broader perception of resources and their utilization in and for Geography.

In answer to the question relating to pupil involvement, either as suppliers of resources or as users of resources, the results revealed a narrow perception of the role of learners. Other than seeing learners as being able to supply collections of items such as newspaper clippings, pictures and specimens gathered in the local environment, teachers had little understanding of how to capitalise on learners as either members of a community or as potential resource developers. Thus, there was no indication of how learners could be utilized to construct and produce resources such as models, apparatus or display materials. While the majority of respondents indicated that they do use their pupils to supplement teaching and learning resources, this area could be developed considerably.

Chapter 2 revealed the role and importance of the local environment to the teaching and learning of Geography. In a situation where material resources such as those considered in earlier sections are severely lacking, teachers need to explore the possibilities that exist in the learners' immediate environment. Much of the school's resource base is contained in places and people in the local environment. Thus teaching and learning are enriched by moving beyond the confines of the classroom, and where teachers are able to identify the local environment as an extension to the classroom, learners' experiences and their ability to construct knowledge is enhanced. The section of the questionnaire exploring teachers' perceptions of the local environment as a resource base revealed the following:

- the teachers surveyed understand that the environment has many resources that can be utilized for learning and teaching
- some teachers do make use of these resources in the environment for teaching and learning
- other teachers do involve their learners in finding resources in the environment.

In the survey, the following local resources were identified and ranked:

TABLE 4.7: RANKING RESOURCES WHICH EXIST IN THE LOCAL AREAS OF SCHOOLS SURVEYED

Rank	Frequency	Resources
1	19	Rivers, waterfalls, dams, boreholes, lakes
2	12	Mountains/escarpment/hills
3	11	Local hospitals, factories, resorts, bakeries, dairies, robots, electricity stations, crocodile ranch
4	10	Tea/coffee/tree plantations/estates/forestry
5	3	Roads
6	2	Soil, fish

When teachers and learners visit places in the Northern Province, these are the kinds of things they can see and learn about. One can see from the table that most of these are typical of resources to be found in rural or semi-rural areas. It was encouraging that teachers did not respond by saying that there was nothing worth studying in the local area.

Even the teachers interviewed in case studies indicated that there was always something that one could study in the local environment, although one teacher (educator A at school X) confessed that while there were things locally that learners could study, they had not been studied so far because she had never thought about it.

4.6 REASONS FOR USING RESOURCES AND THE WAY THEY ARE UTILIZED AT SCHOOLS

The teachers supplied the following reasons for using resources in the schools:

TABLE 4.8: RANKING REASONS FOR USING RESOURCE MATERIALS AT SCHOOL

Rank	Frequency	Reasons
1	14	Better understanding of what is learned
2	12	Source of knowledge, information and skills
3	4	Motivation/interest in the subject/learning is fun and lively
4	3	Saves time during teaching/learning

Table 4.8 above shows the reasons advanced by the respondents when they were asked to give reasons for using various resources in their schools. The responses to this question indicate that teachers are well aware of WHY to use resources, and suggest that possibly problems exist more with regard to HOW to use resources. This dimension was highlighted in both the responses to the questionnaire and in the interviews with the teachers at the case study schools (Chapter 5). For example, one of the teachers interviewed simply indicated that textbooks were used for lesson preparation and for the setting of homework. The evidence available indicates that even those few resources that are available and used on a regular basis are used within/for traditional teaching and learning that focuses on the accumulation and recall of facts, rather than as resources for problem solving and decision making.

4.7 DIFFICULTIES EXPERIENCED WITH RESOURCES

Teachers indicated several difficulties they experienced, especially with finding and using resources.

TABLE 4.9: RANKING PROBLEMS/DIFFICULTIES/CHALLENGES IN FINDING AND USING RESOURCE MATERIALS

Rank	Frequency	Problems/difficulties/challenges
1	17	Lack of money/funding/finance/expenses/poverty
2	7	Lack of supply from the Department of Education
3	4	Lack of electricity, which is needed in order to operate some of the equipment
4	3	Lack of accommodation/classrooms
5	2	Lack of expertise/knowledge/skills or ability to use
6	1	Lack of co-operation from colleagues, e.g. principal. Lack of nearby resource centre. Problem with thieves/burglary. Lack of parental involvement.

The table above ranks problems or difficulties experienced by teachers and learners in the schools with regard to resources. As was to be expected, lack of money topped the list, followed by failure on the part of the Department of Education to supply schools. The problem of finance is common and critical. During the interviews with teachers in case study schools (Chapter 5) this problem was mentioned many times. The people in the province are generally poor. The Department of Education does not have enough money and the greatest percentage of the budget in education is used for salaries.

This table confirms the shortage of adequate amenities and facilities. The table also points to another central problem faced by many schools in South Africa, that of vandalism and theft. This security problem, when linked to the problems of lack of storage and security, further complicates the issue of resources.

4.8 SUGGESTED SOLUTIONS TO PROBLEMS EXPERIENCED AT THE SURVEYED SCHOOLS

The questionnaire asked the respondents to suggest solutions to problems they experienced in their school with regard to resources. Respondents made various suggestions, especially regarding availability and use.

TABLE 4.10: RANKING POSSIBLE SOLUTIONS TO PROBLEMS MENTIONED IN TABLE 4.9

Rank	Frequency	Possible solutions
1	17	Department of Education need to supply.
2	6	Schools should raise funds.
3	3	Regular refresher courses should be conducted. Any community structure should assist.
4	2	Parents should contribute.
5	1	Educators themselves should try and find these resource materials. A local resource centre and Geography committee should be established.

Following on Table 4.9's ranking of problems, Table 4.10 above ranks possible solutions suggested by the respondents. The first solution calls upon the Department of Education to supply the needs.

The responses were much as expected; however, the idea of regional resource centres was interesting, particularly in view of the fact that this particular strategy has been successfully developed in countries such as Namibia and in certain parts of the Republic. Aspects such as refresher courses and the formation of Geography committees were not elaborated upon, but are worthy of further exploration.

4.9 TRAINING FOR THE DEVELOPMENT AND USE OF RESOURCES

Teachers were asked in the survey to identify the sort of in-service training they felt would be useful for their professional development in the use of resources.

TABLE 4.11: RANKING SUGGESTED TRAINING FOR THE PRODUCTION, USE AND DEVELOPMENT OF LEARNING RESOURCE MATERIALS

Rank	Frequency	Suggested training
1	14	In-service training or refresher courses on the production, use and development of resource materials
2	3	Training in computer literacy. Training in organization of education tours
3	1	Training in how to establish a media/resource centre

Table 4.11 above ranks suggestions made by respondents on the type of training they think would be of benefit to them in developing their capacity in and for resource utilization. The views expressed highlight the need for a changed approach to in-service education, as well as the general shortage of such programmes for teachers. Generally, unless teachers embark on lengthy upgrading courses, there is little else available for them in the line of professional development. The problem is that the majority of these courses focus on theoretical aspects only, with little cognizance given to notions of praxis. In the questionnaire, 20% of the respondents said that they had attended a training or in-service course/meeting on the development and use of resource materials. This, however, represents a small number in reality.

The respondents attended only six courses or meetings. Four of these were organised by the officials of the Department of Education, one was arranged by a teacher organization, and one was organised by an in-service training centre.

81,8% of the respondents said that they had the ability to use much of the learning equipment and resource materials listed on the questionnaire (Appendix 1).

18,2% indicated that at present they did not possess the knowledge and skills, but felt that after some training they would be able to handle equipment and resource materials with confidence.

I, however, would argue that at issue here is not merely the ability to manipulate resources, but the ability to do so in innovative and creative ways.

The survey results have provided data that illuminate the situation in schools that may be regarded as typical examples of educational institutions in the rural areas of South Africa, more particularly, in the former homeland areas. While the results in terms of providing an inventory of resources are not unexpected, they do nonetheless provide empirical evidence pertaining to a particular spectrum of schools and in so doing emphasize in a real sense the backlog in education that exists. Data such as these of necessity raise questions about the possibilities of success of a system of education such as is proposed by OBE. In a situation where learning areas have incorporated more than one of the traditional subject areas, these results are a portent of the problems and issues that will need to be addressed in one of the most basic areas of teaching and learning, that of providing teachers with the necessary tools to do the job. Equally, these results raise questions about the relevance of education courses that are provided for teachers in both pre-set and in-set courses.

In spite of the dismal situation that is revealed by the survey, the results do reveal a number of positive aspects that can be capitalised upon, one of which is the fact that teachers have the will to improve their qualifications and that it is up to those who are concerned with teacher education to identify the sorts of courses that will provide teachers with the skills and capacity that they will need to function effectively in the existing situation, and to enable them to act as agents of change. The following chapter reveals the extent to which teachers are committed, in spite of their less than ideal working environment.

This survey has furthermore provided insights into possibilities that exist and the sorts of remedial action that are possible in a situation where there is little realistic chance of more funds being made available by the government. Thus, the results reveal the need to help teachers to capitalise on what there is in the local environment in terms of resources, to make the most use of their learners and the community.

4.10 SUMMARY

Small empirical surveys such as this focus on the fundamental issues that have to be addressed in order for educational change to occur. In a situation such as the South African one, where the objective is transformation, educational change will have to be approached systematically, rather than piecemeal. This survey has not only served to corroborate what is 'known' about schools in disadvantaged areas in terms of the problems and issues relating to basic facilities and resources, but has I believe focused on the paradox that is even more of an issue, that is the neglect not simply of physical resources, but of human potential. Chapter 5 highlights this dimension further.

CHAPTER 5

CASE STUDY ANALYSIS OF SELECTED SCHOOLS

5.1 INTRODUCTION

This chapter focuses on the three schools selected as embedded case studies. The three schools were selected as convenience samples (Chapter 3), being easily accessible to my place of residence. All three schools are within a radius of about 10km from one another. The three schools, identified as X, Y and Z, were visited several times. Of the total visits, eleven were made specifically to observe lessons conducted by the Geography teachers. The schools were also visited at other times to make observations, to conduct lessons and interviews, and on one occasion to hold a workshop with teachers (this was at school X).

The rationale for the case study approach, as indicated in Chapter 3, was, in the first instance, to provide as accurate a picture as possible of the teaching and learning environments of the schools in the study area. The results of the survey (Chapter 4) have highlighted the fact that the issue of resources goes beyond simply supplying the schools with the necessary media and materials. The detailed analysis of the three schools therefore attempts to provide a broader understanding of the issues and problems revealed by the survey. Without such an understanding such as this, the search for solutions is unlikely to be effective.

Through providing:

- a profile of the case study schools identified as X, Y and Z;
- an analysis of the classroom teaching undertaken by the researcher;
- an analysis of the workshop conducted at the school by the researcher; and
- an analysis of the interviews with teachers and learners,

this chapter seeks to illuminate the results of the survey and to explore issues emerging from the questionnaire results.

Whereas Chapter 4 was primarily focused on a quantitative analysis of the situation relating to resources in the various schools, this chapter looks at the situation in the case study schools qualitatively. The quantitative analysis done in the previous chapter was unable to reflect the human dimension sufficiently. The schools, teachers and learners were regarded as mere statistics. In this chapter an attempt is made to share the experiences and even the frustrations of the teachers and learners.

As Chapter 2 revealed, resources for Geography include both that which can be accessed from the local environment and the more traditional media and materials. As was also argued earlier, resources are closely linked to teachers' perceptions, not only of what constitutes resources, but of how these resources are used. What is, however, taken as a given in the literature is a basic infrastructure that constitutes the notion of a school. This chapter proposes that in a country such as ours, the traditional idea of school as 'a given' needs to be questioned.

5.2 PROFILES OF THE THREE SCHOOLS SELECTED

This section of the research details the facilities and amenities at each of the three schools, in order to fill in the outline that emerged from the survey data presented and analysed in Chapter 4. By providing a detailed picture of the teaching and learning environments of these schools, a better understanding may be reached of the factors that impact on both the resourcing and utilization of resources for Geography.

The three schools are located in Region 3 (far North Region) of the Northern Province, and fall under the Thohoyandou Inspection Area (Map, Appendix 13). The exact locations of the schools have not been indicated on the map in order to protect their identities.

The three case study schools are identified as X, Y and Z. An initial summary of information is followed by a detailed profile of each school.

TABLE 5.1: NUMBER OF TEACHERS AND PUPILS AT CASE STUDY SCHOOLS

School	Grades	Educators employed by the school	Educators interviewed	Enrolled learners (1997)	Learners interviewed	Learner:teacher ratio
X	4-7	13	1	300	8	1:23
Y	1-7	19	2	665	7	1:35
Z	0-12	35	1	550	4	1:16

The significance of Table 5.1 lies in the teacher:learner ratio indicated in the last column. It is clear that at schools X and Z the ratios are low, whereas at school Y, the ratio, although high, is still in conformity with the requirements of the Department of Education. The ratio is lowest at the independent school (Z). However, just how misleading these statistics can be, in terms of actual teaching practice, will be revealed in subsequent discussion.

The following tables summarize the general situation at these three case study schools.

TABLE 5.2: SUMMARY OF AMENTIES AND FACILITIES AVAILABLE AT CASE STUDY SCHOOLS

KEY: S = Sufficient (enough/available and in good quantity)
INS = Insufficient (available but insufficient or poor quality)
N = Nothing (not available at all)

Table 5.2 (a)

School	Classrooms	Desks	Library	Media Centre	Toilets	Gardens
X	INS	INS	N	N	S	S
Y	INS	INS	N	N	INS	S
Z	S	S	INS	INS	INS	S

Table 5.2 (b)

School	Telephone	Offices	Staffroom	Fence	Service
X	INS	N	N	S	N
Y	S	N	N	S	N
Z	S	INS	INS	S	INS

Table 5.2 (c)

School	Water	Electricity	Photocopier	Typewriter
X	S	INS	N	INS
Y	S	N	N	N
Z	S	S	S	S

Table 5.2 (d)

KEY: N = Not available
A = Available, even though in small quantity and/or poor quality

Media	School X	School Y	School Z
Blank video cassettes	N	N	A
Prepared video cassettes	N	N	A
Television sets	N	N	A
Video recorders	N	N	A
Video camera	N	N	A
Blank audio tape cassettes	N	N	A
Tape recorder	N	N	A
Photographic film	N	N	A
35mm camera	N	N	A
Prepared photographic slides	N	N	A
Overhead projector	N	N	A
Prepared OHP transparencies	N	N	A
Computer	N	N	A
Maps	A	A	A
Aerial photographs	N	A	A
Pictures/photographs	A	A	A
Newspapers/magazines	N	A	A
Textbooks	A	A	A
Atlases	A	A	A
World globe	A	A	A
Media centre	N	N	A
Field trips/tours	A	A	A

From these tables it is clear that the two government/public schools, X and Y, suffer from serious deficiencies of facilities, amenities and resources. School Z, which is an independent school, has almost all the basic facilities and amenities a school might require.

The shortages reflected in Table 5.2(d) correspond to those featured in Table 4.4 in Chapter 4 of this study, with the most commonly available media being maps, textbooks and atlases.

Like Table 4.4.1 in Chapter 4, Table 5.2(d) shows that all schools surveyed indicated that they do undertake field trips. However, questions arise as to what kinds of trips are undertaken, and how and why they are undertaken. These questions could only be answered in the qualitative work done at the case study schools through interviews with teachers and learners. These interviews are discussed later in this chapter.

5.2.1 **School X**

School X is a government school located in a rural village not far from Thohoyandou Town. The school has intermediate classes (that is, Grades 4, 5 and 6) only. There are no foundation classes (that is, Grades 0 to 3). The enrolment is not very high. There are 300 learners and 13 teachers, giving a teacher/pupil ratio of 1:23. Although this ratio looks very reasonable on paper, it is only when one visits individual classes that one realizes that the true picture differs markedly from this mathematical ratio. The factors that lead to this anomaly will be explained when class sizes at these case study schools are discussed later.

At this school some teachers live far away from their place of work. For example, the Geography teacher who took part in this research lives 70km away from the school. The question of how distant teachers' places of residence are from the school becomes important because this affects their activities. Some of these teachers and pupils use

buses and taxis to come to school, and rush for their transport immediately the school day ends. This means that even if they wish to stay longer at school, they are forced to leave because their public transport has arrived.

The effects of the distance travelled by teachers and learners to and from school on the use of resources emerged as a factor when the teacher at this school explained the difficulty of using the local environment as a resource. She pointed out that the standard 30-minute period was too short for outdoor learning. The other option would be to carry out such activities after school or on weekends, and this would not be possible if one had to rush to catch a taxi or bus after school. For this reason she found it difficult to organise outdoor activities, where resources in the local environment could be used.

School X has two Geography teachers, one for Grade 5 and the other for Grade 6. The Grade 6 teacher declined to take part in this research. However, the Grade 5 teacher was very co-operative and helpful. I interviewed this teacher, visited her classes to observe lessons, and held several discussions with her, especially after the lessons. She was responsible for arranging appointments for me and for the workshop, which I requested with the whole staff. The teacher also arranged learners for me to interview.

The physical buildings of the school include a U-shaped block of classrooms. It has a good fence and a gate that can be locked. There are no shack buildings and no classes take place outside under trees. Some of the classrooms have electricity, other are not supplied as yet. There are sufficient toilets for both teachers and learners. There are water taps in the school grounds. The school can therefore water its gardens. Plants and green grass have been planted, and the grounds are neatly trimmed and well maintained. When I asked if there were service staff to maintain the grounds, I was informed that teachers and learners do maintenance during their free time and during practical periods. Compared to other schools in the Northern Province, this school would rate among the best maintained. Despite the shortages and poverty, it was impressive to see teachers and learners keeping their school in such good condition.

There are no offices for staff; however, one classroom serves as a staffroom. Another classroom serves as a multi-purpose room, acting as a classroom, principal's office and storeroom where books and equipment are stored. The two classrooms were built recently. The school has no sports grounds. School sports like soccer and netball take place at a community sports ground some distance from the school. There is no library or media centre. There is an old, manually operated telephone that is on a farm line.

When I visited the school for lesson observations, I was taken to a classroom, which I describe as follows: It was a brick-walled classroom with a corrugated iron roof. The windows had no burglar bars. There was a long chalkboard attached to the wall. A number of old posters were displayed on the wall. There were, however, signs that the classroom was used mainly for Geography lessons.

Although some classrooms at this school have electricity, the one I am describing had no electricity. The furniture consisted of old style desks. Two desks were put against each other and learners sat in groups, often facing each other. Therefore a desk which would normally sit two learners, had five learners. The learners were squashed and the room was crowded. Learners who could not be accommodated sat on the floor.

A summary of the ratios on Table 5.1 shows that at this school the teacher/pupil ratio was 1:23. The problem with these ratios is that they are mere statistical averages. In reality, the numbers are far higher. At our meeting after the lesson I asked the Geography teacher about the class size situation. The explanation given was that there are circumstances which cause overcrowding, such as a shortage of staff and bad weather when classes cannot take place outside under trees and have to be combined. Under such circumstances, two or more teachers have to share a classroom, perhaps teaching in rotation or in shifts.

At this school, however, no classes took place outside. In this particular instance the teacher indicated that the combined class situation I observed was because she wanted to reduce her heavy load in terms of periods. In this case the teacher caused overcrowding

in order to have fewer teaching periods. By combining the two classes she ended up with one big class of 70 learners! This practice could be blamed on bad classroom management on the part of the teacher. She tried to solve a personal problem by creating a more serious one. At the same time this teacher identified shortages of resources and amenities in an overcrowded classroom as affecting teaching and learning adversely.

5.2.2. **School Y**

Like school X, this school is also a state school. It is located in the town of Thohoyandou. This school has a foundation phase (Grades 0 to 3), an intermediate phase (Grades 4 to 6) and a senior phase (Grade 7). The school has 665 learners, 19 teachers and 13 classrooms (Table 5.1). However, as in the case of school X, the ratio of 1:35 at this school is purely notional, as some classes are as big as 75 learners per teacher.

Two Geography teachers at school Y took part in this study. During my first visit to the school the principal called them so that I could negotiate with them. They finally agreed to take part. One teacher taught Grades 5 and 6 and another taught Grades 6 and 7. I did my class visits in Grades 5 and 6 with 145 learners and 148 learners, respectively.

Staff members at this school have no offices or staffroom. They worked under trees, in their vehicles and in the passages. The principal used a classroom, which also served as an office and storeroom. These working conditions prevented staff cohesion as they were scattered all over the school. Such conditions are clearly not conducive to good discipline and good management at the school.

The block of buildings also forms a U-shape. The school has a fence and a gate. The yard is big and contains a school garden and a sports field. However, the sports field is not very well developed, with only netball and soccer played there. The sports ground is dusty and ungrassed.

Even though the school is in town, it has no electricity. There are flush toilets but they are inadequate as a result of the high enrolment. The toilets are located in an awkward place as they are part of the U-shaped block. They are therefore too close to the classrooms. One might be forgiven for thinking that the toilets have been installed where the administration offices and staffroom should have been located. One can only conclude that when schools are constructed the authorities that do the planning think very little about the teachers. Teachers and learners who are users of the buildings are never consulted.

There is no media centre or library. The schoolyard has few flowers and some sections are paved. There is an automatic telephone.

The classroom to which I was taken on my first visit to the school was brick-walled, with burglar-barred windows and ceiling. Later on I was to learn from the Geography teacher that theft and burglary were very common at the school. More about this was discussed later when the teachers were interviewed.

There was a small cupboard. During the interview, the Grade 5 Geography teacher explained that the cupboards are few and small because planners of the school argued that cupboards use up a lot of space and reduce the size of the classrooms. They were therefore reluctant to build cupboards. No consideration was given to the need for a place for teachers and learners to store their books and equipment.

There was a good quality chalkboard on the wall in front. On the back wall there was a long bulletin board from one corner to the other. There was nothing pinned on this bulletin board. It is therefore not simply a question of having resources, but of using them effectively. Here was a school with a good bulletin board with nothing on it.

The learners in this class also used old-style desks as in school X. In this classroom one desk seated three learners and they all faced the front of the classroom. Although the classroom was crowded, no learners sat on the floor. There were 74 learners in the

classroom. Unlike in school X, this number was not the result of combining classes, but because of a genuine case of overcrowding.

At school Y, unfortunately, I did not get the opportunity to conduct a workshop, although I had planned to do so. The principal had given permission for the workshop. However, owing to the lack of a common place like a staffroom, it is very difficult to get teachers at this school together in one place. A common meeting place such as a staffroom or tearoom could help to promote unity, morale and discipline in the school.

5.2.3 **School Z**

This is an independent school, one of only a few such schools to be found in Thohoyandou. My decision to include an independent school in my case study was to make a comparison of the situation of resources in private and government schools in the same inspection area. This was done in order to get another perspective on resources and where possible, establish the factors that distinguish the situations at the two kinds of schools. Comparison was, however, not the main purpose of this study.

Although the school is independent and private, it follows the same curriculum as public schools. During the interview with the Geography teacher, he explained that the school is still to decide whether to adopt outcomes-based education or not. The teacher was of the opinion that the school would not adopt this system.

There are 550 learners and 35 teachers at this school. The teacher/pupil ratio is 1:16 (Table 5.1). During the interview the Geography teacher explained more about this teacher/pupil ratio. He informed me that the biggest class is 29 and smallest is 15. The parents and school authorities make sure that the class sizes stay small to avoid overcrowding. Since this is an independent school, the parents are given the powers to decide the ratios.

The Geography teacher agreed to take part in the research. He is responsible for Geography from Grades 3 to 9. However, the teacher became evasive and in the end I could observe one lesson only. The rest of the lessons could not take place because of postponements and even cancellations. The teacher was also a sports organiser at the school and he was often absent or came to school and left for sports meetings. I also think that although the teacher agreed to take part in the research, he did so reluctantly. He made many efforts to avoid observed lessons taking place through postponements and cancellations. I concluded that he might have agreed to take part in the research simply so as not to embarrass the head of department and principal at the school. I had asked permission to conduct a workshop and the principal had shown willingness, but it did not prove to be possible.

The school has a very big yard and there is much room for further physical expansion. There are many trees and flower gardens. The school has a maintenance staff which takes care of the school gardens. Although the sports ground still needs improvement, there are sections for various sports including soccer, netball, tenniquoit and athletics.

The school has a fence and electricity. Unlike the other two schools, the school buildings do not form one continuous U-shape block. This one has detached blocks, each block housing a particular phase, namely foundation phase, intermediate phase and senior phase. There is also an administration block housing the principal's office, a media centre and a staffroom.

The principal's office was reasonably well equipped. It had tables, chairs, an automatic telephone, two computers, a roneo machine, photocopiers and two portable cupboards. He shared his office with three administrative clerks. This school was one of the few that achieved a 100% pass rate in the 1996 Std. 10 results.

There was a new administration block under construction which after completion will house staff members in offices located in terms of various departments at the school. Construction was at the time of the research interrupted due to lack of funds.

The media centre is well equipped for a school of this size. The school is a member of the National Film Library and can therefore make use of the resources from this library. The day I visited the school, the librarian was returning some videocassettes to the library in Pretoria. I was informed that some teachers at the school produce their own videos. It was evident that the teachers at this school were using the resources available at the school to generate even more resources. The media centre also served as a library and resource centre for both the teachers and the learners. In the centre were a TV set, a VCR, videocassettes, an OHP and a photocopier.

There are obvious differences, in terms of resource availability and use, between this independent school and the two other government schools. The independent school parents are prepared to pay more so that their children can receive a better education, under conditions that are conducive to teaching and learning.

This school has flushing toilets leading to a French drain, as the school is located in a place where municipal sewerage pipes do not yet reach. Some of the toilets were no longer in use because they were full. The staff members at this school have no offices, but they do have a small tearoom.

When I visited the school for the first time to observe lessons, I noticed that the classrooms were wide and spacious. There was plenty of walking space in between the rows of tables. Unlike the other two schools, learners at this school sit at tables and chairs and not the old-style desks. There was no shortage of tables and chairs. Learners sat comfortably in a relaxed atmosphere. Learners seemed more confident and assertive than at schools X and Y.

5.3 **INTERVIEWS**

Interviews played a key role in obtaining additional data about teachers' perceptions and use of resources. The interviews also helped to clarify particular aspects that emerged

from the survey results. Teachers and learners were interviewed separately. The teachers were interviewed individually at the schools. Learners at each of the schools were interviewed together as a group.

TABLE 5.3: IDENTIFICATION OF INTERVIEWEES (AS IDENTIFIED FOR THE RESEARCH)

School	Geography teachers	Learners
X		A
		E
	F	
		G
		H
		I
		J
		K
		L
Y	B	M
	C	N
		O
		P
		Q
		R
		S
Z	D	T
		U
		V
		W

5.3.3 Interviews with Teachers at Case Study Schools X, Y and Z

A total of four teachers were interviewed at different times, according to appointments made (Table 5.4). The type of interview used was semi-structured (Appendix 11).

5.3.3.1 **The Use of Resources in General: Importance and Perceptions of Teachers**

The teachers interviewed at the case study schools generally agreed on the need to use a variety of resources for their lessons. They recognised the role of these resources in effective teaching and learning. The identification of resources for the teaching of Geography varied considerably among the four teachers interviewed. Only one of the four teachers can be said to have been conscious of the variety and richness of resources within and around the local environment, and their applicability to teaching and learning. The notion of 'resource' which the teachers shared was predominantly that of the traditional 'teaching aid'. This is highlighted further in the discussion relating to the classroom observations.

On the issue of the need for and shortage of resources, these teachers, like those in the survey schools (Chapter 4), pointed to the Department of Education as the main supplier. The problem of funds was attributed to the failure of the Department of Education to supply such materials. Three of those teachers interviewed did not think that there was much they could do to solve the problem of shortages. However, teacher C at school Y appeared to be the most creative and enterprising. She had many ideas about resources, and showed this in her lessons I observed. She used a variety of things found in the school environment and in the neighbourhood.

During the interview she explained that she used anything relevant to the lessons, in the classroom or outside the classroom, and said that she took her learners outside the classroom whenever possible to make observations. At school Y, where this teacher is employed, there is co-operation between the teachers and the principal. If the teachers need something, and there is money available, the principal obliges. This teacher indicated that the Department continues to supply learning materials for the foundation phase and that she takes the opportunity to make use of some of this equipment for her lessons in the intermediate phase.

From the interview with teacher C, it became clear that when there are great shortages and needs, creative teachers need not find the situation totally hopeless. They can always try to find something to solve their problem. For example, during the lesson observation and interview with teacher B, also at school Y, this teacher told the learners to do homework by watching weather forecasts on the TV that evening. In this way, the teacher was using TV in the learners' homes as a useful resource. Most learners at school Y stay in the township and would have TV sets in their homes.

5.3.3.2 **The Use of Books, e.g. Textbooks and Atlases**

The survey emphasized the fact that the majority of schools do have access to textbooks of one sort or another. In a situation such as ours, where we simply do not have the sorts of facilities and resource base that is taken for granted in many Western countries, there will continue to be a dependence on books and printed material and in particular the textbook. Thus, while alternative resources in the local environment are accepted as being important, and while much can be done to educate teachers about the use of such resources, there is limited access to computers, televisions, etc., and printed materials remain the most basic of all resources in schools.

Interviews and observation at the case study schools revealed that there is a great shortage of textbooks, the primary printed material available (since only one of the three schools has a library). The teachers argue that it is the obligation and responsibility of the Department of Education to supply schools with enough books, but the Department of Education is failing to honour the obligation. The distribution of textbooks is sporadic and therefore in some cases books that are used at school are out of date. Some books get torn because they are old or they get lost. Atlases and maps are not supplied at all. When I asked the teachers why the parents do not buy books and atlases for their children, the reply was that most parents are poor and cannot afford to do so. Parents also argue that the government promised 'free and compulsory education' and therefore must fulfil its promises.

I asked the teachers how they make use of books during lessons. They responded that learners use textbooks for reference and homework. The teachers do not 'read out' lessons to the learners during teaching. During lesson observation, I indeed noticed that no teacher at the case study schools was solely reliant on the textbook. Charts, maps and globes were used in the various lessons. For their preparation, the teachers said that they used more than one book. Teacher D at school Z explained that his main reason for using many books is to give several perspectives to learners on an issue. This exposes the learners to many ideas and makes them think. In order to achieve this objective, he prefers giving handouts to learners rather than using the textbook. As teacher D at school Z said, no book is the "alpha and omega ... the beginning and the end". School Z is fortunate to have printing facilities (Table 5.2[d]). To solve the problem of the shortage of books (that may be out of date as well), teachers also give notes. However, due to the lack of printing facilities like photocopiers, notes are copied from the board. This is not ideal because time is wasted by note taking. This was the case at schools X and Y.

Another problem which teachers and young learners in Grades 5 and 6 experience with textbooks is the style of writing. Some books are not suitable for young children because of their style and language level. Teacher B at school Y explained that learners couldn't concentrate on textbooks that are written in "essay style", becoming easily bored. They prefer books with illustrations and pictures. This problem is closely linked to the fact that the medium of instruction from the fourth year of school is English and the learners as second language speakers have considerable difficulty with the language.

Before the interviews, I observed lessons on the nine provinces of South Africa. Since the textbooks did not contain relevant maps and information about this topic, the teachers gave notes and used a chart for the lessons. However, the learners could not get their own copies of the map because there were no photocopiers that could copy and reduce the chart into A4 size maps. Learners could not draw a map showing the nine provinces. To obtain such maps, the teacher would have to go to town where there are printing facilities. During the interview, teacher A at school X explained that because funds are limited, a teacher has to be very careful and sensitive when asking for things that require

expenditure. Other teachers must also look after the needs of their learners, and one teacher cannot afford to look as though he/she is selfish. There are priority needs like chalk, marking pens, crayons and charts. Expensive items are to be avoided for one or a few items might consume the whole of the small budget.

5.3.3.3 **Availability/Unavailability of Resources**

An issue which needed to be explored further with the teachers was their perception of the availability and utilisation of resources in the local area, including:

- the classroom/school
- the vicinity of the school
- the neighbourhood, and
- elsewhere, even locations distant from the school.

After the discussions and interviews with the teachers, the consensus was that if we understand the concept of *resource* broadly, we would find resources for teaching and learning everywhere. However, if we understand resources only to mean something that we need to buy, then we will always complain about lack of money.

Teacher A at school X stated that her problem is knowing *where to find what*. Another difficulty is lack of training in the *use* of equipment even if it were bought, e.g. a computer. Teacher C at school Y was well aware of resources available in the school environment. She demonstrated this during my visit to her class for lesson observation. She used many things inside and outside the classroom, including the learners themselves. She explained that her strategy depended on the nature of the lesson topic. When it comes to equipment that has to be bought, the principal and the school treasurer do co-operate, as long as there is still money in the school budget. Teacher D at school Z pointed out that the problem with rural schools such as school Z is that these schools are isolated and in places where there are no opportunities such as those found in urban areas.

5.3.3.4 **Fieldwork and School Tours**

During the interviews, the teachers were asked whether they do fieldwork and school tours. They were asked to explain where they usually go for fieldwork and school tours, and were invited to supply reasons for doing so. What emerged from the interviews is that teachers do take the learners out for fieldwork activities. However, it was evident that such activities in fact comprise school visits to places of interest. The main reason given for these activities is the opportunity they allowed pupils to learn about places. Since the concept of 'place' occupies a central position in Geography (Binns, 1996; Carter and Bailey, 1996; Unwin, 1992; Catling, 1987; Bateman and Martin, 1980), such visits do serve a purpose. The effectiveness of such visits in terms of what they reveal about the places visited is, however, a moot point, and I tried to gain further perspectives on this from the interviews with the learners.

At schools X and Y, the teachers explained that field trips are not arranged for Geography only. Subjects like Biology, General Science and Environmental Studies are also covered during fieldwork trips and school tours. Theoretically this is a good practice, because learners can then adopt a holistic, interdisciplinary approach in their learning.

Interestingly, teacher D at school Z, the independent school and the best-resourced school of the three, indicated that he had not taken his learners for fieldwork and school tours. When asked why not, he explained that although he knows the importance of fieldwork and school tours, the biggest obstacle was lack of money for transport. But as this school is relatively well-off financially, the lack of fieldwork there cannot simply be attributed to a lack of funding.

Teachers at schools X and Y indicated that they took their learners on school trips. Most visits took place in areas of the Northern Province. However, sometimes they visit distant places like Durban, Cape Town, Zimbabwe and Swaziland. Mpumalanga is also frequently visited because of its magnificent physical features.

Teacher A at school X admitted that she had never thought that fieldwork could take place in the local environment. She said that for topics that are suited to it, she would try and organise fieldwork activities in the future. For example, she would plan a visit to a nearby coal mine so that learners would not only hear about coal, but also see the real thing. Even here the notion of the immediate environment of the school as an area rich in opportunities for Geography was not perceived.

Fieldwork as an opportunity to access resources and to utilise a variety of resources is obviously an area needing considerable attention. This is despite the fact that fieldwork has been associated with Geography as a subject area in the South African school syllabus since the 1973 revision. The fact remains that fieldwork is not a subject that is given the sort of priority it needs in pre-service teacher education courses, nor it is the focus of in-service programmes.

5.3.3.5 **The Involvement of Learners as Resource Users**

The survey indicated that teachers do see learners as resource providers and utilisers. What I needed to find out from the interviews was the sort of resources learners were seen to be able to provide and how learners were seen to use these resources. Again this may seem obvious, as current Geography literature takes it as a given that learners are the users and developers of resources, and that we have moved well beyond the notion of resources as 'teaching aids' for the teacher. The reality of the school situation in South Africa is, however, far removed from this particular approach, as is readily apparent from just this small case study.

Teacher A of school X explained how learners are involved in collecting materials like cuttings from newspapers and magazines. This was confirmed by the interviews conducted with learners at all three case study schools. Learners explained that they were capable of contributing resource materials to the school with the assistance of their teachers.

This revealed that the notion of resources in this instance is limited to the collection of items for observation, as a means to increase factual information available in the classroom.

5.3.3.6 **Modern (hi-tech) Media, Material and Equipment**

Geography as a dynamic subject is linked to the so called 'hi-tech' media (Hassell, 1997; Hassell, 1996; Davey, 1995) and is considerably enriched through their use in classrooms. The technology referred to here is mainly television and video recorders, computers and the Internet, as explained in Chapter 2.

The teachers at the case study schools were interviewed on the use of modern technologies as resources for teaching and learning. Their response was that they see great value in using these technologies. They are interested in knowing and learning more about these technologies. Teachers are not generally techno-phobic, and given the opportunity and an appropriate learning environment, will use this type of resource. Where teachers do not use even the existing equipment available in the schools, it is generally because to do so involves an enormous effort in terms of time. The sheer logistics of accessing and setting up the material when it is needed is a further deterrent. In addition, where 'hardware' such as this is supplied to certain schools without the necessary education of teachers in its appropriate use, such equipment tends not to be utilised.

5.3.3.7 **Class Sizes**

The sizes of the case study schools and their teacher/learner ratios were featured in Table 5.1. According to this table, the teacher/learner ratios appear to be generally acceptable. However, an advantage of doing on-site visits and class observation is that one sees the reality of the situation. The discrepancies are considerable, for example, teacher C at

school Y taught Grades 5A and 5B with 75 and 74 learners respectively. Teacher B at school Y taught two Grade 6 classes with a total of 148 learners. At school Z, the smallest class had 15 learners, whereas the biggest had 29 learners (this notwithstanding the fact that at times classes are combined to reduce the teaching load in respect of periods taught).

The teachers were asked their opinion about class size and the effects of size on the effectiveness of lessons. Teacher D at school Z indicated that even parents prefer small classes because they know the teacher can deal with smaller classes effectively and can assist individuals. It is difficult to pay attention to all the learners when the class is too big. Teacher B explained that disciplinary problems also occur when the class is too big.

5.3.3.8 **School Vandalism and Burglary**

Another matter of great concern that came out of the interviews was vandalism and burglary. In normal communities one would not expect thieves to steal from poor schools, but this is happening in many schools in the Northern Province. Teachers interviewed at the case study schools explained that vandalism and theft are serious issues at their schools. Even where there is a modicum of security thieves climb through the roof and ceiling to gain access. When thieves cannot find anything of value to steal they turn to vandalism. They turn things upside down, break apparatus, tear books, pull down charts and posters and destroy them. In extreme cases, classrooms and offices are burned down.

Crime is not easy to solve because poor schools cannot afford night guards or security systems like alarms. In some cases schools are isolated from the communities. An example of such a school is case study school Z. Such schools may have the advantage of unlimited space to expand physically, but they can be easy targets for thieves, while lack of electricity means that thieves can operate easily under the cover of darkness.

Teacher C at school Y vividly explained that they report cases and go to court but nothing seems to stop the thieves. At her school they keep on replacing stolen items. This is very demotivating for the teachers.

5.3.4 Interviews with Learners at Schools X, Y and Z

To get a balanced perspective on the interviews with teachers, learners were also interviewed. Although they were young, in keeping with the belief that children are not simply empty vessels, their views and opinions were sought. Learners interviewed were in Grades 5 and 6 (Table 5.3). Nineteen learners were chosen randomly. They were asked a set of questions pertaining to things that relate to resources such as toys and games (Appendix 12) as well as relating to the school visits they might have been on. Although Seidman (1991) has indicated that it is difficult and sometimes impossible to interview young children (Chapter 3), a successful attempt was made to interview the learners at case study schools.

Indeed, it was difficult interviewing the young learners, but they managed to shed light on what they do. Asking questions relating to toys and games was done to find out what learners enjoyed doing the most and to find out what things they liked playing with. Armed with such knowledge, teachers would know what sort of activities and tools they needed to bring to class for effective learning to take place. For example, it is known that a Western modern day child will enjoy playing computer games. This helps the teacher to structure learning activities in such a way that the learners will learn through play (Chapter 2). Since they enjoy playing computer games, the chances are high that teachers who make use of computers will gain the confidence of such learners and that the learners will feel greatly motivated when they use computers to learn.

Communities differ and so do schools. The learners at the case study schools indicated that they enjoyed traditional toys and traditional dances as well as modern games and toys, puzzles were mentioned in particular. Television is enormously popular with those

learners who have access to this medium and it appeared that a great deal of time is spent passively watching television. It did not appear that the learners interviewed had easy access to storybooks or to the sorts of modern educational toys that develop spatial perception. Learners, however, indicated that they enjoyed making things, and this is a dimension of a number of traditional games. Schools in our communities need, on the one hand, to capitalise on the conceptual possibilities inherent in traditional games, dances and songs, while on the other hand, children from disadvantaged communities need to be provided with opportunities to use, make and work with resources that will provide enrichment.

Another aspect of learners' interviews focused on places visited during fieldwork and school tours. Learners remembered vividly places visited and could make a long list of things they saw. What was of particular interest was the range and diversity of their memories of these visits. While there was certainly a richness that supported the worth of school visits, what was striking was the idiosyncratic nature of what the children remembered, rather than any systematic or coherent shared picture of the places visited. This may have been partly a result of the way the interview was conducted, yet it does raise questions about the purpose of these visits and their desired outcomes.

What was interesting was the role played by certain of the parents and guardians in taking their children to visit places, especially during the school holidays. The visits mentioned were diverse, ranging from local visits to visits to the game parks and distant visits like Cape Town and Durban. The role of parents in contributing towards the education of their children is always regarded as of paramount importance. The education of children cannot be made the responsibility of the school alone. To quote Roger Briggs on outcomes-based education, "what about support systems? We mean of course the support needed from parents in particular. They are required to supply resources such as sets of encyclopaedia, computers linked to the Internet systems, or be prepared to ferry their children to libraries or other institutions where such facilities are available" (City Press Educational Supplement, 24 August, 1997:1).

5.4 CLASSROOM VISITS AND LESSON OBSERVATION

An important dimension of this study involved classroom visits and lesson observation. The experience of seeing teachers in action in the context of the environments in which they work added to my understanding of their reality and made me conscious of the problems associated with making judgements based on that which 'ought to be happening'.

The visits were done by special appointments (Table 5.4):

TABLE 5.4

CLASS VISITS TIME-TABLE

School	Classes	Day/period/time	Teachers	No. of lessons observed
X	Grade 5	Wednesdays	A	4
		Period 3 08h10-08h40		
Y	Grade 5	Mondays Period 5 10h30-11h00	C	6
	Grade 6	Mondays Period 10 12h10-12h40	B	
Z	Grade 6	Fridays Period 6 11h00-11h30	D	1

During the visits a number of lessons were observed. After the observations, interviews and discussions would follow in order to gain more insight into what was going on during the lessons. This was a very good opportunity for me to interact with teachers and learners more intimately. These discussions revealed the motives for what the teachers did, their fears and problems, and gave me a better perspective on the possibilities and potential that exists for change.

I was very pleased to have been allowed into the classrooms to observe the lessons in progress. I considered it a great privilege because at that time in the Northern Province not even inspectors of schools were allowed into the classrooms by the teachers. They

have been barred since the time of struggle and boycotts. I assured the teachers that I was visiting their classrooms as a colleague, to learn about and understand their situation and to perhaps even help where I could. I assured them that I was not coming to 'inspect' or 'judge' what they were doing. I also assured them of confidentiality and anonymity.

On the first day of my visit to the classroom my presence did not cause much stir nor did it arouse much curiosity. I think the reason was that the learners were already aware of my presence at the school. They had seen me and I had already interviewed some of them. However, at school Z I went to class before I did the interviews with the learners. Although I was introduced to them by their teacher as a student, some started to ask questions like whether I was coming to replace their teacher. At schools X and Y I was also introduced to learners before the lessons started. They looked excited as I sat with them. I asked the teachers to allow me to sit with the children. Sitting with the children would make me look like an ordinary visitor and not somebody very special. At these two schools I was warmly welcomed. I was even invited to make inputs when the lessons were in progress. School Z proved to be more problematic: appointments with the teacher were continually postponed, and as a result I was only able to observe one lesson at this school. I had hoped to spend continuous periods with these teachers but force of circumstances made this impossible.

In lessons at school X, conducted by educator A, the teacher mostly used charts and flashcards. Teacher C at school Y used a variety of resources, some of which she had borrowed from the Foundation Phase teacher and adapted to her lessons, and others which included collections of items the learners had been asked to gather and to bring to school. These included collections of leaf specimens and newspaper cuttings. The resources that were noted and used in the series of lessons I observed included:

- the use of a compass
- textbooks
- weather charts
- globe

- map
- pictures
- newspaper cuttings
- samples/specimens
- model
- puzzles
- atlases.

The resources were employed primarily in the sense of 'show and tell'.

During the lesson observations I looked at the handouts given to the learners. These were usually of poor quality. The lack of machines like typewriters, computers, roneo machines or photocopiers is the main cause for this. Most of the handouts were done by hand or were typed on wax stencils and duplicated by the old manual machines. It was only at school Z that I observed neat handouts.

5.5 AN ANALYSIS OF THE CLASSROOM TEACHING UNDERTAKEN BY THE RESEARCHER

Valuable as observation of the lessons was, the reality of having to manage these large classes in cramped conditions with only a 30 minute period was only really brought home to me when I taught myself. Teacher B at school Y offered to let me have two lessons to teach, one with the Grade 6A group and one with the Grade 6B class.

The lessons I conducted were follow-up lessons on the topic "Highlands and Lowlands of Africa". The teacher had previously explained the concepts 'highlands' and 'lowlands' and simply named them. My follow-up lesson was about locating them on the map of Africa. Through the lesson I wanted the learners to learn skills including the use of the atlas and map drawing. I also wanted the learners to do some independent work on their own. I selected this lesson as one which could be seen as straightforward and with easily

executed tasks in what would be judged as a 'normal classroom' in most schools in the accepted sense. Further to this, the lesson was one that we would advocate as a typical lesson in the college at which I teach.

I was unable to do the lesson planned in the time allocated and had to come back in the afternoon study time. I was unable to manage the lesson on my own and had to obtain the assistance of the teacher, as coping with 75 learners all of whom were expected to produce a map was impossible on my own. Not all the learners had atlases and these had to be shared, thus making the activity that much more complex and time-consuming. The map outlines could not be photocopied, as there are no duplicating facilities at this school, and therefore the learners had to trace their maps. Since there was no tracing paper at the school I had to purchase the necessary equipment, as would the teacher had she attempted this lesson. As these learners had no previous experience of the tasks they were asked to do, although these were relatively straightforward, they needed considerable help. It was immensely difficult having each child perform the task when they had such limited space in which to move.

5.6 WORKSHOP ON RESOURCES IN AND FOR GEOGRAPHY IN OBE

At the schools where I did the research, I made a request to conduct a workshop on the use of resources. Although the request was granted at all three case study schools, the workshop could only take place at one school (school X). At the other two schools it was very difficult to get the teachers together in one place. I have already pointed out that when teachers do not have a common place, like a staffroom, it is difficult to get them together. Subject teachers with free periods have no option but to sit in their cars or under trees somewhere.

During break one can hardly do anything with teachers because the time is too short and they use break for their teatime. After school they leave immediately. Some rush to catch public transport. The old culture of remaining at school for some hours is no longer

in practice. In some cases, this is a result of long distances that must be travelled to and from school, but generally speaking, teachers are just not very keen to work after hours or extra hours.

At school X it was possible for me to conduct a workshop because learners were writing their mid-year examinations. I was given the time to conduct the workshop at the conclusion of the examination session. The workshop lasted for one and a half-hours, from 10h30 to 12h00. The purpose of the workshop was to share their perceptions on the use of resources in OBE. The workshop was essentially an extension of my discussion with the Geography teachers and gave me an opportunity to ascertain the thinking of other teachers on the staff about resources.

After a short presentation on the topic "Resources, Geography and Outcomes-Based Education", there was a lively discussion with the teachers' active participation. The liveliness of the debate can be ascribed to the fact that the teachers already had ideas on outcomes-based education, obtained from meetings attended and from pamphlets read. Two of them were members of a learning area committee. But while most members of staff had a fair amount of theoretical knowledge of OBE, they had as yet little idea as to how it was to be implemented.

During the presentation I handed out some newspaper cuttings featuring debates and various viewpoints on OBE. In the course of our discussion, the following viewpoints were expressed:

- Outcomes-based Education will require a variety of resources. Some teachers asked, "where are these resources to be found?" There were several answers proposed to this question, the general consensus being that the Department of Education should supply the necessary resources. Some of the teachers questioned this viewpoint, asking how the Department of Education could supply these when they were failing to supply even the most basic needs like textbooks, desks and classrooms.

The view that the Department of Education takes care of schools in the urban areas while neglecting schools in the rural areas was also expressed. A number of teachers stated that the environment of the learners could furnish resources for teaching and learning.

This aspect of the discussion revealed that there were some who felt hopeless and had given up all hope that anything good could ever be achieved. Some positive ideas came from those who suggested the environment as a great resource for teaching and learning. In opposition to this the view was expressed that to depend on using the learners' environment would be a handicap for rural learners, because they would not be in a position to use modern scientific and technological resources like computers and the Internet. It meant that rural learners would remain backward in terms of modern science and technology.

- As the discussion moved more deeply into the subject of OBE, a number of participants expressed their reservations about OBE, citing its failure in some countries. They asked, "what will make it succeed in South Africa?" Some participants tried to answer this by saying that the version of OBE that is being implemented in South Africa differs from that of other countries.
- Participants also expressed concern about the slow progress in retraining teachers for OBE. They asked, "who will train teachers in South Africa, where this system is completely new? Will the Department of Education import trainers?"
- Another valid reservation expressed concerned the fact that outcomes-based education is also hi-tech. The teachers asked, "are we to be supplied with computers? What about the lack of electricity and telephones in rural schools? Will training in computer literacy be offered?"

Since there was no one with ready answers present at the workshop, the viewpoints and opinions expressed generated a lively debate. The consensus on many of these issues was to wait and see how the Department of Education would go about implementing OBE.

The significance of the workshop for me as a researcher was to be afforded the opportunity to share ideas and views with all the teachers, including the principal, at school X about resources for teaching and learning, especially with reference to OBE. The teachers understood that OBE requires more resources and not less. They also came to realize that although the Department of Education has a responsibility and an obligation to supply resources, they too would have to play a role in finding resources from the environment and in putting these to proper and effective use.

5.7 DRAWING THE THREADS TOGETHER

A number of important points has emerged from the interviews, the school and classroom visits, my personal experience of teaching and from the workshop. At the outset it must be emphasized that the facilities and the situations described at the three case study schools are not worst-case scenarios, since there were no shacks on the premises and no classes took place outside under trees. There are many other schools in the Northern Province that consist only of shacks, and there are schools where classes are indeed taught outside and under trees. The three case study schools described above have their own unique qualities, characteristics and problems when it comes to resources. The discussion highlighted how teachers and learners cope with their particular circumstances.

The aspect of the interviews pertaining to resource availability revealed many difficulties experienced at these schools. One might have thought that the provision of basic items like textbooks would not be a problem at any school, but that is not always the case,

particularly in the Northern Province. It is clear that education as a whole is seriously affected at such schools.

The problem as it emerged in the interviews is multifaceted. In the first instance, teachers need to be helped to gain a different perspective on the notion of a resource in terms of teaching and learning. While this may seem an unnecessarily obvious statement, the reality, as was revealed both in the survey and the interviews, is that traditional education courses for teachers have not provided this type of guidance, nor have they focused on this dimension of thinking. Secondly, teachers need considerable re-education about the use of resources in and for Geography, particularly in relation to the changed educational approach of OBE. A third issue remains one that is linked to the basic facilities. If learners are to work with resources, whatever they are, in a meaningful fashion, they need space to do such work and furthermore they need somewhere to store the work while it is in progress, and somewhere to display the completed product.

A broader view of resources helps teachers to focus more broadly, so encouraging them to look around in their environment for things that can possibly be used as resources for teaching and learning. However, it has to be accepted that rural schools lack valuable amenities, facilities and equipment such as electricity, photocopiers, faxes and computers. For these rural schools to be on a par with other schools in the country, such shortages must be attended to so that these schools can also enjoy the fruits of modern science and technology like the computer and the Internet. They cannot rely solely on traditional resources of learning. Learners in rural schools must learn using up-to-date equipment so as to compete with the best in the world.

Crowded and cramped classes influence the teaching approaches used. The teacher may adopt the 'teacher-tell approach' most of the time as the best approach through which he/she can be accessible to many learners. The teacher may know that this is not the most effective approach to use, but may be forced to adopt this method because of the circumstances. Teacher C indicated that even when learners are grouped, the situation still presents problems because you end up with big groups or with many groups that are

difficult to manage. Writing in City Press about OBE in relation to big classes, Roger Briggs stated, "OBE is not suited to over-large classes as the teacher/facilitator needs to give considerable attention to individuals for it to be effective" (City Press Education Supplement, 24 August, 1977:11).

My research programme involved meeting with Geography teachers not only to interview them, but also to hold informal discussions with them. One issue that arose from these informal discussions related to the involvement of parents in the education of their children and in school matters. At school X, I saw parents who were there to cook and serve meals to the children (school feeding schemes). At school Y I saw a mother who came to enquire about her child and some members of the school governing body who had come to attend a meeting. When parents' meetings are called, however, the attendance is usually very poor. The potential contribution of parents as resources other than as fee payers is not recognized except in a very simplistic manner. In a number of the communities there is considerable unemployment and often parents are available. Equally, each community has a wealth of knowledge and expertise among its members that can be tapped into. This too is not recognized.

The informal discussions also provided an opportunity for me to give practical assistance, especially with ways of finding, making and using resource materials. For example, at school X, I assisted the teacher to open a resource list file, in the hope that the teacher would continue to supplement it. An attempt was therefore made at case study schools to establish a resource base. However, my stay at these schools was limited. After two months I sent out a questionnaire to the schools to find out whether they were continuing what I had started with them (Appendices 16 and 17). The responses were very encouraging.

The lesson observations and my own attempts at teaching, using traditional approaches which are representative of the recipes for 'good lessons' given in pre-service education courses, made it blatantly obvious that these approaches simply would not work in these conditions. What struck me most forcibly was that that which we have been taught to see

as the 'norm' in terms of teaching and learning is a myth in a great many of our schools. For these teachers and others in similar situations the abnormal is the norm. If we are even to begin to consider providing these learners with an education that will allow them to be 'internationally competitive' our entire thinking about and for education will need to radically alter, as will the education courses we provide for our teachers.

5.8 SUMMARY OF THE CHAPTER

The significance of this case study lies in the fact that it exposed the inner workings of the schools and the realities of their situations.

An important dimension of this chapter was that the voices of teachers and learners were heard. In interviews, workshops and informal discussions, the teachers and learners who were participants in this research expressed their views and opinions. They explained what they did, and why and how they did it. They expressed their frustrations and indicated opportunities that exist. They accepted suggestions to improve their situations. They too had ideas on what could be done to improve their situation.

The chapter starkly conveyed the plight of teachers and learners in the classroom. It did not set out to suggest that resources are the only factor behind the success or failure of education. Together with other factors like good school and classroom management, discipline, dedication and commitment by all stakeholders, resources play an important role in learning and teaching.

CHAPTER 6

SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.1 INTRODUCTION

This study focused on the value of resources for teaching and learning, with special reference to Geography in the senior primary school (intermediate phase). The study investigated the perceptions of Geography teachers in schools of the Northern Province, regarding the use and role of resources in their teaching context. Further to this, the study provided insights into the availability of resources in these schools.

The research participants were teachers involved in the teaching of Geography in Grades 5 and 6. Grade 5 and 6 learners were also involved as participants in the research.

Located in an interpretative paradigm, the research focused on gaining understanding of the research problems through questionnaires, interviews, on-site observation, lesson observation and workshopping with the teachers in the three case study schools. In this paradigm, unlike the scientific-rationalistic paradigm, researchers regard people as human beings with feelings, fears, frustrations and hopes. Research in this paradigm takes place through interaction with human beings in their social settings, with the researcher taking the role of an observer or a participant. In this study, the participants were teachers, learners and the researcher interacting with one another in the educational setting of the school. The desire of the researcher was to understand the situation from the point of view of the teachers and learners.

Data collected through the case study were weighed against those gathered from a small-scale survey of schools in the inspection area in which the case study schools were located. The multi-data approach followed constituted an attempt to obtain validity through triangulation (Cohen and Manion, 1994; Denzin in Keeves, 1988).

During interviews and lesson observation it was revealing to see and hear how teachers perceive and use resources. To some teachers resources are teaching and learning aids to be purchased, such as maps and books. Others saw them as anything they could make use of. These different perceptions of resources had an influence on the way teachers found and used them. The restrictive perception of them as mere teaching aids meant that teachers had serious problems in finding them, because their schools lacked the money to buy them. But when they are regarded in the broader sense, then opportunities for finding them and using them abound.

This study involved a survey of the target population, and an in-depth case study of three sample schools. After identifying the target population from information obtained in the offices of education authorities in the Northern region (Region 3), postal survey questionnaires were sent out to the schools. Their return rate was low, at 39%.

The research findings from the various data sources were recorded, analysed and compared. They revealed comparable patterns among survey schools and case study schools, as well as among case study schools themselves. The methodological triangulation used (Stake, 1995; Denzin, 1990; Keeves, 1988), was important in order to understand the situation from different angles and perspectives (Altrichter, 1993).

6.2 THE KEY DIMENSIONS AND HIGHLIGHTS OF THE RESEARCH

The key dimensions of the research include the following:

- The need to take primary education seriously, since it is the foundation of all future learning. Sadly, in South Africa, this phase of education is grossly neglected, as more attention is given to secondary and tertiary education. This neglect is clearly evident in the research and in the literature, where one finds that little has been done on primary education.

Literature on primary school Geography in South Africa is also sadly non-existent.

- Geography remains an important and useful subject. Although it may change in character and name, it remains a very important subject, touching on different learning areas in outcomes-based education and effectively bridging the Social/Human and Natural Sciences.
- The need to enhance and enrich the teaching of Geography through the use of a wide variety of resources. The research highlighted problems faced by disadvantaged schools in the Northern Province. While we are entering a new era of outcomes-based education, where teaching strategies are changing from traditional ways based on behavioural theories to new ones based on constructivist theories, resources are also undergoing a period of enrichment, with the introduction of modern technologies such as the computer and the Internet. The new technologies do not replace but supplement and enrich traditional resources like textbooks.
- Fieldwork remains the core of Geography, and those schools that are poor can use fieldwork to learn most topics in Geography.

The highlights of the research were:

- The interviews and field visits: Visiting the schools and meeting learners and teachers face-to-face was an experience any researcher would cherish. To see and experience what the teachers and learners go through at school cannot be substituted by any other research method. One teacher/participant remarked that she would prefer those with an interest in or responsibility for education to actually visit her school, to see and experience at first hand the conditions under which teachers and learners are doing their work.
- My involvement in the lessons as an active participant observer was a very useful experience. To get the 'feel' of what someone goes through needed such an experience.

- During lesson observations it was interesting to see the way in which teachers perceived resources. One teacher in particular showed signs of being determined and resourceful despite all odds.

As a researcher I was struck by:

- The extent of the frustrations felt and expressed by some of the teachers I interviewed. I saw that these frustrations could lead to demotivation. It seemed these teachers felt that no one understood the extent of the difficulties faced by themselves and their learners. For if anybody did, they would surely by trying to do something about it. One could sense their beliefs of powerlessness and disempowerment.
- The zeal and enthusiasm showed by some of the teachers to do their best despite the frustrations and enormous difficulties.

The survey also affirmed that we cannot place all teachers in the same stereotypical box.

The interviews highlighted in detail the deplorable backlogs in the provision of a basic environment in which teaching and learning can occur, the sort of environment which some countries in the world take for granted.

The interviews also served to emphasize that teachers and learners are not mere statistical numbers. They are people with feelings, frustrations, fears and hopes. Had I been satisfied with the survey only I would have lost much of the depth, richness, goodwill, human touch and illumination that I obtained through interviews and class visits.

The following emerged from the study:

- Among the teachers who responded to questionnaires and who were observed there were some who understood 'resources' in the narrower sense of media or teaching and learning aids. However, there were others

who understood 'resources' in the wider sense. The latter understood that many things in, around and far away from the school could be used as learning resources. School trips were undertaken, but not much genuine fieldwork was being done.

- Most schools in the Northern Province have serious shortages of resources. The schools surveyed have very few amenities and facilities. The shortages are critical.
- Surveyed schools indicated the problems they wereexperiencing and made suggestions as to what could be done to solve or relieve the situation. The biggest problem is finance.
- Teachers indicated that despite the many problems experienced, they were doing something to make learning possible. For example, they made use of the local environment and organized school tours.
- The teachers emphasized the role that government should play in resourcing the schools.
- Some teachers felt that they needed in-service training on the development and use of resources.

These findings are obviously a confirmation of abject poverty in the Northern Province. However, what should be regarded as of greater importance is what the research has provided in the form of empirical evidence within the framework of resources and the education crisis in South Africa. The value of research such as this, where empirical and tangible evidence is presented, is to highlight the extent of the problem and indicate how grave the problem is, as we move towards the new curriculum of outcomes-based education which will require more and not fewer resources.

6.3 RECOMMENDED SOLUTIONS

Suggested solutions to the problems indicated are set out in terms of ways in which the situation can be improved in the short, medium and long term. It is stressed that these proposals are not prescriptive but tentative.

6.3.1 Short-Term Solutions

Possible short-term solutions are those measures that can be implemented immediately. These include:

6.3.1.1 The Use of the Local Environment

The local environment is always available and is usually rich in learning resources. Therefore teachers can find suitable resources in the environment relevant to their lessons and use these for the benefit of learners. This strategy also saves money and time, when compared to buying expensive equipment or travelling to faraway places.

For local fieldwork to be effective and successful, the school and class timetables should be drawn up in such a way that such fieldwork activities can be carried out during school hours. In the old curricula, such activities were difficult or impossible to carry out during school time because the school day was divided into short periods of 30 minutes each. After school teachers and learners immediately go home because in most cases they live far away from school.

The biggest problem always mentioned by respondents and participants was lack of finance. Therefore, any measure that does not require the use of money must be worth attempting. The local environment usually has something that can be used for learning. Learning resources do not exist only in the form of things, but also in the form of people

who can be invited to share their knowledge, skills and experience with teachers and learners. Teachers, who must first be convinced of the value of doing fieldwork, should be creative, look around and take the initiative.

6.3.1.2 **Improvisation**

Improvising can assume many forms. For example, there are models that can be made using scrap materials or waste materials like old wrappers, tins and containers.

However, these first have to be collected, and the teachers can involve learners in the collection of materials. In the survey, teachers mentioned that learners are capable of collecting resources for the school (Chapter 4). During interviews with learners at case study schools they too indicated that they could contribute resources to the school (Chapter 5, Number 5.3.2).

The training of teachers may also be necessary because improvising may seem an impossible task if one has not had some training in using one's creativity to make something out of nothing.

As a nation we should, however, strive to give the best to our children. We cannot rely on scrap materials and waste matter all the time. Full provision of resources to all the schools should be the goal. We should not be defensive when shortages and needs are pointed out. It is the right thing for dedicated teachers to improvise sometimes, but it should not be the goal. We need to fulfil our responsibility and provide all our schools with high quality education and high quality resources.

6.3.2 Medium-Term: Training, Workshops and Refresher Courses

Training and refresher courses and workshops should be arranged to equip teachers with the necessary skills to develop and use resources effectively. In the surveys and interviews, teachers indicated that they would be pleased to see such training and courses offered. This training would help equip teachers with the knowledge and skills associated with producing, developing and using a variety of resources.

Who should take the responsibility for organising these training courses and workshops? I think both teachers and the Department of Education should assume the responsibility. In the past, teachers have tended to leave this responsibility to the Department of Education. There has been a tendency to wait for the government to do things. This has to change quickly. Individual schools and teacher organisations should take the initiative and involve the Department of Education.

Refresher courses and workshops must be organised on an ongoing basis.

Individual schools can also run their own internal workshops. Guest presenters could be invited or presenters could be chosen from among the teachers themselves.

6.3.3 Long-Term

6.3.3.1 Resource Centres

The creation of a resource centre in a school can make a big difference to the quality of Geography teaching and learning. It could be the responsibility of the school to get the centre started, or it could be the responsibility of both the school and the Education Department.

Since this involves money, the problem of finding funds will have to be resolved. The public schools are the responsibility of the State. The Department of Education should provide schools with buildings. The problem is that the State does not have enough funds and the backlogs are huge and many. In the rural areas the situation is critical, especially in the Northern Province. If schools rely solely on the government, no resource centre will ever be established.

Communities will have to stand up, and through the governing bodies of schools raise funds. The problem is that even ordinary classrooms do not exist. Resource centres become an impossible dream to many schools. Such schools would rather have a classroom than a resource centre.

However, resource centres can become the focal point for learning in schools. The State could create large central resource centres throughout the country from which schools could draw materials, expertise and training for their own local resource centres.

In the United Kingdom, for example, schools get advice about resources from the Information Technology co-ordinator and from Local Resource Centres. In these centres teachers are updated on changes and they receive new resources.

An example of a resource centre was shown in a diagram in Figure 2.1 in Chapter 2.

6.3.3.2 **The Involvement of Various Sectors**

The Departments of Education usually do not have enough money to provide all schools with all the necessary facilities, amenities and resources. Usually the schools in the rural areas are the hardest hit by serious lack and shortages.

Therefore, it is only when every interested sector gets involved and offers whatever they have that we will see changes take place. Parents can get involved through the school

governing bodies that have now been given the powers to raise funds by the State. Parents can be asked to contribute. Negative attitudes and the mentality of dependence must change. For example, some people think that the government must provide everything because they promised free and compulsory education. We know that in the past some communities used to organise themselves and made small financial contributions, baked bricks and built classrooms by themselves. This culture must be revived and encouraged. Some communities are still doing this. For example, in the local weekly newspaper (Mirror, 14 November, 1997) a local community at Thohoyandou made a financial contribution to build three additional classrooms. At a secondary school with 780 learners, 780 parents contributed R100 each and collected a total of R78,000. There was overcrowding at this school with a total enrolment in 1997 of 1018 learners, with only 15 classrooms. Some classrooms had 75 learners apiece.

However, the State should still play a major role and not abdicate its responsibilities. The government should still build classrooms and toilets and provide books, stationery, tables and chairs, water, libraries and sports facilities.

The private sector in the form of big and small businesses should also contribute. For example, they can make donations in kind or in cash. We know that some businesses are doing this, but there are many who are not getting involved, especially those operating in the rural areas. Thus, schools in provinces like the Northern Province remain extremely poor compared to those in large urban areas like Soweto, Khayalitsha and Langa. It is understandable that schools in the urban areas are found near big businesses and factories. Rural businesses like spaza shops and taxis should be encouraged to get involved in serving schools in their own small way. After all, teachers and learners make up a big percentage of their clients. We find many spaza shops near the schools serving teachers and learners. We also understand that these small businesses do not make much money and that they are struggling to survive. However, it would be a useful gesture for taxi associations to, for example, offer schools a free fieldwork trip once a year. A school would appreciate, for example, a spaza shop operating near the school making the gesture of a gift, e.g. in the form of a cheaper learning medium like a globe or a map.

Hardware stores could donate building materials. Members of the community could donate their skills by building for free or for a lower payment.

Bookshops could donate models like globes and maps. Computer shops could donate computers, etc. Unfortunately, none of this is happening because everyone is pleading poverty.

At the same time solutions need to be found for the theft, vandalizing and burglaries that take place in the schools. Equipment that is bought, like TVs, video recorders, and computers are stolen. Windows are broken. There are many cases where the whole school is burned down. What can teachers, learners, parents, communities and the government do about these things? Can the schools and the government afford to hire security guards? Can they afford alarm systems? As we search for solutions to the crisis in our education system, we need constantly to emphasize self-reliance and self-empowerment.

6.4 RECOMMENDED AREAS FOR FURTHER RESEARCH

A research project of this scale cannot investigate every aspect that plays a role or that is intricately involved in the provision, use and development of teaching and learning resources. Among areas that seem deserving of further research are the following:

a) The perceptions of government officials (teachers excluded) about the provisioning of resources. The government usually complains that a huge percentage of funds budgeted for education is used up in paying salaries. We also hear from time to time remarks by government officials to the effect that textbooks or buildings do not teach, only teachers teach, implying that complaints about the poor resourcing of schools are not valid.

b) The involvement of parents and the whole community in the resourcing of schools is another area that requires investigation. Parents in other parts of the country are deeply involved in the life of the schools their children attend. In the rural Northern Province, many parents are illiterate and poor. The attitudes and perceptions of these communities should be investigated. How much do they value schools and education? What role do they think they can play in the resourcing of schools? What is their perception of school ownership? Many of these parents think they are financially and materially poor and illiterate and think the government should provide free and compulsory education as promised them.

c) Another matter worthy of investigation is the correlation between the availability and use of resources. Does availability guarantee use? How much use is made of media in schools that are well resourced? An investigation of this nature could be conducted in schools that are very well resourced. Does availability match delivery? What is the correlation between availability, use of resources and the results of learning?

6.5 LIMITATIONS OF THE STUDY

a) This was a small-scale study and therefore wider aspects, like those raised above, could not be investigated. For example, the perceptions of other people involved with schools, like other teachers in the school, principals, head office officials and parents, were not investigated in this study.

b) The length of time spent by the researcher at case study schools was limited. The researcher visited the schools between March and June. School holidays, examinations and meetings of the teacher organisations fell within this period.

c) During the visits by the researcher, there were many postponements and cancellations of appointments through circumstances beyond the researcher's control.

d) At one of the case study schools the Geography teacher that the researcher worked with was not very co-operative.

e) The methods used by the researcher had in-built limitations and the researcher was inexperienced in the use of most of these methods. Interviewing young learners was difficult. The survey questionnaire return rate was low. When it comes to respondents and participants, the researcher cannot be absolutely certain whether the responses were genuine or falsified, that is, 'acted for the researcher'.

f) The purpose of this study was not statistical generalization. Therefore, the findings of this study may not be generalized to other schools in South Africa, or elsewhere.

6.6 CONCLUSION

South African schools should be a guiding light and shining example in Africa. Our children must be able to compete with the best internationally. How can we make this happen? Our goal is good quality education, with effective teaching and learning in well-resourced schools. Good quality education comes from motivated and dedicated teachers who are well educated in, among other things, the skills of resource production, development and use, and from learners who are motivated to learn, who enjoy and love learning.

This responsibility is not the teachers' and learners' or the government's alone. All of us have a responsibility and a role to play – from the smallest spaza shop at the school gate, or a taxi owner ferrying teachers and learners to school, to the biggest business selling computers and aeroplanes. We can make the resourcing of schools a successful joint venture.

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APPENDIX 1:

SURVEY QUESTIONNAIRE –

SENT OUT TO TARGET POPULATION

QUESTIONNAIRE ON THE AVAILABILITY AND USE OF RESOURCES IN TEACHING AND LEARNING SENIOR PRIMARY GEOGRAPHY

NOTE WELL

1. This questionnaire is to be completed by Geography teachers for Standards 3 and 4.
2. The information supplied is for research purposes. The objective of the research is to investigate the availability and use of resources in senior primary Geography.
3. Please complete all the sections.
4. Try and answer all questions. Please feel free to answer either in English or Tshivenda.
5. You are assured of complete confidentiality.
6. A self-addressed envelope is enclosed for your convenience.
7. Please return the completed questionnaire by not later than _____ _____ to:

   Mr C S Khubana
   PO Box 464
   THOHOYANDOU
   0950
8. Thank you for participating in this exercise.

SECTION A: GENERAL - PERSONAL DATA/BIOGRAPHICAL INFORMATION.
Please answer the questions in Section A by placing a cross (x) in the relevant block.

1.1. Please supply the following personal details:

Official use only

eg Gender	F	1 X	
	M	2	1 - 3
1.2 Which grade/standard do you teach?	Std 3	1	4
	Std 4	2	5
1.3 How many pupils are there in your biggest class? _____			6 7

1.4 How many pupils are there in your smallest class? _____

8 9

1.5. Do your pupils take Geography as one of their subjects?

Yes 1

No 2

10

1.6. Did you take Geography as one of your major subjects for teaching?

Yes 1

No 2

11

1.7. Which certificates/diplomas did you do?

PTC	1	12
JPTD	1	13
SPTD	1	14
JSTC	1	15
STD	1	16
UED	1	17
HED	1	18
OTHER	1	19

1.8. Please state any other certificate or Diploma you have.

_____

1.9. Was Geography one of your method subjects?

Yes 1

No 2

20

Official Use only

1.10. Years of experience as a Geography teacher.

Probationary year	1
1 year	2
2 years	3
3 years	4
4 years	5
more years	6

21

1.11 Which other Geography classes have you taught beside Standards 3,4 and 5?

Std 6	1	22
Std 7	1	23
Std 8	1	24
Std 9	1	25
Std 10	1	26
College of Education	1	27
University	1	28
Technikon		29
Technical College	1	30

31

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1.12. Please indicate any other Geography class you have taught.

_____

SECTION B : RESOURCES AND THE TEACHER

Answer the following questions in the spaces provided:

Resource: What is a resource? A resource is something **used** in teaching and learning to enhance understanding. Resources include a variety of teaching/learning materials (teaching/learning aids).

2.1 Please indicate whether your school has the following. Place an (X) in the relevant blocks.

	Yes 1	No 2			
2.1.1. Electricity			32		
2.1.2. Alternative power eg. Generator			33		
2.1.3. Enough classrooms			34		
2.1.4. Good chalkboards in each classroom			35		
2.1.5. Sufficient chalk			36		
2.1.6. Flannelboards			37		
2.1.7. Duplicating machines eg. Photocopier			38		
2.1.8. School gardens			39		
2.1.9. Playing fields			40		
2.1.10. Toilets			41		
2.1.11. Water			42		

2.2 Put an (X) in the boxes of the items listed below which are available to your as a Geography teacher.

2.2.1. Blank Video Cassettes	1		43		
2.2.2. Prepared Video Cassettes	1		44		
2.2.3. A television set	1		45		
2.2.4. A video recorder	1		46		
2.2.5. A video camera	1		47		
2.2.6. Blank tape recorder cassette	1		48		
2.2.7. Tape recorders	1		49		
2.2.8. Photographic Film	1		50		
2.2.9. A 35mm Camera	1		51		
2.2.10. Prepared photographic slides	1		52		
2.2.11. A sound-tape recorder	1		53		
2.2.12. Prepared overhead transparencies	1		54		
2.2.13. An overhead projector	1		55		
2.2.14. A media or resources centre	1		56		
2.2.15. A Computer	1		57		
2.2.16. Aerial Photographs	1		58		
2.2.17. Maps	1		59		
2.2.18. Pictures/Photographs	1		60		
2.2.19. Atlases	1		61		
2.2.20. Newspapers and Magazines	1		62		
2.2.21. Textbooks	1		63		
2.2.22. Please indicate if you have any other materials not listed above.	1		64		

_____

_____

_____

Official Use Only

2.3 How often do you use the following teaching/learning resources? (Indicate by a (X) in the appropriate box).

	1 OFTEN	2 SELDOM	3 NEVER			
2.3.1. Blank Video Cassettes				65		
2.3.2. Prepared Video Cassettes				66		
2.3.3. A television set				67		
2.3.4. A video recorder				68		
2.3.5. A video camera				69		
2.3.6. Blank tape recorder cassette				70		
2.3.7. Tape recorders				71		
2.3.8. Photographic film				72		
2.3.9. A 35mm camera				73		
2.3.10. Prepared photographic slides				74		
2.3.11. A sound tape recorder				75		
2.3.12. An overhead projector				76		
2.3.13. A media or resources centre				77		
2.3.14. A computer				78		
2.3.15. Aerial photographs				79		
2.3.16. Maps				80		
2.3.17. Pictures/photographs				1		
2.3.18. Newspapers and Magazines				2		
2.3.19. Textbooks				3		
2.3.20. Fieldtrips				4		
2.3.21. Prepared overhead transparencies				5		
2.3.22. Atlases				6		

Official Use only

2.4 List the reasons for using materials and resources in the spaces below:

_____

_____

_____

_____

_____

7		
8		
9		
10		
11		

2.5 Please indicated by an (X) in the appropriate block how often your pupils do the following:

	1 OFTEN	2 SELDOM	3 NEVER			
2.5.1. Visit a Museum				12		
2.5.2 Visit a place of local interest				13		
2.5.3 Field trips in the local area				14		
2.5.4. Field trips to faraway places				15		

2.5.5. Please indicate in the spaces below any other places which your pupils either visit or where they are taken for visits or field trips.

_____

_____

_____

_____

16		
17		
18		
19		
20		

Official Use Only

2.6 Mention the difficulties you have in obtaining materials and resources for use in teaching Geography in the spaces below.

_____

_____

_____

_____

_____

21		
22		
23		
24		
25		

2.7 Suggest ways to overcome difficulties mentioned in 2.6.

_____

_____

_____

_____

_____

26		
27		
28		
29		
30		

2.8. Have you ever attended any course(s) in the development and use of materials and resources?

Yes	1
No	2

31	

2.9 If your answer in 2.8 is Yes, elaborate:

2.9.1 When _____

2.9.2. Where _____

2.9.3. Conducted/offered by whom (name(s)/organisation

_____

_____

_____

32	33	
34	35	
36	37	

2.10. What sort of training in resource development and use would you like to see offered.

_____ 38
_____ 39
_____ 40
_____ 41
_____ 42

3. Besides resources that exist in your classroom, which other resources (exist) can be found in your local area?

_____ 43
_____ 44
_____ 45
_____ 46
_____ 47

SECTION C: PUPILS AND RESOURCES

4. Do your pupils make use of any resources eg. those listed in 2.2 to learn Geography?

Yes	1
No	2
Sometimes	3
I don't know	4

48

5. Which resources do they often make useof (if they do)? Please indicate below.

49		
50		
51		
52		
53		

6. How do they make use of resources mentioned in 5?

54		
55		
56		
57		
58		

7. Do you allow pupils to handle and use resources/media during lessons?

Yes	1	59
No	2	
Sometimes	3	

8. Do your pupils sometimes make or collect materials on their own?

Yes	1	60
No	2	

9. If your answer in 8 is "No", give reasons.

61		
62		
63		
64		
65		

10. Which materials do they make or collect? List them below.

66		
67		
68		
69		
70		

11. Would you like your school to have materials and equipment mentioned in 2.2?

Yes	1	71	
No	2		

12. What prevents your school from acquiring materials and equipment mentioned in 2.2?

72		
73		
74		
75		
76		

13. Would you be able to use materials and equipment mentioned in 2.2 if your school were to acquire them?

Yes	1	77
No	2	
After training	3	

14. Make any comments about "resources" which you think may help this research.

_____

_____

_____

_____

_____

78	
79	
80	
1	
2	

NB. Filling in the following section is optional. (Only if you want to)

Name of teacher: _____

Name of School _____

Address: _____

_____

_____

_____

3	4	5

* *I CAN ASSURE YOU THAT ANSWERS/RESPONSES FROM INDIVIDUAL SCHOOLS SHALL BE KEPT CONFIDENTIAL.*

THANK YOU FOR YOUR ASSISTANCE

APPENDIX 2:

SURVEY QUESTIONNAIRE –

FOLLOW UP LETTER TO TARGET POPULATION

Cell. 0822005816
Tel. 0159-21836
P.O.Box 464
THOHOYANDOU 0950
20 April 1997.

TO:
1. The Principal.
2. Std. 3 and 4 Geography teachers.

A FOLLOW-UP ON THE QUESTIONNAIRE.

Dear colleagues,

Greetings!

I write to you about questionnaires sent you in March 1997:

a) Returned questionnaires.

I would like to express my appreciation and gratitude from the depth of my heart to all those colleagues who returned the questionnaires.Thank you so much for your co-operation!

b) Unreturned questionnaires.

To those colleagues who have not yet returned the questionnaires up to now,I wish to make a plea that you return them even when the due
date has already passed.

If you need help in completing, e.g. when you do not understand what the question is asking, feel free to ask a friend or you can contact me at the telephone numbers indicated above(as long as the responses/answers given in the questionnaires are yours).

I have also explained that you can answer in your home language e.g. Tshivenda, not necessarily in English.

If in the light of all these explanations you still cannot answer the questionnaire, please return it unanswered(although I would very much prefer that you return it with answers).If you feel you cannot answer all the questions, give responses to those questions for which you have answers.In short/brief I want to make you find completing the questionnaire an easier matter.

Thank you again

Yours colleague

Mr C.S.Khubana

SGD.....Khubana 20/04/97.

APPENDIX 3:

QUESTIONNAIRE – COMPLETED BY GEOGRAPHY TEACHERS AT CASE STUDY SCHOOLS

EVALUATION QUESTIONNAIRE:

[Completed by Geography teachers A (at school X) , B and C at school Y , teacher D at school Z did not complete the questionnairel.

Quesion 1 :

How did you feel about the request of the researcher to involve you in his research, e.g. when he asked to observe your lessons/class?

Answers/Comments.

Teacher A : Firstly, when I received his letter, it was difficult for me.I thought, maybe he wo n t benefit anything from me. I also thought, it will be boring. To my surprise, everything was exciting. I find that I was going to be the loser if I had turned down the researcher ´s request.

Teacher B : I felt happy and challenged, as we do n t have the old style inspection, and the legacy is so lenient(these days) in a way that for most of us we happen to relax in our work. Having you. the researcher, boosted me in my subject, and really I could see the culture of learning and teaching coming back. It was marvellous.

Teacher C : I felt delighted and motivated to do my teaching task effectively, so that the observer , or researcher should evaluate me, and gain something and add matter where possible.

Question 2.

Did you and/or your pupils/ learners benefit anything from the researcher ´s visit ?

Answers/Comments.

Teacher A : Yes.

Teacher B : Yes.

Teacher C : Yes.

Question 3.

If your answer in 2 above is "Yes", can you make comments hereunder and specify the benefits?

Answers/Comments.

Teacher A : The researcher helped me with some small maps. I was having a problem with my class: my pupils ca n t draw well. I told him that problem. But to him, it was not a problem, he helped me with those maps.He also helped with some information for different topics. As a teacher, I do n t know everything. He also helped me with some resources for different topics, i.e. human activities. I wish I can work with him forever.

Teacher B : We gained a lot of things, i.e. being involved, pupils could take part in the lessons, the materials that you brought to us assisted a lot.See also answer to 1 above.

Teacher C : As the researcher contributed something to the lessons, children also benefitted from the additional matter e.g. contribution of learning charts and quizz added.

Question 4.

What is it you did not like about the researcher ´s visits?

Answers/Comments.

Teacher A : [Did not answer].

Teacher B :I appreciate them (visits).Only that he did not indicate that he was free to help in teaching the learners from the onset, otherwise it would have been superb to involve him also. Anyway he is good.

Teacher C : I disliked nothing. I hundred percent appreciated the visit as I am aware that changes implemented to our current education are leading us to such a situation, e.g. OBE Education is driving us to such strategies of teaching during the presence of parents and other officials.

Question 5.

What is it you liked about the researcher´s visits ?

Answers/ Comments.

Teacher A : The resaercher was friendly. He is the person who is ready to help a teacher with every problem you can encounter when teaching. He gives me everything I asked him.Up to now, my work is up to date. He makes me to like my subject. Geography is one of the most interesting subjects when teaching it with the help of different resources.

Teacher B : He is so co-opeartive and flexible.

Teacher C : He contributed a lot and was very happy to learn from the teachers, as he made interviews and asked questions where he was not clear.

Question 6.

Do you have any suggestions/recommendations or coments to make to the researcher ?If you have, write them hereunder :

Answers/ Comments.

Teacher A : What I can only say to the researcher is that ,I learned much from him. His research makes a person to work hard with his/her class without encountering problems. It also develops the love for my subject. I benefitted much from him. That ´s why I say I wish the research does not come to an end. The research was perfect.

Teacher B : He is a friendly researcher. It ´s good to have him in ones company. The educators loved him so much.

Teacher C : I feel these types of researches should always be done in schools so that we as teachers should also get help from outsiders. Outsiders should also see in what type of situations we teach in, i.e. no facilities, but we compromise to help children in many ways.

Question 7.

If the researcher were to make a similar request to come back , would you accede/accept or refuse ?

Answers/Comments.

Teacher A : I think I will be much happier if he makes a

request of coming back. I gained a lot from him. He helped me with everything I needed. He is not just an observer, but a helper.

Teacher B : Accept with pleasure !

Teacher C : I would accept the request as it promotes mutual understanding between teacher, researcher and pupils.

APPENDIX 4:

LETTER TO THE PRINCIPALS OF SURVEY SCHOOLS

C.S. Khubana
P.O. Box 464
Thohoyandou, 0950
Tel. 0159-21836
Cell. 082-200-5816

Dear Principal,

QUESTIONNAIRE: AVAILABILITY AND USE OF RESOURCES IN THE TEACHING AND LEARNING OF GEOGRAPHY IN THE SENIOR PRIMARY SCHOOL.

As a teacher-educator I am greatly interested in the education of pupils in the primary school. I would therefore be very grateful if your school would assist me by taking part in a survey which I am conducting as part of my research towards a(n) M.Ed. degree at Rhodes University. The title of my research is: "A CASE STUDY ANALYSIS OF THE ROLE OF RESOURCES IN THE TEACHING AND LEARNING OF SENIOR PRIMARY GEOGRAPHY IN THE NORTHERN PROVINCE".

I hope that the research will make a contribution to the teaching and learning of Geography in the primary school . . . . a section which researchers have sadly neglected. The results of the resaearch, I hope, will have great potential to inform the subject Geography . . . and I think schools and teachers will benefit.

This research, due to the cross-curricular nature of the topic, will also benefit other subjects- especially those which occupy the same learning area with Geography, in the new outcomes-based education.

I would appreciate it if teachers in Standards 3 and 4 would complete the questionnaire as soon as possible. I enclose a stamped, pre-addressed envelope for the return of these questionnaires.

Thank you in anticipation of your assistance,

Yours faithfully,

Christopher Shonisani Khubana.
CSKhubana 21/2/97

TO: 1. The Principal
2. Geography teacher(s) in standards 3 and 4

AVAILABILITY AND USE OF RESOURCES IN THE TEACHING AND LEARNING SENIOR PRIMARY GEOGRAPHY.

REQUEST:Participation of your school in the research .....especially Geography teachers in standards 3 and 4.

Dear colleagues,
I am engaged in a type of educational research known as "ACTION RESEARCH."What is it all about?

What is the purpose or use of this kind of research?
The main purpose of this research is to improve the situation.In this specific case, it is to enhance the teaching and learning of Geography through the use of resources.
Permission has already been received from higher education authorities to allow me to negotiate with principals and teachers and work at their schools(see copies of letters attached from the Regional Office and Area Office).

What do I want or expect?What are we going to be doing?
After your permission or agreement this is what I intend/hope to do at your school:
N.B. I shall not impose anything or somehow interfere in the running of the school or teaching of the classes.I shall always make requests and negotiate any arrangements.

1.Geography teachers(Stds 3 & 4):

I shall request from the teacher(s) latest Geography syllabuses(or we can compare with what I have).
I shall also request the class time table to see when(times/periods)Geography lessons are presented.I shall observe .....not with the purpose or eyes of "inspection" or being "judgemental"(to pass judgement) nor come like a person of authority or expert. I am coming with humility.....as a colleague...ready to learn something from the situation.
I shall conduct interviews and hold discussions with Geography teachers on RESOURCES.My other request is this: as required by the research procedure, I shall have to tape interviews.These interviews shall be transcribed.....and copies of these transcription shall be offered to the teachers to read before the research is finalised.
N.B. Discussions and interviews can take place anytime....anywhere....agreed to by the researcher and the teacher(s) e.g. in the morning before school starts or after school.All these shall be negotiated. Interviews and discussions can be on any lessons....whether taught on that particular day, whether already taught or whether still going to be taught.

2. Std 3 & 4 pupils:
I shall also interview these pupils on the RESOURCES.

3.Other teachers in the school:
The main aim of the "ACTION RESEARCH" I said, is to improve the situation.The topic of this research is cross-curricular, i.e. it relates to the other subjects as well. Therefore I shall also share my knowledge of RESOURCES with the other teachers in the school.....so that I do not only share this knowledge with Geography teachers only.Therefore with their agreement,through the principal, I shall appreciate it if I can be given short time.....anyday....e.g. for about 1 hour to conduct a workshop with all the teachers at the school.
My topic would be:"GEOGRAPHY,RESOURCES AND OUTCOMES - BASED EDUCATION."
[Subtopics: a) Fieldwork in Geography b) Using the local environment as a resource c) resources and multicultural education)]
I hope you will afford me the opportunity to conduct this workshop. My research procedure expects this since the aim of action research is not research for its own sake, but research to improve the situation.

4. The Principal:
Approval to work at the school and arranging the workshop for me at a date/day and venue convenient to the teachers. I think 1 hour can be enough for that.

HOW LONG IS THIS GOING TO LAST?
For as long as both of us ....that is, researcher and teacher(s) want it. However, my University expect me to have completed the work by the end of May 1997.Through negotiating and requests...other arrangements can be made by the researcher and the school....especially the Geography teacher(s) involved.This is something that can be made very flexible.

GENERAL.

a) My role as a researcher is that of participant-observer.Participant observer means that, I need not be a passive observer.....but an active participant.

b) I emphasize that my research at your school shall not interfere with what you normally or usually do on a daily basis.You shall continue your daily activities.I shall be present for Geography lessons.As for discussions and interviews.....these shall happen at arranged/negotiated times.

c)Confidentiality: I want to assure you that in this research, what you do or say shall be kept confidential.This is the ethic of research: unless you , yourself, specifically want it made known.....everything shall be kept confidential(secret).We have a way of doing this in research e.g. by the use of pseudo-names.

THANK YOU FOR YOUR UNDERSTANDING.
I AM LOOKING FORWARD TO WORKING WITH YOU FOR SOME WEEKS FROM NOW!

Mr S.C.Khubana(SGD.....School area.....)
Tel. 0159-21836 CELL: 0822005816.

APPENDIX 5:

LETTER TO THE GEOGRAPHY TEACHERS AT SURVEY SCHOOLS

C.S. Khubana
P.O. Box 464
Thohoyandou, 0950
Tel. 0159-21836
Cell. 082-200-5816

TO: GEOGRAPHY TEACHERS IN STANDARDS 3 AND 4

Dear Colleagues,

QUESTIONNAIRE: AVAILABILITY AND USE OF RESOURCES IN THE TEACHING AND LEARNING OF GEOGRAPHY IN THE SENIOR PRIMARY SCHOOL.

Greetings!

As a teacher-educator I am greatly interested in the education of pupils in the primary school. I would therefore be very grateful if your school would assist me by taking part in a survey which I am conducting as part of my research towards a(n) M.Ed. degree at Rhodes University. The title of my research is: "A CASE STUDY ANALYSIS OF THE ROLE OF RESOURCES IN THE TEACHING AND LEARNING OF SENIOR PRIMARY GEOGRAPHY IN THE NORTHERN PROVINCE".

I would therefore sincerely appreciate it if you would spend some time in answering this questionnaire.

I realize that teachers are busy, and consequently tried to make the questionnaire short so that it would not place too much of a burden on you. I have even enclosed a stamped, self addressed envelope for the return of the completed questionnaire.

Since teachers now have an influence on decisions made about curricula, your views on the availability and use of resources in our schools can influence education authorities and other stake holders to improve the situation where necessary.

I hope that the research will make a contribution to the teaching and learning of Geography in the primary school . . . . a section which researchers have sadly neglected. The results of the resaearch, I hope, will have great potential to inform the subject Geography . . . and I think schools and teachers will benefit.

This research, due to the cross-curricular nature of the topic, will also benefit other subjects- especially those which occupy the same learning area with Geography, in the new outcomes-based education.

I would appreciate it if teachers in Standards 3 and 4 would complete the questionnaire as soon as possible. I enclose a stamped, pre-addressed envelope for the return of these questionnaires.

I would like to assure you that the findings from individual schools will be kept confidential. only a general picture will emerge from the findings.

Thank you in anticipation of your assistance,

Yours faithfully,

Christopher Shonisani Khubana.
CS Khubana 21/2/97

N.B. **VERY IMPORTANT: ON THE QUESTIONNAIRE**

PLEASE DO NOT WRITE ANYTHING ON THE BLOCKS ON YOUR EXTREME RIGHT INDICATED "OFFICIAL USE ONLY". ANSWER ONLY ON THE BLOCKS OR SPACES PROVIDED FOR YOU.

APPENDIX 6:

LETTER OF PERMISSION FROM THOHOYANDOU REGIONAL OFFICE (DEPARTMENT OF EDUCATION, SPORTS AND CULTURE)

Northern Transvaal Province

EDUCATION, ARTS, CULTURE & SPORTS

TEL: (21031)Ext.

FAX: (0159)

REFERENCE NO.: H/17/2

ENQUIRIES: G.N. MAHLALE

Private Bag X 2250
SIBASA
0970

12 FEBRUARY 1997

Mr C.S. Khubana
P.O. Box 464
THOHOYANDOU

Sir

PERMISSION TO DO RESEARCH IN THOHOYANDOU AREA

1. The matter above refers.
2. This office has no objection to your request to do M.Ed research in schools in Thohoyandou.
3. Your co-operation is appreciated.

REGIONAL DIRECTOR: EDUCATION AND CULTURE

APPENDIX 7:

LETTER OF PERMISSION FROM THOHOYANDOU INSPECTION OFFICE

Approved. [illegible] 14/02/97. Copy to Circuits please.

Tel. 0159-21836
P.O.Box 464
THOHOYANDOU 0950

The AREA MANAGER AND CIRCUIT INSPECTORS.
Dept of Education, Sports & Culture
NORTHERN PROVINCE
P/Bag X2250
SIBASA 0950

Dear Sir

REQUEST TO DO M.Ed RESEARCH IN YOUR SCHOOLS (THOHOYANDOU AREA).

I request permission to conduct research in your schools....in the Thohoyandou AREA only.

I have to conduct this research for my M.Ed degree for which I enrolled at Rhodes University, Grahamstown. The topic of my research is:" A CASE STUDY ANALYSIS OF THE ROLE OF RESOURCES IN THE TEACHING AND LEARNING OF SENIOR PRIMARY GEOGRAPHY IN THE NORTHERN PROVINCE."This topic has been approved by the University.

The research, I hope, will be of value in that effective use of resources can enhance the teaching and learning of Geography.
After your permission, I will consult with the principals and teachers of the schools concerned. (Kindly give me your written permission). I intend sending questionnaires to all schools with Std 3 and 4 in this circuit (Enclosed find a copy of this questionnaire).
However, the indepth research shall be done with only 3 sample schools in the circuit.
Thanking you in anticipation

Yours faithfully

Mr C.S.Khubana
SGD...CSKhubana..14/02/97

APPENDIX 8:

LETTER INVITING TEACHERS (STAFF) AT SCHOOL X

TO A WORKSHOP MEETING

CELL. 0822005816
TEL. 0159-21836
P.O. Box 464
THOHOYANDOU 0950

Dear Collegue

INVITATION TO A MEETING.

I hereby warmly invite you to a meeting at which I shall be sharing with you on the topic of "RESOURCES OF TEACHING AND LEARNING."
You are well aware that this topic is important whatever the subject/learning area involved.Whatever is taught or learned, it cannot take place effectively without resources.
Even in the **new outcomes based education**, the value of resources cannot be overemphasized.
Therefore, come, let us share ideas and knowledge.

DATE:
VENUE:
TIME:

Thank you

Mr C.S. Khubana(guest presenter)

APPENDIX 9:

EVALUATION QUESTIONNAIRE COMPLETED BY THE TEACHERS AT CASE STUDY SCHOOLS

EVALUATION FORM:

Find here a form which I am requesting you to complete.
It is an evaluation form of my visit.Kindly complete it as honestly as possible. Answer questions on the form itself. I shall come and collect the form later because I want to give you enough to complete it. I do n t want to put any pressure to you.
Thank you for completing the form.I think it is the last form for you to complete for me (the researcher):

1. How did you feel about the request of the researcher to involve you in his research e.g. when he asked to observe your class/lessons?
Answer/Comments:.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

2.Did you and/or your pupils/learners benefit anything from the researcher's visit?
Yes

No

Do not know

No comments

3.If your answer in 2 above is "yes", can you make comments hereunder and specify the benefits:.....

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4. What is it you did not like about the researcher's visits?:.....

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5.What is it you liked about the researcher' s visits?.....

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6.Do you have any suggestions/recommendations or comments to make to the researcher? If you have, write them hereunder:.....

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7.If the researcher were to make a similar request to come back, would you accede/accept or refuse?.....

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APPENDIX 10:

LETTER THANKING THE PRINCIPAL AND GEOGRAPHY TEACHERS OF CASE STUDY SCHOOLS

CELL: 0822005816
Tel. 0159-21836
P.O. Box 464
THOHOYANDOU 0950
03 June 1997.

Dear Sir,

I write to inform you that my visits to you and your pupils have come to an end. I am about to return to the University.

I wish to say "Thank you very much" for accepting my request to involve you and your class in my research. You have been so good to me. You were very kind, very good and very co-operative. Thank you again.
I learned some things during my stay/visits at your school.
The kind of research I am doing makes me, the researcher a co-learner. Therefore I am not a know-all or a source of all knowledge. What happens is that we share knowledge and experiences. We learn from each other. I learned something from you.....and I think you also learned something from me.
I want to assure you that this is not the end of our association but the beginning. What I mean is that if I come across something which I think will be of value to you, to the pupils or to the school, I shall bring it or send it to you.

Thank you
Mr C.S.Khubana
(Researcher).
SGD....C.S.Khubana 03/06/97

APPENDIX 11:

INTERVIEW: GEOGRAPHY TEACHERS AT CASE STUDY SCHOOLS: SAMPLE QUESTIONS

A SAMPLE OF QUESTIONS ASKED THE GEOGRAPHY LEARNERS DURING THE INTERIEW.

1. When you are learning, do you. learn better when you are only told about something or when you are told and shown the real thing?

2.Which toys do you play with at home?

3. Which games do you enjoy playing the most ?

4.Do you sometimes bring to class learning materials?
If so, which?
If not, is it possible for you to bring to class any learning materials the class educator can ask you to bring?
5. Do you sometimes visit places with your educators ?
If so, where ? And what did you learn during those visits?
6. Do you sometimes visit places with your parents?
If so,where? And what did you learn during those visits?

A SAMPLE OF QUESTIONS ASKED GEOGRAPHY EDUCATORS DURING THE INTERVIEWS.

1.How big are your class sizez?
2.Do you use textbooks in your teaching?
If so, what are the titles of the textbooks?
And how do you use the textbooks (what for)?
Who chose the textbooks?
Do learners make use of atlases?
3.Do you have a Geography classroom, or do you share and rotate classrooms?

4.Is it easy or difficult for you to obtain teaching-learning resources ? Please, explain.

5.Do you know where (places) you can get the various resources for teaching and learning?

6.Do you take out your learners for fieldwork and school trips?
Where do you go?

7. Do you have a place where learning equipments are stored/displayed e.g. Media Centre, Library or store-room ?

8. What is your opinion about using hi-tech equipment like TV/VCR and computers, for learning?

A SAMPLE OF QUESTIONS ASKED GEOGRAPHY EDUCATORS DURING THE INTERVIEWS.

1.How big are your class sizez?
2.Do you use textbooks in your teaching?
If so, what are the titles of the textbooks?
And how do you use the textbooks (what for)?
Who chose the textbooks?
Do learners make use of atlases?
3.Do you have a Geography classroom, or do you share and rotate classrooms?

4.Is it easy or difficult for you to obtain teaching-learning resources ? Please, explain.

5.Do you know where (places) you can get the various resources for teaching and learning?

6.Do you take out your learners for fieldwork and school trips?
Where do you go?

7. Do you have a place where learning equipments are stored/displayed e.g. Media Centre, Library or store-room ?

8. What is your opinion about using hi-tech equipment like TV/VCR and computers, for learning?

APPENDIX 12:

INTERVIEW: LEARNERS AT CASE STUDY SCHOOLS:

SAMPLE QUESTIONS

A SAMPLE OF QUESTIONS ASKED THE GEOGRAPHY LEARNERS DURING THE INTERIEW.

1. When you are learning, do you learn better when you are only told about something or when you are told and shown the real thing?

2.Which toys do you play with at home?

3. Which games do you enjoy playing the most ?

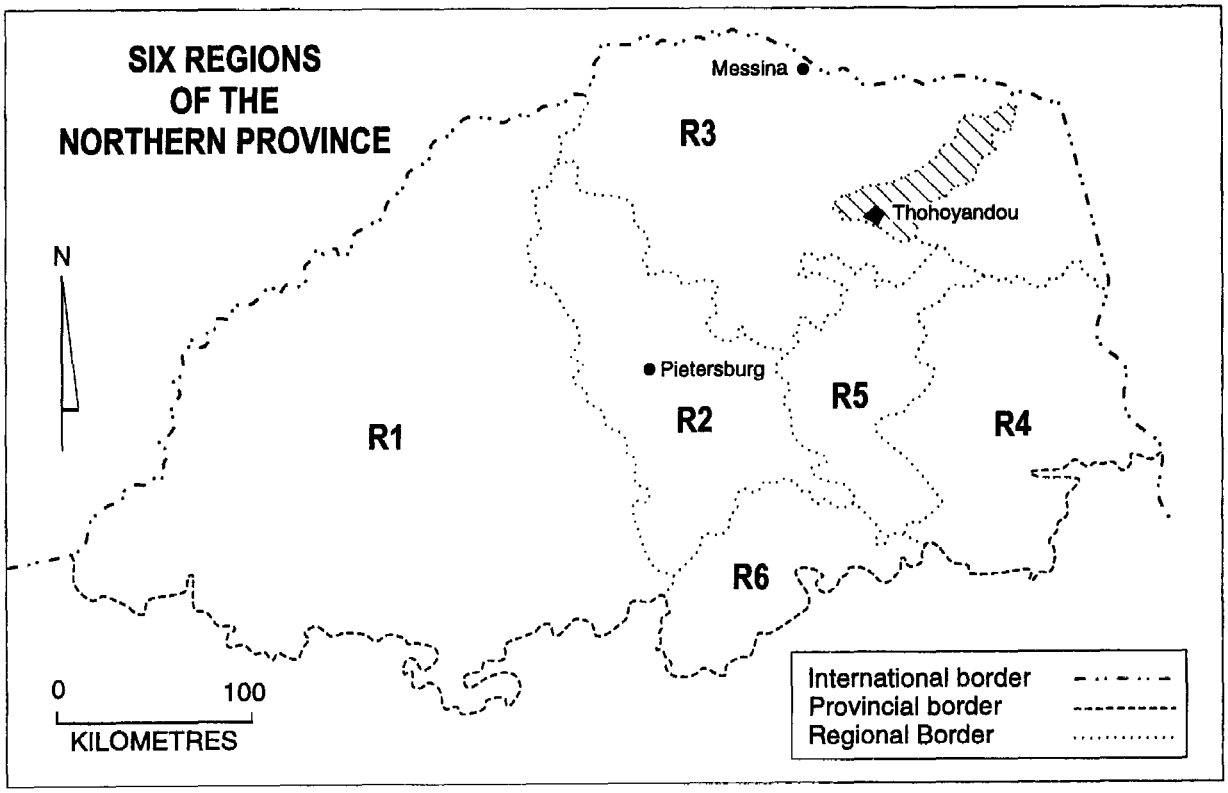
4.Do you sometimes bring to class learning materials?
If so, which?
If not, is it possible for you to bring to class any learning materials the class educator can ask you to bring?

5. Do you sometimes visit places with your educators ?
If so, where ? And what did you learn during those visits?

6. Do you sometimes visit places with your parents?
If so,where? And what did you learn during those visits?

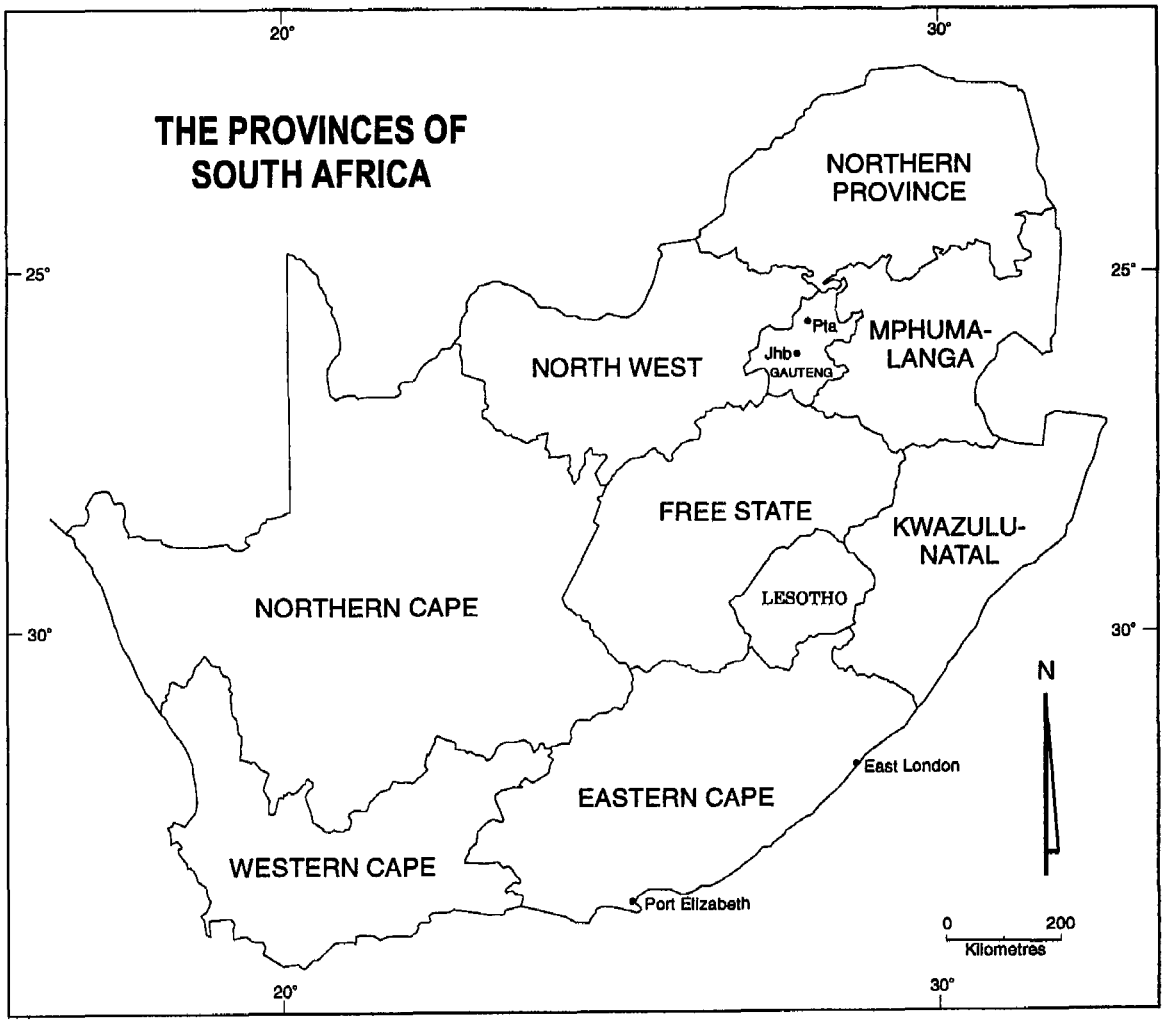
APPENDIX 13:

MAP SHOWING NORTHERN PROVINCE REGIONS AND LOCATING THE AREA WHERE THE CASE STUDY RESEARCH TOOK PLACE (THOHOYANDOU INSPECTION AREA)


SIX REGIONS
OF THE
NORTHERN PROVINCE
Messina
R3
Thohoyandou
N
Pietersburg
R2
R5
R4
R1
R6
0
100
KILOMETRES
International border
Provincial border
Regional Border

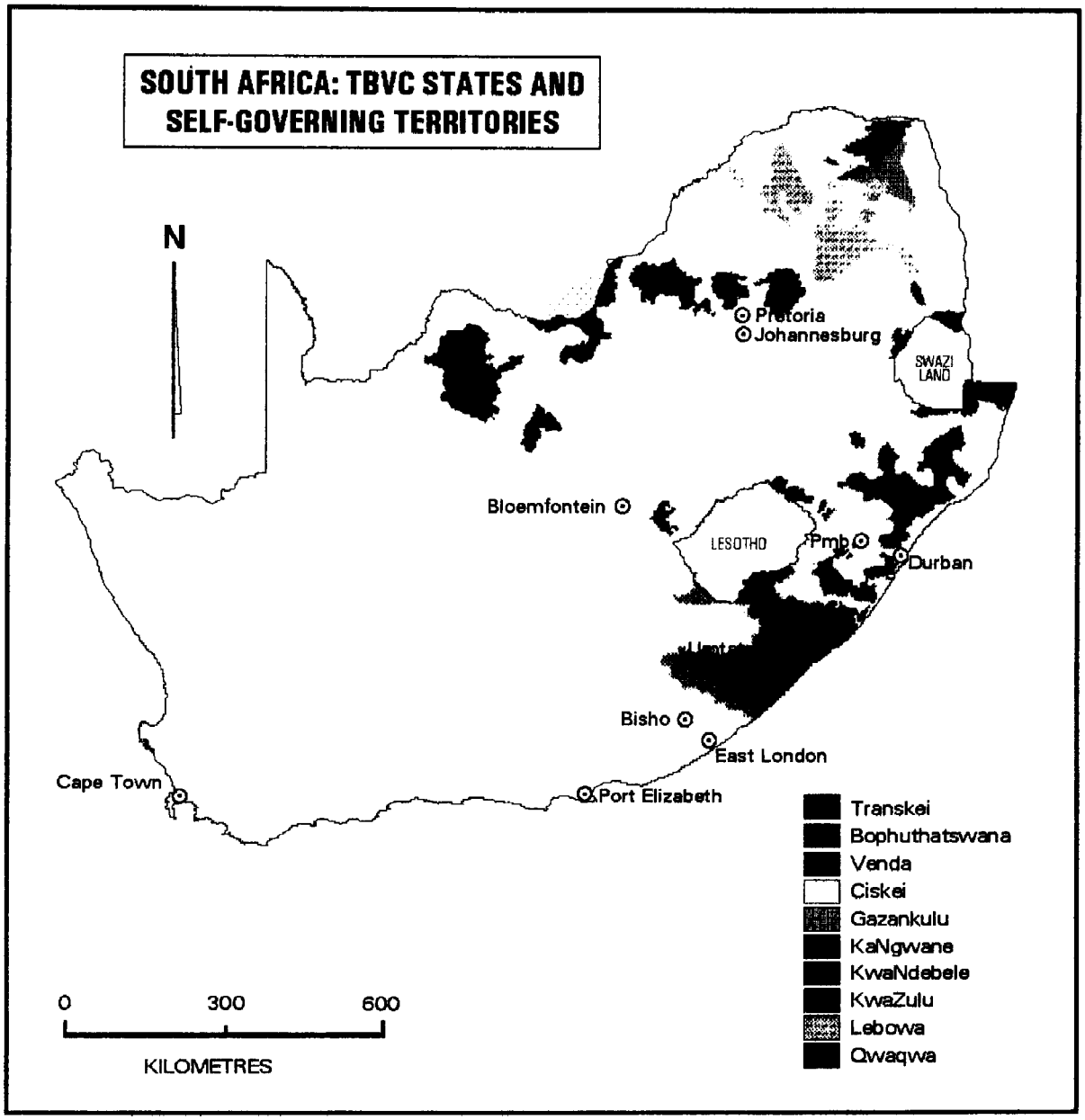
APPENDIX 14:

MAP SHOWING THE BOUNDARIES OF THE NINE PROVINCES OF SOUTH AFRICA


THE PROVINCES OF SOUTH AFRICA
20°
30°
25°
30°
NORTHERN PROVINCE
MPHUMA-LANGA
Pta
Jhb
GAUTENG
NORTH WEST
FREE STATE
KWAZULU-NATAL
LESOTHO
NORTHERN CAPE
EASTERN CAPE
East London
WESTERN CAPE
Port Elizabeth
N
0
200
Kilometres

APPENDIX 15:

MAP SHOWING THE BOUNDARIES OF THE FORMER HOMELANDS AND 'INDEPENDENT STATES'


SOUTH AFRICA: TBVC STATES AND SELF-GOVERNING TERRITORIES
N
Pretoria
Johannesburg
SWAZI LAND
Bloemfontein
LESOTHO
Pmb
Durban
Bisho
East London
Cape Town
Port Elizabeth
Transkei
Bophuthatswana
Venda
Ciskei
Gazankulu
KaNgwane
KwaNdebele
KwaZulu
Lebowa
Qwaqwa
0
300
600
KILOMETRES

APPENDIX 16:

FOLLOW UP LETTER TO TEACHERS AT CASE STUDY SCHOOLS

Mr C.S.Khubana
c/o Ursula van Harmelen
Department of Education
Rhodes University.
P.O.Box 94
GRAHAMSTOWN
6140.
20 August 1997..

The Geography educator
Grade 5 and 6

Dear Sir/ Madam,
I write to first again express my appreciation for the manner in which you co-operated with me when I came to your school to do research.
I read the evaluation questionnaire that I asked you to complete at the end of my visit. I was pleased by the comments and the remarks there.

Secondly, I hope you have been receiving some reading material I have been sending to you. When I come across something that I think may be useful to you as an educator, and to your learners I always feel I must send it to you. I shall continue sending you whatever I think is of value when I come across it.
Lastly, I would like to know about anything you acquired or did since I visited you. For example, I want to know whether you bought anything or collected anything or made anything or visited any place with learners or did any field work.In other words, I want to know if there is any gain you acquired in terms of resources since I visited you.What is it you acquired or collected or bought or did?I shall appreciate receiving a response from you. To make that response easier and less expensive, I am enclosing this envelope addressed to me, so that what you will do is simply to write a short answer on the spaces provided and drop the letter at the post office.
I hope, like in the past, I shall get co-operation from you.Even if you have not done anything yet, do n t be ashamed to send me a reply, because I also know that time was very short and all the stayaways and so forth.
Thank you again
Mr C.S. Khubana
CELL. 0822005816.
SGD...Cskhubana.....

APPENDIX 17:

FOLLOW UP QUESTIONNAIRE COMPLETED BY TEACHERS

AT CASE STUDY SCHOOLS

A REPLY:
MR KHUBANA C.S.

RESOURCES ACQUIRED,COLLECTED,BOUGHT OR MADE OR PLACES VISITED OR FIELDWORK DONE SINCE YOU VISITED OUR SCHOOL.

. a) We acquired/bought/collected/made the following things:
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b) We have not yet acquired/bought/collected/made anything because.....
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.....but we are planning or thinking of
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c) Any other remarks you want to write, write them hereunder:.....
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