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THE TEXTBOOK AS A MAJOR SOURCE OF DIFFICULTY
IN THE TEACHING AND LEARNING OF GEOGRAPHY
THROUGH THE MEDIUM OF ENGLISH IN STANDARD 3
IN BLACK PRIMARY SCHOOLS

THESIS

Submitted in Fulfilment of the
Requirements for the Degree of
MASTER OF ARTS
(English Second Language)
of Rhodes University

by

DAVID PATRICK LANGHAN

December 1990



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ABSTRACT

This dissertation provides evidence to suggest that teaching/learning difficulties with geography in Std 3 are largely attributable to textbooks which fail as well constructed discourse and include uninterpretable illustrations.

The discourse properties most likely to affect the readability of textbooks intended for ESL/EFL pupils are identified. Selected passages from two widely used Std 3 geography textbooks are analysed in terms of these properties, and are shown to fail extensively as well constructed discourse. Following classroom observation and informal interviews which confirmed the inappropriacy of the texts for Std 3 pupils, the passages were re-written, following the necessary properties of well constructed expository discourse.

The readability of these two sets of texts was then tested on a group of nine Std 3 teachers in two structured interviews. The findings reveal that the re-written passages are significantly more readable than the textbook passages. Recommendations that affect education authorities, curriculum designers, syllabus makers, textbook authors, publishers and teacher training colleges are provided.

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DECLARATION

I, David Patrick Langan, hereby declare that this dissertation is my own original work, completed under the supervision of Professor L. W. Lanham, Molteno Project, ISEA, Rhodes University.


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DAVID PATRICK LANGHAN

December 1990

GLOSSARY

EFL/FL	English foreign language
ESL	English second language
HPS	Higher Primary School
JPS	Junior Primary School
L1	First language
L2	Second language
MT	Mother-tongue

CHAPTER ONE THE CONTEXT

Introduction

Black primary school children in South Africa begin their education through the medium of their mother-tongue; the medium of instruction for the four years of their Junior Primary schooling (i.e. to the end of Std 2). In the second year of school, before learning skills have properly been established in the mother-tongue, English is introduced as a curricular subject and usually taught by non-native speakers. During the three years, Sub B to Std 2, the average pupil will receive little more than 365 hours of what is often less than adequate formal English instruction (van Rooyen, 1990:1). By the end of Std 2, Junior Primary pupils are assumed to have reached a state of readiness which will enable them to cope with English medium instruction in Std 3, the first year of the Higher Primary phase. That is, it is assumed that pupils' English competence is such that they are able to learn content subjects (Maths, General Science, History, Geography and Health Education), through the medium of English with no preparation other than the formal English instruction received during the previous three years.

This assumption has been seriously challenged by recent research. Lanham, for instance, argues that what is known of English by pupils in their first year of English medium instruction:

... is a product not of natural assimilation, but of being taught it in the previous three years of schooling. For the great majority of (black) primary school children, English learnt in the classroom lacks any sustaining environment outside the school; English is, in other words, a foreign language.
Lanham (1986:1)

The need for further research in the field of Primary school English medium content subject instruction is highlighted by the fact that in the last 20 years, very little South African research has been focused at this level. This is mainly due to the fact that education departments and private sector employers have tended to focus attention and resources at the secondary school level. This, in an extended but largely unsuccessful attempt to reduce black matriculation failure rates and improve school leavers' qualifications. Consistently high failure rates

suggest that attempts to improve English and English medium instruction at the secondary school level are largely remedial and of limited value.

Recent South African research, however, reveals that English medium teaching and learning in black primary schools is as seriously in need of attention as it is in secondary schools (Grossman, 1986; Burroughs, 1987; Kroes, 1987; Lanham, 1986, 1987; Macdonald, 1986, 1987, 1990; Meyer, 1989, and van Rooyen, 1990: see chapter 2). These findings are particularly significant since crucial foundations for the development of linguistic and cognitive skills are laid in the primary school. It follows then, that if foundations are not adequately laid and skills not properly developed in the primary school, there will be a mismatch between pupils' competence and the demands of English medium secondary schooling (see Weimann, 1986 and Pillay, 1989).

It is significant for this study that during the last five years, attention has been focused on the primary school and that some recent South African research identifies existing prescribed content subject textbooks as important contributors to the difficulties faced by Std 3 pupils. Lanham (1986), Burroughs (1987) and Meyer (1989) have examined selected Std 3 textbooks from various perspectives and conclude that such textbooks are likely to create serious reading and comprehension difficulties for young second language readers. Such texts are therefore hardly likely to facilitate learning through the medium of English.

The aims of the study

Since some recent South African research identifies existing textbooks as likely contributors to the learning difficulties in the first year of English medium instruction, it is the aim of this research to attempt to determine the extent of the influence of the textbook on the teaching/learning process in the primary school classroom. In addition, because most of the relevant research analyses textbooks in isolation from the reader, and hypothesizes about expected learner difficulties; this study attempts to establish actual causes of difficulty encountered by readers using such textbooks.

More specifically, the three main aims of the research are:

- 1) To determine the extent of Std 3 geography pupils' and teachers' difficulties in using selected geography textbooks.
- 2) To identify actual causes of difficulty for Std 3 geography textbook users. (In this regard, the reader, the text and the reader-text interaction are addressed.)
- 3) To show that re-written texts which take users' identified difficulties into account, facilitate reading and comprehension and are therefore likely to improve the quality of teaching and learning through the medium of English.

CHAPTER TWO LITERATURE SURVEY

INTRODUCTION

This chapter is divided into five main sections. In the first section, a discussion of recent research on the first year of English medium instruction in black primary schools in South Africa expands on the context already set in Chapter One. Section Two provides an overview of the development of second language reading theory and focuses on current issues and concerns in the field relevant to this study. In Section Three, the reader's role in the reading process is examined by considering both cognitive reading strategies and the special cognitive demands of the study of geography.

Section Four introduces the focus on the text in the reading process. In this section, approaches to the assessment of a text's readability are examined. In Section Five, five dimensions of the readability of expository texts are analysed in detail.

Chapter Two is concluded by a summary of the factors affecting the readability of expository texts intended for young ESL readers.

SECTION 1

PRIMARY SCHOOL TEXTBOOKS AND THEIR READERS

Over the last twenty years, a number of American and European studies have drawn attention to mismatches between primary school content subject textbooks and the linguistic and cognitive competencies of the English first and second language children for whom they are intended. (See Durojaiye, 1974; Rosen, 1979; Meyer, Brand and Bluth, 1980; Taylor, 1980, 1982, 1983; Wegerhoff, 1981; McGee, 1982; Williams and Dallas, 1984; Harlen, 1985; Kinney, 1985; Elliot et al, 1986; Perera, 1986; Scruggs, 1988.) Given that Hurd (1988:25) reports that there are few differences between textbooks published in the 1960's and their later editions published in the late 1970's and early 1980's, it is not unrealistic to assume that a significant textbook-reader mismatch still exists in most countries in which the above studies have been conducted. It is probably also safe to assume, given the relative recency of some of the above studies, that little has been done to resolve this mismatch.

Although fairly extensive research has been done in this field in America and Europe, in South Africa, formal research into the problems associated with content subject textbooks and English medium instruction in the Junior Secondary and Primary schools was virtually non-existent until 1980 when Rogan and A. Macdonald investigated problems associated with science teaching in the Junior Secondary school. More recently, C Macdonald (1985-1990) has conducted valuable Primary school research for the HSRC in Transvaal and Bophuthatswana schools. The following review of recent South African research is intended to show that the textbook-reader mismatch is significant in South African black primary schools; and that there is an urgent need for further research in this area.

REVIEW OF RECENT SOUTH AFRICAN RESEARCH

Macdonald (1985, 1986) was among the first South African researchers to draw attention to what have subsequently been recognised as serious problems in the Higher Primary phase of black pupils' education. These are: "that the standard of English that Std 3 children can control is

poor, and that they are far less capable of handling content subjects such as geography, general science and mathematics through English, than through their mother-tongue" (1986:2). Her research indicates that the performance of Std 3 pupils in content subjects is inhibited at least in part by: i) an inability to deal with English texts, and ii) instruction through the medium of English. Moreover, she reports, there is a complex relationship between language medium and the pupils' conceptual understanding of the content of various subjects, which further compounds their linguistic problems.

More recent research by Macdonald and others continues to provide evidence in support of her earlier findings, and is reviewed below under the following headings:

The first year of English medium instruction.

Textbooks in the first year of English medium instruction.

Teaching and learning practice in the English medium classroom.

Other issues in early English medium classes.

The first year of English medium instruction

In Chapter 1 it was pointed out that the first four years of a black primary school child's education take place through the medium of the mother-tongue. During this time the average pupil receives roughly 365 hours of formal English instruction (van Rooyen, 1990:1) by non-native speakers, whose English competence is often inadequate for the task.

In the fifth year of school, English becomes the official medium of instruction and pupils are assumed to have reached a level of competence that will enable them to cope with reading and instruction in the new medium in all content subjects. Evidence from Macdonald and van Rooyen's (1985-1990) Transvaal and Bophuthatswana research suggests that this is in fact not the case. Macdonald (1986 and 1990; but see also Rodseth 1978), suggests that young black pupils moving from the vernacular to English medium instruction may well not be functionally literate in their mother-tongue.

If this is the case, not only will the young learners not have acquired sufficient linguistic skills in their mother-tongue to facilitate the learning of a second language; but they will also not have achieved sufficient English competence to be able to cope with English medium instruction. Macdonald (1987:3) points out that children may have learnt to read English with some success by this stage, but even if they are competent at the level of the Std 2 English syllabus, this is inadequate preparation for the shock of the transition in Std 3. van Rooyen (1990:3) confirms these views and adds that the gap between the English subject competence ideally held by children at the end of Std 2, and the competence required for meaningful use of texts in Std 3, appears to be too great for any black child to bridge; given the present resources and other constraints within the education system.

Textbooks in the first year of English medium instruction

Macdonald, in her study of General Science textbooks (1986:5), reports that in addition to the learning difficulties faced by black children due to their poorly developed language competence; the quality of the content subject textbooks they are required to use is equally likely to be a cause of learning difficulty. Also, in Std 3 the children are exposed to expository texts for the first time in their school experience: they receive up to five textbooks, each up to 100 pages in length. Apart from the unfamiliar textual conventions in such texts, the children face at least three other obstacles: 1) difficult grammatical constructions; 2) a "veritable mountain of vocabulary", moving from a maximum expected vocabulary of 700 English words in Std 2, to a vocabulary of approximately 7000 words demanded by the Std 3 textbooks; and 3) textbooks which are generally badly constructed (see also Lanham 1986 and Meyer 1989). According to Macdonald (1986:4): "The child's task appears formidable, if not impossible". It is not surprising therefore that in her research, she found that "children's failure to grasp the language of the simplest and best written lessons in a prescribed content subject textbook probably indicates that they were unable to make any real use of their textbook, even with their teacher's aid" (p2).

Research on textbooks for other content subjects has revealed similar evidence. For example, Grossman (1986:45) cites Reid and Hreska's review

of primary school mathematics texts, which suggests that "the directions, explanations and word problems (in these texts), use language that may not necessarily coincide with the reading age of the child for whom it is intended". Kroes (1986:6,10) notes that content subject textbooks are written in English that is "far too difficult for the target group", and that the visual material is "unsuitable". Burroughs (1986:1,2) in her study of prescribed geography texts found an "assumed level of sophistication that could scarcely be expected of home-language speakers (of English) in Std 3, let alone pupils who are working in a second language". She argues that texts of such complexity "fail to ease the transfer from one language medium to another..."

Lanham's (1986:8,9) examination of the reading in English to which black South African primary school children are exposed in content subject (or expository) texts; shows much of it to fail as well constructed text. He points out that due apparently, to "erroneous beliefs regarding simplification of text for second-language readers, a commitment to drill-like repetitions as a teaching technique, and regrettably, obvious haste in preparation"; texts are often difficult to process following strategies which amount to the cognitive basis of reading.

The evidence cited points to a serious mismatch between difficulty levels of textbooks intended for the first year of English medium instruction and the actual competence of the children for whom they are intended. Since what little empirical research has been done in this field has been confined to only a few schools in Bophuthatswana and around Pretoria in the Transvaal, there is would seem to be insufficient evidence to suggest that the findings of Macdonald, van Rooyen and Burroughs are generalizable in southern Africa as a whole. However, if it can be shown that their findings are true of black primary schools in other parts of southern Africa, the possible implications of such a mismatch are extremely serious, as will be shown in the brief discussion below.

Teaching and learning practice in the English medium classroom

Burroughs (1986:2) and Macdonald (1987:3) report that the rote-rhythm technique is the norm in the Std 3 content subject classrooms they have observed. What this means, is that teachers provide information which

pupils memorize and reproduce without necessarily comprehending. The emphasis is on accurate recall of memorized information. Macdonald reports that she has "not yet observed a Std 3 child produce a novel sentence in English in a classroom situation, only the language of the teacher or... of the text-book". She suggests that there seem to be two likely explanations for the rote-rhythm technique. The first is that the practice has deep cultural roots, and the second is that textbooks which are above the competence levels of the users "impose" the rote learning style.

i) Rote-learning as a cultural style

In cultures with an oral tradition, such as the African culture, knowledge is transmitted from "above", with little questioning from "below" (Ellis 1987:85-89). It follows then, that teachers' assumptions about communication, provide a framework in which we can understand how beliefs about knowledge relate to the roles assigned to teachers and pupils in teaching and learning (see Barnes and Shemilt, 1974:224; and Macdonald, 1987:1). In other words, the teacher's view of knowledge and learning determines what happens in the classroom, and becomes available to be learnt. In an interesting British survey on this topic, Barnes and Shemilt (1974:223) found that most teachers in their survey of 125 teachers, fell into two main categories, namely: Transmission teachers and Interpretation teachers.

They suggest that contrary beliefs about what constitutes teaching and learning, underlie these views of classroom communication. Below is their hypothetical reconstruction of these beliefs.

The Transmission teacher:

- (1) believes knowledge to exist in the form of public disciplines which include content and criteria of performance;
- (2) values the learners' performances insofar as they conform to the criteria of the discipline;
- (3) perceives the teacher's task to be the evaluation and correction of the learner's performance, according to criteria of which he is the guardian;
- (4) perceives the learner as an uninformed acolyte for whom access to knowledge will be difficult since he must qualify himself through tests of appropriate performance.

The Interpretation teacher:

- (1) believes knowledge to exist in the knower's ability to organise thought and action;
- (2) values the learner's commitment to interpreting reality, so that criteria arise as much from the learner as from the teacher;
- (3) perceives the teacher's task to be the setting up of a dialogue in which the learner can reshape his knowledge through interaction with others;
- (4) perceives the learner as already possessing systematic and relevant knowledge, and the means of reshaping that knowledge.

While on the one hand, their hypothetical reconstruction suggests that Interpretation teachers, (who perceive little or no barrier between school knowledge and everyday knowledge), will tend to allow their pupils to have some part in determining what counts as knowledge in their lessons. On the other hand, it suggests that Transmission teachers' views of their subject matter (as public, and as clearly differentiated from everyday knowledge and from other subjects), will result in the exclusion of pupils from the process of formulating knowledge. They also found that Transmission teachers value writing highly, as a means of recording and memorizing information and as a source of feedback about how much their pupils remember and understand. They believe that their task, when they receive pupil's work, is primarily to correct errors and assess it, and thereafter to hand the work back without further comment (p266).

Macdonald and Ellis suggest that the oral cultural tradition of the African teacher, together with its implicit views of knowledge, tends very strongly towards Barnes and Shemilt's Transmission view of teaching and learning.

ii) Rote-learning as a response to poor texts

While it appears likely that there is some kind of affinity between the culture of the "Transmission" classroom and the traditional views of knowledge, learning and authority, still operative in African culture; there is evidence which suggests that prescribed textbooks may be an equally important factor in determining the teacher's preferred style.

Lanham (1986:9), for example, suggests that poor texts may be contributors to black children's present tendencies to write in terms of disjoint, propositionally jumbled sentences, and also to rely upon rote learning. He argues that "learning by rote may be the only way the child has of remembering the content" of poorly constructed texts. This view is confirmed by Nuttall and Young (1989:224):

The less well written the text, the greater will be the tendency to reproduce unselectively and uncritically, large sections of text which appear to be helpful in answering the questions set, regardless of whether the text has been effectively understood or not.

In the light of this evidence, and of the discussion of textbooks in the first year of English medium instruction above, it is likely that the mismatch between the Std 3 users and their prescribed textbooks is a major cause for the reliance on the rote-rhythm technique.

Other issues in early English medium classes

Apart from those issues already discussed, a number of other areas of concern have been raised by van Rooyen (1990:1-3) in her study of the disparity between English as a subject in Std 2 and English as medium in Std 3 in Transvaal and Bophuthatswana primary schools. Below follows a summary of some of the main problems she found Std 3 teachers and pupils to be facing:

- Insufficient formal English instruction takes place prior to the transition to English medium instruction.
- All subjects (with the exception of Afrikaans and the mother-tongue) are supposed to be taught in English.
- Teachers are expected to conduct classes in English, while children are unable to comprehend English explanations. This is often countered by repeating every lesson twice, once in the mother-tongue, and once in English, or by teaching almost solely in the mother-tongue.
- Teacher's own levels of English competence are low.
- The mother-tongue may not have concepts equivalent to those being taught in English, and children have no

appropriate background knowledge the teacher can activate through the use of a quick digression in the mother-tongue.

- Teachers are underqualified and therefore often poorly prepared for establishing the foundations required.
- Pupils are unfamiliar with the expository texts used in the content subjects, which deal with topics and concepts that are new to them and remote from their life experience.
- The language of textbooks is beyond the average pupil's competence.

As a result of the above factors van Rooyen found, in her research schools, that little more than half of the syllabus is covered in a year, creating a cumulative backlog the children may carry with them each year until Std 10.

It is significant to note that although there is not yet sufficient empirical evidence to justify the general applicability of the above findings to all black primary schools, there is evidence to suggest that the "backlog" effect may provide part of the explanation for the high drop-out and failure rates in black Higher Primary and Secondary schools. Statistical evidence shows for example, that in 1987, of approximately 700 000 pupils enrolled in Std 3, approximately 530 000 had dropped out of school before reaching Std 10 (Carstens and Du Plessis, 1987:19). In 1988 the number of dropouts decreased by some 25 000 to approximately 505 000. However, in spite of the decrease in the number of drop-outs, the Std 10 failure rates are still alarmingly high. Of approximately 200 000 Std 10 pupils registered in 1988, and 210 000 in 1989; nearly 50 000 and 122 000 failed in each year respectively (Du Plessis, du Pisani, Plekker 1988:17; 1989:14).

Pillay (1989:1), reporting on his empirical research at the secondary school level, points out that as black pupils progress to secondary school, they simultaneously face the two problems of:

- a) more advanced conceptual difficulties in geography, science, mathematics, etc ..., and
- b) studying those subjects through the medium of English. Throughout secondary school the problem

becomes more serious and by the time they reach university the surviving students are still struggling with what seems to be largely meaningless English prose in their texts.
(See also Weimann, 1986.)

CONCLUSION

Some of the more significant factors affecting English medium instruction have been discussed in this section. There are certainly many other factors that could also be discussed in this regard, such as socio-economic, political and general motivational factors. However, these are not within the scope of this study.

It is clear from the research reviewed in this section that the textbook is certainly perceived to be one of the major causes of difficulty in learning content subjects. For this reason the focus of this study is on the role of the textbook as a cause of failure to learn through the medium of English. The rest of this chapter will therefore be devoted to a survey of the literature on the following matters relating to expository texts and the young English second language readers for whom they are intended:

Section 2: Reading in a second language

Section 3: Cognitive reading strategies

Section 4: Readability

Section 5: Text analysis

SECTION 2

READING IN A SECOND LANGUAGE

In this section the development of English second language reading theory is discussed as follows: The development of early theories about reading in English as a first language is described, as they developed during the audiolingual era from the early 1940's to the mid 1960's; and the psycholinguistic era of the late 1960's through the late 1970's. This is followed by a discussion of the application of the first language psycholinguistic model of reading to second language reading in the late 1970's; its subsequent development into the schema-theoretic view of reading which has led to the current view of reading as an interactive process. This is followed by a discussion of how the interactive approach to reading explains ESL reading comprehension difficulties. Finally, contemporary issues in ESL reading are discussed.

THE DEVELOPMENT OF ENGLISH SECOND LANGUAGE READING THEORY 1940-1988

The audiolingual era, 1942-1962

During the 40's, 50's and early 60's reading (in a first language) was viewed as secondary to, and dependant on, development of oral language skills (Bloomfield 1942, Fries 1945, 1962). The strong influence of the audiolingual method at the time, resulted in the view that reading and writing could only be taught, and therefore learned, after aural- oral skills had been mastered. Teachers trained in the audiolingual method were taught that "language was speech", and that "reading was simply speech written down" (Silberstein 1987:28).

The method of teaching reading at that time, reveals that the process of reading and teaching reading was understood to be fairly mechanical. According to Silberstein (1987:28) students were "drilled" in order to develop habitual, eventually automatic, recognition of the written symbols corresponding to familiar spoken language patterns. Reading was essentially a mechanical decoding of speech written down. However, it seems unlikely that teachers spent much time teaching reading since the teaching of speaking was regarded as more important. This is confirmed

by the fact that many audiolingual programmes ignored the teaching of reading altogether in favour of dialogues and pattern-practice drills thought to produce effective speakers. (Silberstein 1987:28)

A decade of questioning, 1962-1973

1962 marked the beginning of what Silberstein (1987:29) calls a decade of questioning. She reports that as a result of a great deal of debate over reading instruction and the usefulness of audiolinguism, and the reassessment of the linguistic and psychological theories upon which the audiolingual method was based; a major transformation in the conceptual model of (first language) reading was begun. Researchers like Rivers (1964,1968), Plaister (1968), Eskey (1970,1971), Yorio (1971), Pierce (1973) and Wilson (1973) moved towards a slightly less mechanical view of reading. They regarded it primarily as a decoding process of reconstructing meaning by recognizing and decoding letters and words and then phrases, clauses and intersentential linkages. In their view, reading and comprehension problems were essentially decoding problems. This view, although less mechanical than the audiolingual view, and more concerned with deriving meaning from texts, did not provide either an effective method for the teaching of reading, or a model that explained the reading process satisfactorily. The focus was still on the text as the "container" or "carrier" of meaning.

It was during this time of changing attitudes towards reading that the importance of the reader's background knowledge, in particular the role of socio-cultural knowledge in second language reading, began to be recognized. According to Fries (1963), a failure to relate the linguistic meaning of a reading passage to cultural factors would result in something less than total comprehension. However, despite Fries' early insight into the importance of the role of culture-specific knowledge, the concept was not taken up in early theories of second language reading, and the methodological and instructional focus remained on decoding (Carrell, 1988:2).

The influence of psycholinguistics, 1967-1979

The really significant work during this period came about as a result of the influence of psycholinguistic research. Goodman (1967) advocated

a very different model of reading, which gradually, over the following twelve years, began to influence views of reading significantly. (See also Goodman 1971 and Smith 1971 and 1973). Goodman's 1967 model of reading as a "Psycholinguistic Guessing Game" marked the introduction of a completely new approach to reading, which continues to inform most current thinking about reading to the present day.

Goodman (1967:371) rejected previous views of reading which regarded it as a precise process, which involved "exact, detailed, sequential perception and identification of letters, words, spelling patterns and large language units". Instead he proposed that:

Reading is a psycholinguistic guessing game. It involves interaction between thought and language. Efficient reading does not result from precise perception and identification of all elements, but from skill in selecting the fewest, most productive cues necessary to produce guesses which are right the first time (1976:372).

Coady (1979:6) explains that Goodman's term "a psycholinguistic guessing game" refers to the fact that any reader will have a large number of potential points at which uncertainty may arise. Goodman, he points out, argues that all readers will at certain points "guess wrong". The effects of such a guess, are clearly important for understanding the reading process. Proficient readers will recover quickly from such wrong guesses, and their overall performance will not be affected seriously. However, the poor reader will not recover so successfully and will instead fall into a "vicious cycle of wrong previous information leading to wrong later predictions".

Smith (1973) draws attention to two important contributions from psycholinguistic research which support the argument that the efficient reader does not proceed in a rigid word-by-word fashion. The first is that, according to Miller (1967), there is a severe limit to the amount of information that readers are able to receive, process and remember. The reader, therefore, does not use all the information on the page, but selects only the most productive cues. The second is that Kolers (1969) demonstrated that reading is only incidentally visual, and that more information is contributed by the reader than by the print on the page. Readers, therefore, understand what they read "because they are able to

take the stimulus beyond its graphic representation and assign its membership in an appropriate group of concepts already stored in their memories".

Although Goodman's model exerted a strong influence on views of first language reading at the time, it was only by the early 70's that its significance for second language reading was realized. The most significant impact of Goodman's theory, revealed in the literature on both first and second language reading, was that it introduced the notion of the reader as an active participant in the reading process. The reader is seen to be involved in making and confirming predictions, primarily from his or her background knowledge of various linguistic levels (Eskey, 1973; Saville-Troike, 1973; Clarke and Silberstein, 1977; Widdowson, 1978; Clarke, 1979 and Mackay and Mountford, 1979). However, in spite of the important contribution of Goodman's theory, it is at this very point that the major limitation of his model becomes evident.

According to this model, while the reader is seen to be an active participant in the reading process, his primary contribution in terms of the background knowledge he brings to the reading of a text is limited to linguistic knowledge. Although, as a result of this model, second language reading came to be seen not only as a vehicle for language instruction; but also as a unique information-processing skill, the focus was still on processing information in the text. In other words, for this model, meaning was still fully present in a text, to be decoded by the reader who responded to linguistic cues in the text. (The implications of Fries' statement had yet to be fully explored and incorporated.) Subsequent developments in reading theory, discussed below, extend and elaborate on the psycholinguistic theory by focusing more precisely on the important role of the reader, and on other dimensions of background knowledge in an interaction between the reader and the text.

The Schema-Theoretic or Interactive approach, 1979-1988

Since 1979, Goodman's basic psycholinguistic model, as applied to second language reading, has been extended to incorporate new psycholinguistic insights about the reader's background knowledge, which interacts with

conceptual abilities and process strategies to produce comprehension (Adams and Collins, 1979; Coady, 1979; Steffenson, Joag dev and Anderson, 1979; Carrell, 1981, 1982; Johnson, 1981, 1982; Hudson 1982; Carrell and Eisterhold, 1983). Most of this research is referred to as the "top-down" or "interactive" approach, since it emphasizes the role of the reader as an active participant in the reading process. In this view, not only is the reader's prior linguistic knowledge and level of proficiency in the second language important; but also prior background knowledge of the content area of the text as well as it's rhetorical structure (Carrell 1983, 1984, 1985; Carrell and Eisterhold, 1984).

Unlike previous approaches to reading, a fundamental assumption of interactive approaches is that meaning is not fully present in a text, waiting to be decoded. Rather, meaning is created through the interaction of text and reader (Adams and Collins, 1979; Widdowson, 1979; Lewis, 1982; Samuels, 1983; Devine, 1988; Carrell, 1988). According to Adams and Collins, a text only provides directions for readers as to how they should retrieve or construct intended meaning from their own, previously acquired knowledge. The background knowledge that facilitates text comprehension has been studied under the name of schema theory, which emphasizes the role of pre-existing knowledge in providing the reader with information that is implicit in a text (Rumelhart 1977, 1980, 1981; Carrell and Eisterhold, 1988).

According to "schema theories", all pre-existing knowledge is packed into units or knowledge structures called schemata. These knowledge structures or schemata, are "stored hierarchically in the brain, the more general subsuming the more specific" (Rumelhart 1981;4,5). Rumelhart explains that:

A schema contains, as part of its specification, the network of interrelations that is believed to normally hold among the constituents of the concept in question. A schema theory embodies a **prototype** theory of meaning. That is, in as much as a schema underlying a concept stored in memory corresponds to the **meaning** of that concept, meanings are encoded in terms of the typical or normal situations or events which instantiate that concept.

In addition, a reader's hierarchy of schemata organizes his knowledge of language and the world. So, while reading, on the basis of input from the text, the reader forms expectations based on prior knowledge both of texts (formal schemata) and of the world (content schemata). He seeks to confirm his expectations by matching information in the text with information stored in the relevant schemata.

According to schema theory then, comprehending a text is an interactive process between the reader's background knowledge and the text. Efficient comprehension requires the ability to relate the textual material to one's own knowledge.

The process of interpretation is guided by the principle that every input is mapped against some existing schema and that all aspects of that schema must be compatible with the input information. This principle results in two basic modes of information processing, called bottom-up and top-down processing (Samuels, 1983; Carrell, 1984; Silberstein, 1987; Silberstein, Carrell and Eisterhold, 1988). Bottom-up processing occurs when information from the text (linguistic input e.g. phonemes, graphemes, words etc) is mapped against the reader's schemata, which are modified on the basis of information encountered in the text. (This process is also referred to in the literature as "text-based", "text-driven", "data-driven" and "outside-in" processing.) Top-down information processing occurs when readers use prior knowledge to make predictions about the data they will find in a text, based on prior experience or background knowledge, and then checking the text for confirmation or refutation of those predictions. (Also referred to as "knowledge based", "inside-out", "conceptually-driven", or "hypothesis-driven" processing.)

The crucial feature of an interactive reading model is that bottom-up and top-down processing are thought to occur simultaneously, and to interact with each other (Rumelhart 1976,1981; Adams and Collins, 1979; Lewis, 1982; Samuels 1983; Silberstein, 1987; Carrell and Eisterhold 1988). This ensures that the data that are needed to instantiate or fill out the schemata become available through bottom-up processing; while at the same time top-down processing facilitates their assimilation, if they are

anticipated or are consistent with the reader's conceptual set. Adams and Collins (1979:5) explain that:

Bottom-up processing ensures that the reader will be sensitive to information that is novel or that does not fit his ongoing hypothesis about the content of the text; top-down processes help the reader to resolve ambiguities or to select between alternative possible interpretations of the incoming data.

Thus, according to schema theory, readers activate an appropriate schema against which they try to give a text a consistent interpretation. "To the extent that they are successful, we may say that they have comprehended the text" (Carrell, 1984:1,2). (See also Bobrow and Norman, 1975; Adams and Collins, 1979; Rumelhart, 1981; Carrell and Eisterhold, 1983.)

It is significant for this thesis, particularly for the discussions of Readability and Text Analysis in sections 4 and 5 of this chapter, that the interactive model suggests that no text can be considered "generically difficult or easy simply on the basis of linguistic features such as syntactic complexity or word frequencies" (Silberstein 1987:31). Texts become easier to comprehend if they correspond to students' prior knowledge of language, rhetorical conventions and the world (Hudson, 1982; Steffenson, 1979, 1984, 1988; Carrell, 1981, 1983, 1984, 1985, 1987; Johnson, 1981, 1982). Hudson, for example, demonstrates the significance of background knowledge in the interpretation of texts by showing that schemata can override language proficiency as a factor in comprehension. This finding is corroborated by Clarke and Silberstein, (1977); Smith, (1978); Murray, (1985); and Carrell and Eisterhold, (1988), who agree that during reading, more information is contributed by the reader than by print on the page.

THE INTERACTIVE APPROACH TO READING COMPREHENSION DIFFICULTIES

According to the interactive model of reading, failures in reading comprehension can occur due to a breakdown in the simultaneous bottom-up, top-down (bidirectional) processing, and the overreliance on either bottom-up or top-down (unidirectional) processing (Silberstein, 1987; Carrell, 1988). Carrell (1988:101) points out that less skilled readers tend to rely too heavily on processes in one direction, producing

"deleterious effects on comprehension". She goes on to identify five main causes (pp 103-110) of such breakdowns in the interactive process discussed below.

1) **Schema availability**

The most obvious cause of overreliance on the text in comprehension is the absence of relevant knowledge structures (schemata) to utilize top-down processing. If the schemata do not exist for the reader, they cannot be used (Norman and Borrow, 1975; Rumelhart, 1981; Carrell, 1984).

Carrell (104) draws an important distinction between **formal schemata** (background knowledge of the formal, rhetorical, organizational structure of the text; see Meyer, 1975, 1977, 1981 on this), and **content schemata** (background knowledge of the content area of the text). She shows that the absence of either or both of the schemata as appropriate to a particular text can result in processing difficulties. The reader may then either:

- a) rely too heavily on text-based processes, or;
- b) substitute the closest schema he possesses, and try to relate incoming textual information to that schema, resulting in schema interference. In either case, comprehension and recall suffer.

2) **Schema Activation**

It is also possible that a reader may possess appropriate schemata which are not activated during reading, resulting in comprehension difficulties. This is likely to be as a result of what Carrell (1984) calls "opaque" texts, which do not contain sufficient textual cues to signal the schemata to be activated. (See also Johnson, 1981; Rumelhart, 1981; Bransford, Stein and Shelton, 1984.)

3) **Skill deficiencies**

There are two skill deficiencies that are likely to cause the failure of bottom-up processing in reading, namely: linguistic and reading skill deficiencies.

a) Linguistic deficiencies

The linguistically deficient reader, who is unable to decode syntactic structures or recognize content vocabulary, will be unable to use text-based, bottom-up processing. Clarke (1979,1980:206) demonstrates that limited control over the language may limit the transference of L1 reading skills to reading in a second language and "short circuits" the good reader's system, causing him to revert to poor reader strategies. (See also Coady, 1979; Anderson, 1984; and Devine, 1988.)

b) Reading skill deficiencies

Readers may also have reading-skill deficiencies, and for example, be inefficient bottom-up processors, decoding language only with great effort. This deficiency, according to Carrell (1988), may lead either to overreliance on decoding or avoidance of it. For young readers, this kind of problem may be especially frequent since many of the subskills and concepts presumed by a text may not yet be well learned or integrated (Adams and Collins 1979:7).

4) **Conceptions about reading**

The reader's conceptions about reading may also interfere with interactive processing. Some students simply do not know that they are allowed or expected to use information not stated in the text in order to interpret it, believing that "all the meaning is in the text". (See also Lanham 1990:179).

5) **Cognitive Style**

Related to conceptions about reading, Carrell suggests that a reader's cognitive style may be a possible cause of unidirectional text processing. By this she means that some readers may simply treat any stimulus as independent of all prior knowledge they possess.

CONTEMPORARY ISSUES IN ESL READING

"Holding in the bottom"

Probably the single most significant issue in contemporary reading theory, as it informs classroom practice, is the concern for a properly balanced or symmetric approach to interactive reading (see Grabe, 1986; Silberstein, 1987; Carrell, 1988; Eskey and Grabe, 1988). This concern stems from the fact that there has been a tendency to view the introduction of "a strong top-down processing perspective as a substitute for the bottom-up, decoding view of reading, rather than its complement" (Carrell, 1988:4). Eskey and Grabe (1988:93) have pointed out that, in practice, bottom-up processing has been de-emphasized.

They hold that for the less proficient, developing reader (like most second-language readers), the strong top-down perspective does not provide a true picture of the problems such readers must surmount. They argue that for the proper interpretation of texts, top-down skills are crucial; but lower-level skills such as the rapid and accurate identification of lexical and grammatical forms are "not merely obstacles to be cleared on the way to higher-level 'guessing-game' strategies, but skills to be mastered as a necessary means of taking much of the guesswork out of reading" (98).

In the light of the above discussion, the case for giving more attention to developing the ESL reader's linguistic skills is convincing. It is equally important that authors and publishers pay careful attention to the language of textbooks prepared for young ESL readers.

The role of the teacher

Finally, the role of the teacher is also considered to be of great importance. In contrast to the audiolingual teacher who, when he taught reading, conducted a great deal of mindless drilling; Grabe (1986) and Silberstein (1987) write that there is great consensus that the role of the teacher is to "facilitate reading, raise consciousness, build confidence, ensure continuity and systematicity, show involvement, and demand performance". The implication is that teachers should understand that reading is crucial for learning; that learning is dependant on the ability to read; and that reading is certainly not to be regarded simply as an extension of aural-oral language learning.

Conclusion

A necessary implication of the interactive approach to reading is that "reading undeniably and incontrovertibly involves two necessary elements: a reader and a text" (Anderson and Urquhart, 1984:xvi). Ideally, these two elements should be "compatible" in the sense that a meaningful interaction is possible between them. The extent to which the interactive process described in this chapter is successful, depends on a number of reader and text-related factors. These factors, although parts of a simultaneously interactive process, will be analysed separately in the following sections of this chapter, in order to gain a deeper understanding of potential causes of difficulty for the young second language reader in the first year of English medium instruction.

SECTION THREE

COGNITIVE READING STRATEGIES

In this section, research on what the reader is thought to do while reading is reviewed in terms of the shift from the focus on the **product** in the 1940's, 50's and 60's, to the current emphasis on the **process**. This is followed by a discussion of the difficulties encountered in trying to describe, by inference, the reader's cognitive reading strategies. In the light of this discussion, the reading strategies of "competent" and "less competent" readers are described. Finally, some of the special cognitive demands of geography are investigated.

A REVIEW OF READING SKILLS RESEARCH - FROM PRODUCT TO PROCESS

Traditionally, reading researchers focusing on what the reader does while reading, have attempted to analyse the reading skill into a series of subskills (Anderson and Urquhart 1984:xvi). Most early research attempted to discover whether reading is composed of different subskills that relate to one another within a hierarchy of skills. Since 1944, many attempts have been made to classify reading skills, and the literature reflects a great deal of controversy over at least two issues. The first, concerns the number of reading skills, and the second, whether the skills-approach is appropriate for the description of the reading process.

With regard to the number of reading skills, Davis (1944) was among the first researchers to suggest nine, which he later reduced to four (Davis, 1972). These were: 1) identifying word meanings; 2) drawing inferences; 3) identifying the writer's technique and recognizing the mood of the passage; 4) finding answers to questions.

Since then, taxonomies varying in content from one basic reading skill (Thorndike, 1973; see also Spearritt, 1972 and Barrett, 1968), to nineteen (Munby, 1978) and even thirty six drawn up by the New York City Board of Education (see Luzner and Gardner 1979:42). See Munby's list in Appendix M, and 29 of the New York City Board of Education's 36 skills in Appendix N.

While the question of "how many skills" does not appear to have been settled, recent research has been more concerned about whether the reading process is best described as a unitary ability or in terms of multiple skills that can be identified and measured. In reviewing the literature in this field (Goodman, 1970; Guthrie, 1973; McNeil, 1974; Stennet, Smythe and Hardy, 1975; Samuels, 1976; Kintsch and van Dyk, 1978; Artley, 1980; Downing and Leong, 1982; Anderson and Urquhart, 1984; Birkmire, 1985; Tonjes, 1986; Lanham, 1986), there appears to be increasing support for the view of reading as a unitary, cyclical process in which mental processes or strategies interact simultaneously.

This view appears to have evolved through the following stages:

Stennet, Smythe and Hardy (1975) expressed concern about which skills to teach and in which order they should be taught. In 1976 Samuels argued that although it may be possible to determine a hierarchy of subskills, the task is so complex that a validated hierarchy does not

exist. In 1978 (367 - 368) Kintsch and van Dyk proposed a cyclical model of text processing which described the reading process as, the simultaneous interaction of a number of mental processes (which previous research had attempted to classify as separate skills), in a cycle which is repeated as the competent reader progresses through manageable portions of the text. Similarly in 1979, Lunzer, Waite and Dolan argued that when a reader reads intelligently he forms a sequence which is repeated as he progresses through the text. They also stress that not

all the elements in the sequence need be present at each repetition; it is possible that some of these processes can occur simultaneously, and that not all of them are conscious.

The work of Kintsch and van Dyk, and Lunzer et al, discussed above, appears to mark the first and most significant shifts away from the traditional skills-approach to reading research. However, among educationists, this shift of focus does not seem to have been taken up and the skills hypothesis view has tended to prevail (see Grellet, 1982 and Nuttall, 1982). This is probably due, at least in part, to the relative ease with which skills can be translated into teaching materials and taught in the classroom in contrast to the less accessible mental processes of reading. Another likely reason is that educationists have been uninformed about recent cognitive approaches to the teaching of reading.

Over the last 6 years, researchers have tried to bridge the gap between themselves and educationists, or between theory and practice, by moving towards more applied research. Researchers like Anderson and Urquhart, (1984); Bransford et al, (1984); Carrell, (1984, 1988); Hosenfeld, (1984); Cooper, (1984); Birkmire, (1985); Tonjes, (1986); Lanham, (1986); Devine, (1988); Carrell and Eisterhold, (1988); have shown concern about the practical application of their research in the ESL classroom and have been involved in empirical research, investigating ways of applying reading theory in the classroom.

On the one hand, researchers like Hosenfeld (1984) and Cooper (1984) have investigated the differences between the skills and/or strategies actually used by successful and unsuccessful ESL and EFL readers, and provided valuable insights which confirm much of the current ESL reading theory. On the other hand Carrell and Eisterhold (1988) and Carrell (1988) have written papers suggesting classroom activities for teaching a number of reading comprehension strategies, incorporating the various aspects of bottom-up and top-down processing. Lanham (1981, 1987, 1988, 1990) has gone still further in his work for the Molteno Project in South Africa by developing English language courses for the primary

school in which ready-made tasks and activities, in teacher's manuals and pupil's workbooks, incorporate current approaches to and methods of teaching reading.

In addition, Anderson and Urquhart (1984: xvii), in their argument against the definition of reading as a series of subskills, point to seven problems associated with this approach. The most significant of these being that the tradition of research into skills is based upon the assumption that texts have predictable meanings, which can be extracted only if the reader is sufficiently skillful. In the light of the widely accepted schema-theoretic view of reading, this assumption is unacceptable, since meaning is thought to be created by the reader in interacting with the text.

Nevertheless, in spite of attempts to bridge the gap between researchers and educationists, there is little evidence to show that they have made any real impact on educational authors, publishers and teacher training institutions in South Africa. In the light of the current emphasis on rote learning and the product of reading comprehension (discussed in section one of this chapter), it is likely that the process approach to reading is unknown to the majority of teachers.

READING AS A PROCESS

It seems then that most early research tended to focus on the product rather than the process of reading. Anderson and Urquhart (1984:xix) argue that this is "inadequate because of the unpredictable and normal variation in product, and because knowing the product does not tell us what actually happens when a reader interacts with a text". The process, they argue, underlies the product. The value of concentrating on process in research and teaching, is that if processes can be characterized: 1) they may contain elements that are general across different texts, that learners can learn in order to improve their reading. A description

of the process should lead to the possibility of: 2) distinguishing the processing of successful and unsuccessful readers. This in turn should lead to the possibility of: 3) teaching strategies, or process components, of successful readers to unsuccessful ones, or at least of making them aware of other strategies.

According to Anderson and Urquhart the problem with research into process is that "the process of reading is elusive" (1984:xx). The following discussion attempts to illustrate how a satisfactory description of the cognitive process of reading continues to elude researchers.

One of the not so recent, yet most useful techniques of investigating the process of reading is Goodman's miscue analysis (1974 and 1976). Reading errors are analysed for their similarity to or difference from the words in the text, and inferences made about the mental processes that must have been taking place during reading. According to Anderson and Urquhart, Goodman's work has shown that:

Readers use graphic, syntactic, semantic and discourse information in the text during their processing. Readers can be seen to be creating language on the basis of their predictions about what language will actually occur, to be constantly trying to make sense of what they read; and to be monitoring their creation of language in order to see whether it makes sense.

(See also Cooper, 1984; and Hosenfeld, 1984)

The basic reading strategies that miscue analysis appears to reveal are:

1. **prediction** - what the next chunk of language will be;
2. **sampling** - selecting the minimum information from text consistent with the prediction;
3. **confirming** - testing the prediction against the sample;
4. **correction** - if the prediction is not confirmed, another prediction is generated.

Naturally, these strategies reflect very closely Goodman's model of reading discussed in section 2 of this chapter. It is to be expected then, that strategies derived from his early model will not reflect the

entire reading process as it is described by more recent interactive models. Indeed, there are at least three important weaknesses in using Goodman's miscue analysis approach for deriving cognitive reading strategies:

- 1) Anderson and Urquhart (1984:xxi) warn that these strategies are "inferred by researchers, rather than displayed by readers".
- 2) The connection between reading aloud, which is necessary for the miscue analysis, and silent reading is difficult to prove. It is therefore difficult to generalize about cognitive strategies.
- 3) Goodman's psycholinguistic model of reading does not take into account the role of the reader's content and formal background knowledge, and their activation as a strategy. Nor does it account for cultural factors.

It follows then, that any analysis of miscues based on this model will not account for these crucial factors and how they might influence the four identified strategies discussed above.

Even if the miscue analysis was applied in the context of an interactive model of reading, only the last of the three weaknesses discussed above could be accounted for. Researchers would still have to infer reader's cognitive strategies and assume that these were the same for aloud and silent reading. Even Olson and Mack's (1984) "Thinking-Out-Loud" method does not provide any more concrete evidence than researcher's inferences about the processes thought to be taking place while reading.

Nevertheless, in spite of the fact that cognitive strategy thinking relies heavily on the "informed inferencing" of researchers, and techniques that will enable researchers to get "inside readers' heads" seem to be as elusive as the strategies they seek to identify; current reading research seems to point conclusively to the appropriacy of a process approach for the explanation and description of cognitive strategies. (See discussion of the reading process in section 2 of this chapter.)

Cognitive reading strategies and the young ESL reader

It has been explained that the focus of reading research has shifted clearly from the classification and description of reading skills, to an interest in the cognitive strategies that are part of the process of reading. In this regard, Lanham's 1986 and 1990 work is particularly significant in the South African context. By drawing on schema-theory, cognitive strategy research and his own extensive empirical research into the reading problems of young black South African readers; Lanham (1986:10-11) suggests that there are three main cognitive strategies in competent reading. In a 1990 paper (1) he proposes a fourth. Particularly significant for this study, is the fact that he shows how these strategies relate to the young ESL reader's competence in Std 3, and identifies reading difficulties they may be expected to encounter as a result. Lanham's four main cognitive strategies are:

1. Fitting information present in the text into a background of previous experience.
2. Setting up equivalences between forms of English and the mother-tongue.
3. Anticipating what is to come on the basis of probabilities arising from what has already been read.
4. Constructing for oneself the coherence of the text.

A strong argument for using Lanham's four cognitive strategies as a model for this study, is that together, they account for virtually all text and reader factors accounted for by the interactive approach to the reading process. In addition, his work has been developed in the context of black primary schools in South Africa.

The first strategy: Fitting information present in the text into a background of previous experience

According to Lanham (1986:5) the competent reading of a text begins with efforts to locate what is believed to be in the text in the context of previous experience. This creation of a background to the text using prior knowledge of the world, is maintained as reading progresses, in order to produce representations of anticipated meaning. Information coming from the reading of the text feeds into a mentally created schema constructed on the basis of previous experience of similar events,

routines, etc. The new information supplements, supplants, modifies and certainly expands on the components of such a schema.

Lanham explains that, for reading in a second language, this raises at least two important issues:

1. The second-language reader will interpret what he reads in the text in terms of its relevance to, and closeness of "fit" with, the components of his background schema. Because of different cultural and life experiences, this may not, in fact amount to the intended message of the text. (See also Johnson 1981, 1982; Goetz et al, 1983; Bikmire, 1985; Murray, 1985; Tonjes, 1986; Carrell, 1987, 1988.)
2. Even more important, is whether or not the second-language reader makes any attempts to construct or activate a background schema at all. (See also Rumelhart, 1981; Bransford et al, 1984; Carrell 1984, 1988;.) Lanham (6) points out that there is evidence to suggest that even if this strategy is practised in the mother-tongue, it does not transfer in any effective way to learning to read in the second language. If this is in fact the case, then attacking a text relying on information which flows only from the sentences present in the text is, in effect, not to comprehend.

The second strategy: Setting up equivalences between forms of English and the mother-tongue

Lanham (1990:175) explains that in processing texts, the young second-language reader is inevitably involved in an encounter with unknown and unfamiliar components and properties of texts. He tends to be blocked at points where meaning is not readily inferred and he or she is delayed in the process of calculating meaning.

The effective processing of extended text requires a certain momentum to be maintained, failing which the grasp on the coherence of the text is lost. In this context, Lanham proposes that an important strategy

adopted by young bilinguals is the setting up of equivalences between forms in English and the mother-tongue on the basis of known meanings. Such meanings, he points out, may be syntactic, lexical, cohesion devices etc. Clarke's (1979, 1980) findings that linguistic competence may influence the transfer of L1 skills to the L2 is particularly significant in this regard.

The third strategy: Anticipating what is to come on the basis of probabilities arising from what has already been read

An important aspect of the interactive process between reader and text involves predicting what is to come. The competent reader creates such expectations not only from a schema constructed from previous experience, but from cues coming from words, structures and meanings which themselves predict the words, structures and meanings that lie ahead (Lanham 1986:9). Lanham points out (7) that having these expectancies is a product of extensive exposure to reading texts in the language, or living in the culture; they are not the products of rules. The young ESL reader's disadvantage in this regard is obvious, and it cannot be assumed that he has had this exposure.

In addition, prediction implies the presence of a running hypothesis in the mind of the competent reader of what lies ahead, needing only a sampling of the text to confirm the hypothesis (see also Goodman, 1970; Adams and Collins, 1979; Rumelhart, 1981; Lewis, 1982). The antithesis to this competent reading strategy is progressing from left to right processing each and every word, working out meaning in retrospect and adding it to that of a previous sentence (7). This way of reading, says Lanham, precludes constructive interaction with the information in the text (see also Silberstein 1987). He reports that there is good evidence that even high-school pupils are still operating at this level of the reading skill which is only acceptable at the earliest stages of learning to read. (See also Weimann, 1986 and Pillay, 1989.)

The fourth strategy: Constructing for oneself the coherence of the text.

In terms of the schema-theory approach to reading, this strategy allows for the proper storage of the content of a text, an ability to recall much of the information created in the text and an ability to inter-

relate different parts of the text between which there is no obvious overlap in ideas (7). This also includes the extraction of the theme that unites the whole text, which takes the form of a "progressively advancing synthesis" which amounts to "what the text is about". (See also Kintsch and van Dyk, 1978.) This is done by seeking the "central idea" sentence or sentences which all other sentences support and of which other sentences are obvious entailments. Lanham points out that in descriptive or expository text which Std 3 pupils are expected to read, the structure is more complex than in narrative texts. Theme in such text has "conceptual form but not necessarily syntactic expression" (8). This is a particularly demanding strategy and the young ESL reader whose only exposure has been to narrative text, is unlikely to have had any practice using it.

Text mapping strategies (a possible fifth strategy)

Carrell (1988:248), in her discussion of reading strategies, suggests a strategy that does not appear to be accounted for by Lanham. This may in fact make up a fifth strategy, namely: **Text mapping strategies**, or using knowledge about the rhetorical organisation of a text to guide and organise the interaction with the text. (See also Meyer 1975, 1984.)

SPECIAL COGNITIVE DEMANDS OF GEOGRAPHY

In addition to the cognitive strategies the reader is thought to apply during the reading process, the study of geography makes special cognitive demands of its learners. Davies and Green (1984) provide a useful overview of the four major cognitive demands geography makes of its learners. The following discussion summarizes their main points.

A fundamental requirement of geography is that pupils develop and learn to use appropriate mental frameworks, or schemata which enable them to make sense of the information in it by fitting what is **new**, into an already established, or **old** framework (Davies and Green, 1984:2). Davies and Green argue that geography, perhaps uniquely, makes very considerable intellectual demands on pupils. The topic-types of geography are not only relatively new to pupils; they deal with concepts, which, reflecting the phenomena and methods of both history and science, are not simple and

concrete, as they may appear on the surface, but are complex and abstract. (See also Joseph, 1985:291; Bennetts 1985:300). As a consequence, geographical descriptions require of pupils a willingness to engage with phenomena which are:

- i) distanced from their immediate experience;
- ii) dynamic rather than stable;
- iii) difficult to define, and are;
- iv) expressed in a quite special vocabulary.

Concepts outside pupil's immediate experience

By definition, the phenomena which are described in geography texts are not only outside pupils' immediate experience, they are also difficult to exemplify in the classroom. By their very nature, the phenomena of geography are not readily demonstrated in the classroom; and they are difficult to come to terms with over a short period of time. This means that the geographical **description** is a very important source of information for pupils. The problem may be compounded by the condensation of the subject matter, and the use of complex sentences in textbooks (Preston and Herman, 1974:386-387). The description, therefore, frequently has to substitute for, rather than support practical investigation. This is one reason, of course, why the verbal descriptions in geography texts are so substantially supported by non-verbal graphics, photographs, maps, diagrams and tables. Thus, a very real demand on pupils using geography texts, is that they engage actively with both verbal and graphic descriptions.

Phenomena which are dynamic and unpredictable rather than stable

Pupils learning geography are required to embrace the notions of dynamic change and alternative (and often competing) explanations from descriptions which may be at variance with current facts and perspectives. The world which pupils study in geography is constantly changing and so do the frameworks for describing and investigating them. Such changes cannot easily be represented in text-book descriptions, especially those which have been published for some time.

Definitions which are elusive, imprecise, open to investigation and evaluation

Geography requires that pupils radically revise and modify the "space and time schemata" which serve them quite adequately for studying scientific phenomena, or reading English stories. In geography, pupils are in effect invited to move out from their own personal environment into the world, and in so doing, to suspend or relinquish the "egocentric and ethnocentric" views of the world which are an important part of their identity. Textbook descriptions of geography which present images of the third world which are ethnocentric, simplistic and written from a "developed-world" orientation clearly do not help pupils to do this. Thus an essential requirement of pupils, as well as teachers in geography, is that they read critically.

Vocabulary used in new specialised ways

It is not only the concepts of geography that impose demands on the cognitive and linguistic capacities of pupils. So too, do apparently simple descriptions of human activities which incorporate vocabulary used in new and specialised ways, the meanings of which will not necessarily be immediately evident. They are critically dependent upon a real comprehension of the meaning of new and specialised vocabulary.

CONCLUSION

From this discussion, it would seem clear that cognitive strategy research complements schema-theory research. The reader, using cognitive strategies (consciously or unconsciously), is seen to be actively engaged in constructing meaning by interacting with the text, which makes cognitive demands of its own. The cognitively prepared, active reader is therefore as important for the reading process as the text.

The reading process, the reader, and his cognitive strategies, have been discussed in the last two sections of this chapter. In order to complete the discussion of the components of the interactive reading process, the text and its features will be discussed in the remaining sections of this chapter.

SECTION FOUR

READABILITY

In this section, a brief overview of readability and traditional methods of assessing the readability of first language texts is followed by a discussion of criticisms levelled at L1 readability measures applied to L2 texts. This is followed by a brief discussion of two other approaches to the assessment of readability. Finally the approach to assessing readability used in this study is outlined.

TRADITIONAL METHODS OF ASSESSING READABILITY

Readability has been variously defined as:

The sum total (including interactions) of all those elements within a given piece of printed material that affects the success which a group of readers have with it. The success is the extent to which they understand it, read it at optimum speed and find it interesting.

(Dale and Chall, 1948 in Wegerhoff, 1981:41)

Ease of understanding or comprehension due to style of writing.

(Klare 1963)

Ease of reading; interest or compellingness, and ease of understanding.

(Gilliland 1972)

The proportionality between processing effort and obtainable knowledge during the activity of reading.

(De Beaugrande, 1980:283)

A child's ability and desire to read, physical environment, type of print, column size, line spacing, angle at which the book is held, organization of material, subject matter, word frequency, word length, sentence length, syntax.

Rye (1982)

when:

- it's (a texts') meaning can be quickly and easily understood by the reader for whom it is intended;

- the target reader is successful in completing the task embodied in the text;
- if necessary, the reader can quickly and easily recall the essentials of the text sometime after reading it.

Williams (1985)

Ensuring that a given piece of writing reaches and affects its audience in the way that the author intends.

Tekfi (1987:262)

In spite of the fact that most **explications** of readability account for some kind of interaction between reader and text, traditional **methods of assessing** the readability of texts have focused primarily on the text in isolation. Klare (1963) cites some thirty readability formulae, many of them derivative to some extent from the work of Rudolph Flesch (1949). Pillay (1989:52) lists another four, with Vanecek (1982) and Bjornsson (1983) being the most recent. These readability **formulae**, designed for use on L1 texts, have until recently been the most widely accepted methods of measuring readability of L1 texts. They have also been widely used in the assessment of L2 texts in spite of the fact that in most cases, they do not even closely reflect the equally widely accepted **explications** of readability. Most readability formulae are "essentially mechanistic" (Nuttall and Young, 1989:229), focusing on the text as product or structure, placing reliance on "superficial standards of length and complexity of words or sentences" (De Beaugrande 1980:283). According to Pillay (1989:52) the typical procedure followed in the application of formulae to test readability is as follows:

It is usual to sample at least three 100-word passages taken at random. A count is made of some easily identifiable characteristics, such as the average number of words per sentence or the number of polysyllabic words in the sample, and then a calculation is performed to produce a score. This score indicates the difficulty of the sample of text. It is then assumed that this score reflects the difficulty of the whole text.

Among the more well known of these readability tests are the Flesch Reading Ease Formula (1948), the Gunning Readability test (1952), the Fry Readability Graph (1968), the Fog Index and the Cloze Procedure (Rye, 1982).

TRADITIONAL REABABILITY FORMULAE CRITICISED

Among the several critics of traditional readability formulae are Bormuth, (1966); Manzo, (1970); Halliday and Hasan (1976); Kintsch and van Dyk, (1978); Kintsch and Vipond, (1978); Irwin, (1980); De Beaugrande, (1980); Davison and Kantor, (1982); Dreyer, (1984); Williams, (1985); Nuttall and Young, (1989); Lanham, (1990).

Bormuth's 1966 criticism, that "the formulae exclude from consideration many other significant factors, such as ...syntax and complexity of sentences, unusual positioning of sentence components and number of dependant clauses", while it is valid, did not move much beyond the level of the text anyway. Only since 1978 has there been any significantly incisive criticism of readability formulae. Kintsch and Vipon (1978), for example, argued that "because readability formulae depend on correlational data, they fail to enlighten us as to what makes a text difficult to understand". Particularly significant, in the light of the schema-theoretic view of reading, is Kintsch and van Dyk's observation (1978:372) that readability cannot be considered a property of texts alone, but one of the text-reader interaction. (See also Lanham 1990.) They refer, for example, to Kintsch and Vipond's 1978 finding that the readability of some texts changes a great deal as a function of the reader's short-term memory capacity and the size of input chunks in the text. This interactive view of readability is supported by Lanham (1990:176) who argues that the readability of a text requires "both the recognition of constructs and components (textual properties) which cause the young reader to stumble, and an understanding of mental strategies adopted in processing the unknown and unfamiliar".

Other factors that are not accounted for by readability formulae include: word frequency, inference, appropriate use of discourse markers, cohesion devices, coherence and logical presentation of ideas, rhetorical organization, author's style, concept density, level of abstraction, inherent difficulty of subject matter: and the complex socio-psychological factors such as reading purpose and background knowledge, and cognitive processing at work when students read texts (Davison, 1982; Pillay, 1989; Nuttall and Young, 1989).

Yet another factor in the case against the use of traditional readability formulae, is Dreyer's finding (1984) that readability formulae do not have the precision of scientific formulae, and that different formulas produce different results on the same text. In addition, the formulae do not account for passages of different complexity within a single text. (See also De Beaugrande, 1980:284.) Apart from the above, it is highly significant to note that readability formulae as they exist, were developed for assessing L1 texts, and are not in fact designed to be used on L2 texts.

Furthermore, Wegerhoff (1981:21) and Davies (1984:196) agree that a good readability score, according to the formulae, does not guarantee comprehension because the simplification of a text in terms of sentence length and syllable counts "may increase the difficulty of the reading task by rendering explicit relationships obscure". In this regard, Widdowson's (1978:89, 1979:185) distinction between simple and simplified texts is significant. He points out that altering a text according to "invariant language-directed rules", focusing on lexis and syntax, constitutes simplification of usage. This results in a simplified version of a text, which is not genuine discourse. On the other hand, "a writer who simplifies by using all the linguistic means at his disposal to clarify the referential and propositional meaning of a particular text, will be simplifying use". This process results in a simple account, which is a genuine instance of discourse, designed to meet a communicative purpose.

The current significance of the criticisms levelled at readability formulae, is that they inform authors, publishers and education departments that to use such formulae to guide the selection and or production of texts for a particular readership, is to lose sight of a number of crucial readability factors. These include the reader and what he is likely to be able to bring to bear on the reading of the text.

It would appear that little attention has been paid to i) the evidence in opposition to the use of readability formulae, ii) the fact that researchers like Davies (1984:196) have warned that readability formulae "are not intended as guides to simplification procedures, and do not work

as such"; and iii) that even the developers of the readability formulae warned of the limitations of their own formulae (see Fry, 1979:41; Chall, 1979:40). The recent evidence of a serious mismatch between young ESL readers and their content subject textbooks discussed in section 1 of this chapter, suggests that authors and publishers continue to use, or are influenced by readability formulae in the selection and production of "appropriate" texts. Evidence in this regard is provided by Nuttall and Young (1989:229) who report that South African publishers, "...if they use readability formulae, ... tend to use the Fry readability graph", in their grading of texts. A recent informal interview with members of the editorial staff of two of South Africa's main textbook producers revealed that they do not in fact use "such sophisticated techniques". Instead, they rely heavily on an "intuitive sense" of readability levels. To determine which is the lesser of the two evils, is beyond the scope of this inquiry.

TWO OTHER APPROACHES TO THE ASSESSMENT OF READABILITY

Linguistic theories of discourse

For the last 40 years, many researchers have been trying to understand and explain the fundamental properties of texts in terms of linguistic theories of discourse. Carrell (1982:479-482) is careful to point out, however, that there are at least two things to be aware of in discussing this research:

- 1) Most of the various different models deal with selected properties of text (e.g. Halliday and Hasan (1976) deal with cohesion only), and are therefore not 'models' for the comprehensive analysis of any text.
- 2) Most text analysis approaches treat text as though it occurred in a vacuum. She goes on to argue (487) that we must supplant or at least supplement textual analysis theories with broader, more powerful theories which take the reader into account, and which look at reading as an interactive process including the writer, the reader and the text.

Important for this study of text analysis, and to be discussed in detail in Section 5, is the work of Halliday and Hasan (1976); van Dijk (1977,

1979); Kintsch and van Dijk (1978), and Widdowson (1978, 1979) which has been applied extensively in the southern African ESL context by Lanham (1986, 1987, 1990).

TEXT ANALYSIS MODELS

More recently, partly as a reaction to the inadequacy of readability formulae, educationists and publishers have attempted to develop models for textual analysis. These models are generally intended to be used as easy guidelines for the selection of appropriate textbooks by non-experts such as content subjects teachers (van Rooyen 1990:9). Two common weaknesses in most of these models are that:

- 1) they do not fully account for all known readability factors, and;
- 2) they do not account for the role of the reader.

For example, Durojaiye's 1974 model analyses only syntax and vocabulary and is therefore not very different from a traditional readability test. Conn's 1988 model deals only with the coherence of texts, while Giordano's 1987 model deals with vocabulary, coherence and interest potential for the reader. Williams' 1985 model comes closest to dealing with most of the significant text factors (vocabulary, syntax, cohesion, coherence and punctuation), but only deals very briefly with reader factors in a brief overview of the schema-theoretic view of reading.

Van Rooyen's 1990 model is similar in that it is devoted to the analysis of text and does not account for the reader. Nuttall and Young's 1989 model (in progress), building on Williams (1985), goes one step further, by emphasizing the complex nature of the interaction between writer and reader through the text. For them, text is, in line with interactive view of reading, "an instance of discourse production - a complex socio-psychological process of communicative interaction between reader and writer which draws on both local (textual) and global (world) knowledge to enable understanding of the text". (Nuttall and Young 1989:230).

Although none of the above models can be regarded as comprehensive in that they do not account for all possible text factors, and most tend

either to ignore, or down-play the reader factors, it is important to point out that most of them were designed, not as comprehensive models; but to provide teachers or writers and publishers (who are not necessarily linguists) with an instrument to enable them to judge what sorts of problems a particular group of readers might have with a particular book. Van Rooyen points out in their defence, that:

It is also very difficult to find embodied in one person someone who is an expert in linguistics, psychology and the mechanics of printing, and therefore it is unlikely that a model for textual analysis will represent all three of these fully (1990:10).

Since neither educationists, nor researchers, have been able to develop a truly comprehensive model for textual analysis, and since it seems unlikely that it is possible for any single model to fully account for all possible factors in the complex interaction between writer, reader and text; no attempt will be made to develop such a model in this study. However, in order to make a judgement as to the readability of a text, it is necessary to have some kind of measure. For this purpose, the views of Kintsh and van Dyk (1978) and Lanham's (1986-1990) application of these views in the South African context are considered the most appropriate. These are discussed in Section 5, following, and applied in Chapter 3. Not only are their views based on the interactive view of reading, but they also account for cognitive reading strategies and textual properties which may cause the young ESL reader to stumble.

CONCLUSION

In keeping with current interactive views of reading, recent research has moved very clearly away from traditional measures of readability. Alternative approaches to the analysis of text call for the assessment of readability in terms of both reader and text factors. This means, for example, that it is essential that a potential author should have a good idea of what the intended reader is likely to be able to "bring" to the reading of a text in terms of linguistic content and formal schemata. He/she should also have an understanding of what, for the ESL reader, is likely to be "readable writing". In this regard, Section 5 of this chapter, deals with what are considered to be some of the most significant dimensions in the readability of primary school textbooks.

SECTION FIVE

DISCOURSE ANALYSIS - DIMENSIONS IN THE ASSESSMENT OF THE READABILITY OF PRIMARY SCHOOL EXPOSITORY TEXTS.

Introduction

Meanings do not exist, ready-made, in the text itself: they are worked out. We are given linguistic clues in the text to what propositions are expressed and what illocutionary acts are performed, and on the basis of these clues we make sense of the sentences. What we do when we produce discourse is to provide as many clues as we think are necessary for the satisfactory conveyance of our meanings: we do not express everything we mean. Indeed, it is probably impossible to do this even if it were necessary. But it is not necessary. We inevitably rely on common knowledge: we make assumptions about what the reader can infer from what we write. If we judge correctly and make the right assumptions, then the reader will be able to reconstitute our meanings on the basis of the clues we provide and with reference to the knowledge he shares with us.

(Widdowson 1978:31)

Widdowson, above, clearly outlines the importance of the writer's role in producing readable or comprehensible text for a particular reader or group of readers. The reader's role in the reading process has already been discussed in sections two and three of this chapter. It is the purpose of this section, therefore, to deal with the role of the text, and by implication, the role of the writer, in the reading process.

This section provides an analysis of what the literature on text analysis and linguistic theories of expository discourse suggest are the most significant text-based factors affecting the reading process. These factors are discussed under the following headings:

- Vocabulary
- Syntax
- Cohesion
- Coherence
- Text Structure

Concluding the analysis of each of these factors is a discussion of those aspects considered **most likely** to affect the readability of ESL textbooks.

VOCABULARY

The importance of vocabulary for content subject reading

According to Campbell (1987:123), vocabulary is the aspect of reading most regularly identified by readers as difficult. A wide background knowledge of the topic in the text can make reading less traumatic for pupils. However, if they are confronted with a new topic, couched in a language they have not yet acquired adequately, vocabulary can be a profound obstacle to comprehension (McLaughlin et al, 1983; Davies and Green, 1984; Saviile-Troike, 1984; Williams and Dallas, 1984; Ryder and Hughes, 1985; Williams 1985; Davey, 1987; Flood and Lapp, 1988;). It is therefore important for the author to know what reading vocabulary the reader brings to the text (van Rooyen, 1990:61).

On the question of establishing the reading vocabulary of the Std 3 ESL reader, Lanham (1990 informal notes) points out that word frequency lists in the tradition of Thorndike and Lorge in the 1940's (quoted in Bransford 1979); are of no use in the South African context as pupils' exposure to English by this stage, is often so poor that their vocabulary does not relate at all to such frequency lists. Williams and Dallas (1984:208) also point to a number of problems associated with the selection of appropriate vocabulary for the content area textbooks as follows:

- 1) Vocabulary lists in an English syllabus and taught in English lessons may well be (and frequently are) markedly different from the actual command of vocabulary that pupils possess.
- 2) The L2 English syllabus is usually very general in nature, i.e. it gives scant regard to the purpose for which English is taught. Consequently, vocabulary lists in the English syllabus contain few words that are part and parcel of the language of content area subjects.
- 3) Authors of content area textbooks are unwilling to accept the strictures of a vocabulary list.

Lanham suggests that the only real way to assess the young black ESL readers' probable vocabulary is to examine the English stories and books

that they have been exposed to in their previous school experience. In one such study, van Rooyen (1990:62), in analyzing the disparity between the maximum possible vocabulary taught in widely used South African English courses up to Std 2, and the vocabulary actually needed to cope with textbooks prescribed for Std 3; finds that an "uncomfortably large" disparity exists. In a complementary study, Macdonald (1987:4) estimates that the jump from English vocabulary learnt up to the end of Std 2, to the vocabulary required to cope with the content subject textbooks written in English in Std 3 is as much as 1000% (from a maximum of 700 words in Std 2 to a required 7000 words in Std 3).

The significance of these findings is highlighted by Williams and Dallas (1984:208) whose research with Hong Kong pupils, also in their first year of English medium instruction, shows that "vocabulary is of crucial importance in the readability of content area educational textbooks". Their experience shows that:

The vocabulary difficulties encountered by foreign language students in their content area educational textbooks are considerable; that such difficulties are a major stumbling block to the acquisition of knowledge and thereby to the passing of important examinations; and that authors need to pay increased attention to the problems posed by unfamiliar vocabulary.

(See also Davies and Green, 1984; van Rooyen, 1990; Lanham, 1990; Evans, no date)

The distinction between terminology and non-technical terms in content subject textbooks is an important one (Evans, no date; Jeffs, 1980; Davies and Green, 1984; Lanham, 1986; Pillay, 1989; van Rooyen 1990). Of necessity, the study of geography demands the use of subject specific terminology (register terms) which Evans (585) defines as "a word or phrase which, when used in the context of a particular academic discipline, carries a single specific meaning". The use of such terminology may create comprehension problems for young ESL readers who do not know the subject-specific meanings of those words, or the meanings of other familiar words used in new specialized ways.

The comprehension of non-technical vocabulary may also create reading comprehension difficulties, because readers also have to know the meaning of most of the vocabulary used in order to make sense of the text as a

whole. Jeffs (1980) suggests that while teachers are often extremely diligent in their efforts to explain obviously difficult words, they are likely to take for granted that pupils will recognize and use the more "hidden" expressions that are equally vital to learning a subject. Consequently, it may well be that a child is able to grasp a one-to-one connection between a newly explained term and the object or idea which it denotes, but still find that this and related terms are log-jammed in his mind by his inability to use for himself the "thinking words". These are often so much part of his teacher's vocabulary that their universal use is taken for granted. This point of view is confirmed by Lam (1985) and Cooper (1984:133) who found that poor readers were severely disadvantaged by their poor knowledge of vocabulary. More specifically, poor readers found it especially difficult to deduce meaning from context, and their sub-technical vocabularies were generally very poor. Not only has it been shown that poor vocabulary directly influences reading, but conversely, Marks et al (1974) in Bransford, (1979:122); Saville-Troike, (1984:216) and Hague, (1987:218) found that an improvement in reading comprehension can be directly attributed to an increase in vocabulary.

The schema-theoretic view of reading has also shed new light on views of vocabulary development and word recognition which are crucial to successful bottom-up decoding skills (Carrell 1988:242). Unlike traditional views of vocabulary, current thinking converges on the notion that a given word does not have a fixed meaning, but rather has a variety of meanings around a "prototypical" core, and that these meanings interact with context and background knowledge. Thus, Carrell says, "knowledge of individual word meaning is strongly associated with conceptual knowledge - that is, learning vocabulary is also learning the conceptual knowledge associated with the word". On the one hand, an important part of teaching background knowledge is teaching vocabulary related to it, and, conversely, teaching vocabulary may mean teaching new concepts, and new knowledge. "Knowledge of vocabulary entails knowledge of the schemata in which a concept participates, knowledge of the networks in which that word participates, as well as any associated words and concepts" (243).

Grave's (1975, in Weimann,1986:22) observes that:

If the development of the specialized language (terminology) of geography is not linked to the child's real world perception, upon which rests the construction of the child's conceptual schemes, or if the child's understanding of such specialized language is lacking, then the child will be at a distinct disadvantage as far as the learning of geography is concerned.

Further, Welsch (1977, in Weimann,1986:22) points out that:

It is difficult to think of concepts, precepts and terms in isolation. Because they are so interrelated, any shortcoming on the part of the pupil in making sense of any of them is likely to result in a decreased ability to learn geography. In the classroom situation, the higher up the scale of conceptualising the child goes, the greater becomes the dependence upon a suitable grasp of the language involved.

Finally, Carrell (1988:243) also points to cross-cultural differences in vocabulary and that meaning may be represented differently in the lexicons of various languages.

Vocabulary has been shown to be a significant factor in the readability of content subject textbooks intended for ESL readers. In the discussion below, those aspects of vocabulary which are known to cause readability problems for the ESL reader in particular, are examined in more detail.

ASPECTS OF VOCABULARY AFFECTING THE READABILITY OF ESL TEXTBOOKS

An overview of recent literature on vocabulary in content area textbooks (Williams and Dallas, 1984; Cooper, 1984; Lam, 1985; Williams, 1985; Perera, 1986; Hague, 1987; Strother and Ulijin, 1988; Carrell, 1988; van Rooyen, 1990; Lanham, 1990) raises the following twelve significant points about vocabulary and how it is likely to affect the readability of textbooks prescribed for young ESL pupils:

- 1) Words of high frequency or familiarity to the reader will contribute to more readable writing.

For example: **give** instead of **assign**
 wind instead of **breeze**
 mealie instead of **maize**
 seed instead of **grain**

Conversely, Lanham (1990:176) believes that unknown vocabulary, unsupported by context, is a major cause of reading difficulty. In particular, ESL readers can be expected to have difficulty with text in which the unknown words are too dense. These difficulties are compounded when the text does not provide semantic reinforcement in the form of known vocabulary.

- 2) Concrete words are more readable than abstract words. For the ESL reader, one abstract word by itself, although less readable, is not likely to pose a major problem. But in association with other contributions to impaired readability like long sentences, complex syntax and paragraph structure; one abstract word might be the decisive factor for comprehension. "Abstract words are a particular problem for the L2 reader when presented in quick succession" (Williams, 1985:12).
- 3) Shorter words are more readable than their longer synonyms, mainly because shorter words are usually of higher frequency and therefore familiarity.
- 4) In simplified texts, words "imported" from primary source materials may be too difficult. Such words, taken from a text originally written for a different readership, are unfamiliar to the average primary school pupil.
- 5) Active verbs are more readable than passive verbs. An active verb is shorter, more familiar, and thus promotes a stronger mental image, for example: the active verbs in - The miners **are digging** for gold; are more readable than the passive verbs in - The gold **is being dug** for by the miners. Also, the active verb marks the SVO relationship more clearly than the passive. In addition, Perera (1986:58) in her study of the differences between narrative and expository texts found that three-quarters of the verbs in narrative passages were active and dynamic. On the other hand, in expository texts, only half of the verbs were active. She argues that "the heavy use of passive verbs ... contributes to the lack of momentum evident in so much expository text".

6) Intensifiers

Writers need to be careful that intensifiers used are i) necessary, and ii) appropriate in meaning, to ensure that a young reader's perception of degrees of intensity is consistent and correctly reinforced. Examples of the three main categories of intensifiers are:

Emphasizers e.g. definitely

Amplifiers e.g. completely

Downtoners e.g. partly

7) Where possible avoid homonyms (words which have the same sound and/or spelling but have different meanings). The following examples illustrate the potential for confusion, given that young ESL readers find it difficult to work out the meaning of a word from its context:

Same spelling, different sound:

Lead - V - to go before, show the way, etc.

N - heavy (soft, blue-grey) metal

Same sound different spelling: bare and bear

bare - adjective - without clothes (naked person)

- without leaves (a tree)

- empty (a cupboard)

bear - N - a large, hairy animal

V - to carry a heavy load

Since weaker ESL readers are often reading on a word-by-word basis, and often lack the ability to draw on contextual clues, they are likely to draw on the primary meaning of the homonym and/or on the meaning within their contemporary experience, which may or may not be the meaning intended by the author. The ESL reader's confusion with homonyms is increased when several appear close together.

Stahl in (Hague 1987:219) proposes a theory of lexical understanding which suggests that the learner passes through three stages or levels (Association, Comprehension and Integration), as follows:

- a) Lexical knowledge develops from knowing a word in a single context (association), through,
- b) having access to multiple contexts in which the item can be used (comprehension), to
- c) being able to manipulate the item to produce original contexts for it (integration).

According to Williams and Lanham, the young ESL reader in the first year of EMI is likely to be at the association stage.

- 8) Idioms cause problems for all groups of ESL readers. For word-by-word readers, an idiom (a phrase which means something different from the meanings of the separate words), can cause immense difficulty (Williams 1985 and Lanham 1990). Under the heading of '**opaque idiom**', Lanham (1990:178) includes figures of speech, fixed expressions, metaphor and phrasal verbs to be serious problem areas for young ESL reader. Examples are:

- to be **hard up** (to be without money - not: not soft, not down)
- He **slipped up** badly (made a serious mistake - not: fell)
- This will **fit the bill** (it will do the job etc - not: fit onto or into...)

- 9) Take advantage of the reader's familiarity with collocations. Words collocate when they accompany each other in a way that sounds natural. For example, for the average Western adult, **strong** collocates with **coffee**, but **powerful** does not. In connection with idioms and collocations, Lanham (1986:6) points out that:

The competent reader creates expectations at the word level, predicting what is to come from cues coming from words, structures and meanings which themselves predict the words, structures and meanings that lie ahead. The words in our vocabulary are extensively linked with others in co-occurrence probabilities arising from formulaic expressions, collocations, idioms and factual knowledge of the world, in fact, all favoured ways of saying things. Thus, for example, **a time** is predicted in children's stories by **Once upon a ...** It should be noted that having these

co-occurrence expectancies is a product of extensive exposure to reading texts in the language or living in the culture; they are not the products of rules.

The young black ESL reader should therefore not be expected to be familiar with English idioms, favoured ways of saying things and common co-occurring words in English.

- 10) Use specialist terminology only when necessary. Williams (1985:17) writes that specialist terminology makes for economic writing with precise meaning, but that writers should be sensitive to terms that may not be familiar to the reader, and assist the reader to their meaning in cases of doubt. "Abuse of terminology" makes the reader's task very much more difficult. (See also Strother and Ulijn 1988.)

- 11) Obscure reference words are confusing. Lanham (1990:178) refers to the reader's difficulty in finding the referent in the real world, when the reference is not obvious for various reasons. For example:

... **his four-footed friend**: "You can have the puppy if you look after it", said mother. And **it became his**.

- 12) Obscure substitute terms used as a cohesion device are confusing. Lanham (1990:178) refers to the use of substitute words whose relationship with the words they are substituting is not clear to the ESL reader. For example:

The mother and child walked up the hill towards the store carrying two brown carrier bags. "It is hot today", said the **lady** as she put down her **heavy parcels**.

On introducing new vocabulary and terminology

The reader inevitably meets many new words, especially specialist terminology, in a textbook. The extent to which the reader can cope with the new words being presented will depend very much on how well new vocabulary and terminology is introduced (Williams, 1985:21). Nuttall and

Young (1989:248) agree that text that makes no attempt to assist with new terminology can be expected to cause major problems for the ESL reader.

Williams (1985) and Lanham (1990) suggest a number of ways in which authors can introduce young ESL readers to new or unknown vocabulary in order to facilitate the reading process. They suggest that writers should:

- capitalize on the reader's knowledge of the world and use their background knowledge to make comprehensible analogies;
- use comprehensible illustrations with labels (for details see the discussion of visual literacy on pages 91 - 94);
- contrast unknown words with a more common meaning;
- restate in more comprehensible terms;
- provide support in the surrounding context e.g. semantic reinforcement;
- where possible provide a mother-tongue translation in brackets, following an unknown word. (Lanham points out, however, that mother-tongue translations often do not exist - personal communication 1990)

Williams adds that glossing can be useful, bearing in mind the following important readability factors:

- a) The standard dictionary format is not always suitable for young ESL readers.
- b) Glosses sometimes contain too many abstract words that defy the formation of a mental image.
- c) A gloss should not contain a syntactic structure that would not be used in the text itself.
- d) A gloss need not always be given in words. Sometimes artwork and a few words is better.
- e) Examples in glosses are almost always helpful.
- f) A gloss should not contain words that are more difficult than the word being glossed.

SYNTAX

Introduction

In section 2 of this chapter it was explained that several studies have shown the important role played by linguistic competence, in this case grammatical knowledge, in native and non-native reading (see Clarke, 1979, 1980; Cooper, 1984; Devine, 1988; Eskey, 1988; Grabe, 1988; Carrell, 1988). The current emphasis in ESL reading research on "holding in the bottom" of the interactive reading process, emphasizes among others, the importance of syntax in the reading process. Leech, Deucher and Hoogenraad (1982:12) point to the importance of syntax as a factor in the writer-text-reader interaction, as follows:

If the main function of language is to communicate with other people ... and the resources of the language, including grammar, are used not only for efficient communication of ideas, but for effective communication in a broader sense ..., then the way we construct a sentence - the way we put the parts together - can contribute to the effect it makes on a reader ...

This section is concerned, not with a comprehensive description of English syntax as in Quirk et al's **A grammar of Contemporary English** (1975), but with those aspects of syntax that are likely to affect the readability of expository texts intended for young ESL readers. In this regard, Berman's 1984 process-oriented approach is used as a framework for this section for three reasons. Firstly, it lays much greater stress on the interaction of syntax and the reader's processing strategies than do earlier psycholinguistic studies. Secondly, this approach, by focusing on readers' attempts to find the main constituents of sentences, provides a framework for a number of apparently unrelated syntactic features; those which are known, or thought to cause reading difficulties for the young ESL reader. Finally, a process-oriented approach does not "derive its hypotheses directly from a syntactic model" (Alderson and Urquhart (1984:159). Rather, hypotheses are derived from alternative sources which more closely reflect the interactive nature of the reading process by accounting for the reader and, for example, syntactic equivalents or non-equivalents that may affect reading.

Syntax as a factor in the readability of texts

Although in reading syntactic decoding does not proceed in isolation from semantic factors, Berman (1984:139) claims that efficient EFL readers must rely - in part, though not exclusively, - on syntactic devices to get at text meaning. Cooper (1984:133) shows that "unpractised" readers display weaknesses in understanding syntactic features, which clearly affect comprehension. Berman proposes therefore, that in order to get at the basic propositional content of a sentence, readers must be able to manipulate the following interrelated components of sentence structure:

- 1) Constituent Structure - what the parts of a sentence are, and how they interrelate hierarchically.
- 2) Structural Items (or markers of Constituent Structure) - function words and affixes which link constituents or serve as markers of grammatical relations and of constituent structure. For example; the plural **s** marker, and adjectival **al**.
- 3) Dependencies - relations expressed between discontinuous elements by structural items, such as **so** and **that** in this sentence: **So** widespread had the habit of reading the Bible in English become **that** official steps were taken to combat it.

1. Constituent Structure

Berman (141) points to the research of Wood (1974) and Clark and Clark (1977), which shows that "parsing sentences into their natural surface structure constituents clearly facilitates the speed at which sentences can be processed" regardless of the grade, level or the skill of the reader. This research seems to confirm her claim that a reader "must first and foremost recognize the basic parts of a sentence: what constitutes its main and subordinate clauses, what their predicate and arguments are in propositional terms, the subject-verb-object (SVO) of surface syntax, and the noun-verb-noun (NVN), actor-action-patient semantic relations. She argues that where the typical expectations of the reader are violated by shifts in the expected ordering, as in passive transformations, his fluency may be disrupted and hence comprehension hindered. (See also Bever 1970.)

2. Structural Items (markers of constituent structure) and Dependencies

Berman (143) explains that in English, a single structural item may perform various functions. Thus, its occurrence is no guarantee of a given type of constituent to follow. She shows for example, that this is true of **one** as a pronominal substitute and as a quantifier. Her research suggests that EFL/ESL readers, as a strategy, tend to select one function for any given structural item. When it marks some other function in the text, expectancies are not met and comprehension is impeded. She goes on to point out that handling the three components (constituent structure, structural items and dependencies) during the reading process may be complicated by "perceptual factors such as heaviness and opacity" (140) discussed below.

a) Heaviness as a potential source of difficulty

By heaviness Berman (142) refers to constructions which extend the basic NV(N) structure so that one or more of the sentence constituents is "heavy; containing many sub-parts of embedding or modification". She emphasises that heaviness is not a straightforward function of linear length. Rather, the problem "seems to concern the amount and depth of information which the reader must store in memory in moving from one constituent to the next, and how hard the transition becomes as a result" (142). Lanham (1990:177) refers to this as "sentence structure overload".

Perera (1986:58), in her research on sentence-level differences between fiction (narrative) and non-fiction (expository), found the

following major differences which support the findings of Berman and Lanham discussed above:

1. There are more than twice as many "interrupting constructions" in expository texts, than in narrative texts. (i.e: any "non-restrictive, post-modification of the subject noun and also any adverbials that occur between the subject and the verb".) She claims that heavy use of long interrupting constructions makes it difficult for the reader to connect the subject and the verb. If the subject is lost from memory by the time the reader reaches the verb, then either a wrong connection is made, or the reader has to re-read the sentence.
2. In narrative texts children are exposed to subordinate clauses that they use frequently in speech. In expository texts, however, they meet "a considerable density of clause types that are fairly unfamiliar". These she refers to as "advanced subordinate clauses", which include:

- adverbial clauses of concession introduced by "although";
- nominal clauses functioning as subject of the sentence (See also Stockwell, (1977;156);
- and, some kinds of relative clause.

She claims that this difference between the occurrence of subordinate clauses in narrative and expository texts goes some of the way towards explaining why children who can read stories cannot always understand the complex relationships expressed in their textbooks.

Further, Quirk et al (1972:934) found that expository writing has more than four times as many noun phrases with "complexity and multiple complexity, and a distinctly lower proportion of names and pronouns among its simple noun phrases" than in narrative writing. In a similar study, Perera (1986:60) found that only 25% of noun phrases in the narrative texts she analysed were complex, as against 43% in expository texts. She found, with regard to

syntactic features, that childrens' expository texts are linguistically very similar to adult's" (62).

In the light of the above evidence, Williams' (1985:30) recommendation of the avoidance of extended subjects which make it difficult for the ESL reader to identify the "sentence skeleton" is appropriate. He also agrees that overlong sentences are difficult to read. He goes on, referring to Botel and Granowsky's syntactic complexity formula (see appendix A), to recommend as a "rule of thumb", that writers should try to avoid writing sentences consisting of more than three clauses. On the other hand, however, Williams (25) and Nuttall and Young (1989:251), also point out that although short sentences are generally more readable than longer sentences; a succession of short staccato sentences disrupts the flow of reading, breaks up the cohesion of a text, and impedes comprehension. Lanham confirms this by warning (1989:5) that simplification strategies, like making a text too simple, by making all sentences short and simple, reduces reader interest. Bransford (1979:124) has also found that children prefer moderate degrees of syntactic complexity to syntactic simplicity.

b) Opacity versus Transparency

Berman (142) suggests that the EFL reader needs maximal transparency in marking the relations between one part of the text and another. That is, certain cohesive devices (see pages 62-70 for further discussion of cohesion) may render a text "opaque" to the FL reader. These may take the form of **deletion** e.g. lack of relative pronouns in relative clauses; or of **substitution**, for example, nominal **one** as grammatical substitute for repeated lexical material, as well as lexical substitution.

She goes on to point out that styles approved in English rhetorical tradition may run counter to the requirements of maximal transparency from the EFL reader's point of view. This opacity might be particularly acute in the case of the reader whose mother-tongue does not rely on, for example, lexical and grammatical

repetition. The point to note from Berman's discussion is that the use of mother-tongue equivalences of English syntactic structures should facilitate the EFL/ESL reading process, while non-equivalent syntactic structures are likely to cause reading problems.

Aspects of syntax affecting the readability of ESL textbooks

Following Berman, Lanham's (1990:175-181) discussion of aspects of syntax that are likely to cause reading problems is particularly appropriate. He recommends that in writing for the southern African ESL primary pupil, syntactic structures such as substitution and alternation should be avoided as there are no mother-tongue equivalents. Similarly, "syntactically controlled ellipsis (a common cohesion device in English) has little or no mother-tongue equivalence. Carrying forward already expressed semantic content (as the meaning of the device) is foreign to the child", and has a strong potential for delaying the young black reader. However, Lanham does not suggest that it be avoided, only that it be transparent in use (personal communication, 1990).

Lanham cites the following four examples of structures (discussed above) taken from Std 3 texts, to illustrate the difficulties they present to the young ESL reader:

- 1) Ellipsis, a syntactically controlled deletion as a cohesion device. Example:

Mary did want to go home but not now.

John promised his friend that he would.

- 2) Non-equivalent syntactic structures

The English Noun and Noun (modifier and head), which is translated by Genitive and Relative Clause structures in southern African languages. Examples:

Perfect participles in adjectival function:

the opened letter; the cane-covered hills.

Noun modifier & Noun head: paper hat, clock face.

The point about this structure being that meaning is derived pragmatically: the more

context dependant the meaning becomes, the less accessible it is to the ESL reader.

Gerundives: Mary's mother doesn't like her playing with me.

Noun & infinitive: in days to come, an offer to help.

- 3) Convoluted syntax making agents (actors), instruments, patients (objects), etc., obscure. In particular, transformations which transpose constituents such as inversions and passives with deleted agents. For example:
- To grow, plants need water.
 - Running to meet her were Nomsa and her friend.

Non-logical subjects and objects, as in the following example, are extreme cases:

Peter is sure to help his friend.

(The writer is sure - not Peter.)

(See also Williams 1985 and Nuttall and Young 1989.)

- 4) Sentence structure overload - Extended constituent structure usually making, in consequence, a sentence too long, e.g. multiple relative clause embedding. For example: This is the cat that chased the rat ... Jack built.

The cumulative effect of syntax on readability

Nuttall and Young (1989:255) point out that the reading of school texts is seldom a case of reading isolated or individual sentences and that any individual syntactically complex sentence does not in itself create a readability problem. They agree with Williams (39) that "the really important thing in any discussion of syntactic structure is that its impact on readability is cumulative". Williams illustrates this point as follows:

? A familiar structure in isolation will not be a problem.

?? But the less familiar a structure in isolation, the greater the readability problem.

??? Particularly if accompanied by unfamiliar words.

- ???? Furthermore, the effect of a sequence of structures that are difficult to process will add to the problem.
- ????? A structure embodies not only grammar, but also meaning. Therefore, if an unfamiliar structure additionally presents a newly-introduced item of content, then the problem grows.
- ?????? Even more so if a sequence of items of new content is introduced in quick succession.
- ??????? If all this is accompanied by unhelpful (often cosmetic) artwork and illustration, poor paragraphing, inadequate cohesion, etc, then the reader is in serious trouble.

The cumulative impact of the two factors discussed so far (vocabulary and syntax) on the readability of texts intended for young ESL readers seems clear. However, though significant, this impact must be seen to be only part of a number of other interrelated, text-based factors which interact with a number of reader-factors to determine the readability of a text. The next two sections introduce another set of text-based readability factors, namely: cohesion and coherence.

COHESION IN WRITTEN DISCOURSE

The term DISCOURSE applies to "both spoken and written language, in fact to any sample of language used for any purpose" (Leech, Deuchar and Hoogenraad, 1982:133). A more focused definition of discourse is proposed by Newby (1987,79) as follows:

Stretches of language longer than a sentence are called discourse and, like sentences, they also have systems which bind them together and give them shape and unity between their boundaries.

Discourse analysis seeks to discover the principles of construction of texts, which provide a means of evaluating texts as either good or bad, readable or unreadable. Following Widdowson (1978: Chapter 2, and Halliday and Hasan 1976:2):

Normal linguistic behaviour (in this case, written expository text), does not consist in the production of separate sentences, but in the use of sentences for the creation of discourse.

The emphasis therefore in this and following sections, unlike the previous two sections, will fall on the "use of sentences" in the creation of expository discourse for ESL primary school children. In the previous section on syntax, the focus was on intra-sentential factors affecting readability. In this section, the focus broadens out beyond the sentence as a unit of language, to relationships between and across sentences, otherwise known as inter-sentential relationships within discourse.

Halliday and Hasan's cohesion theory

Before discussing inter-sentential factors affecting readability, it is necessary to explain what is meant by the term cohesion. According to Halliday and Hasan (1976:4) who have led cohesion research:

Cohesion occurs where the INTERPRETATION of some element in the discourse is dependant on that of another. The one PRESUPPOSES the other, in the sense that it cannot be effectively decoded except by recourse to it. When this happens, a relation of cohesion is set up, and the two elements, the presupposing and the presupposed, are thereby at least potentially integrated into a text.

(See also Morgan, 1978; De Beaugrande 1981)

Chapman (1986:9) points out importantly, in view of the schema-theoretic view of the reading process, "that the presupposed antecedent of the referential item may be present either in the text or in the real world". In either case, the reader must be able to follow the reference to its antecedent and make the necessary links.

Halliday and Hasan (8) make it clear that "cohesive relations have in principle, nothing to do with sentence boundaries". If both the referential item and the antecedent occur in the same sentence, they regard its occurrence as a function of syntax and not cohesion. They argue that cohesion is displayed in the ties that exist between a presupposed item and a presupposing item (which may or may not be structurally related), and that text derives coherence from these cohesive ties. The concept of ties, they claim, makes it possible to analyze a text in terms of its cohesive properties and give a systematic account of its patterns of coherence (4). Cohesion, therefore, refers to the linguistic means whereby a text is enabled to function as a single meaningful unit (30). Put more simply, Nuttall and Young (1989:256) and Williams (1985:43), define cohesion as follows:

Cohesion in texts refers to the relationships that exist within and principally between sentences, and which make a text an integrated unit rather than simply a list of independent sentences.

Halliday and Hasan (1976:6) divide the cohesive devices in a texts into two broad categories, namely: **grammatical** and **lexical** cohesive devices. **Grammatical devices** include: reference, substitution, ellipsis and conjunctions; while **lexical devices** include the use of reiteration (including synonyms and hypernyms), and collocations.

Grammatical Cohesive Devices

Reference

Reference refers simply to one item in the text referring to another, either in the text or outside it. More specifically, it is a:

... semantic relation, one which holds between meanings rather than between linguistic forms; it is not the replacement of some linguistic form by a counter or a blank, as are substitution and ellipsis (explained below), but rather a direction for interpreting an element in terms of

its environment - and since the environment includes the text ... reference takes on a cohesive function. A reference item signals 'supply the appropriate instantial meaning, the referent in this case, which is already available (or shortly to become available)'; and one source of its availability is the preceding (or following) text (226-227).

Halliday and Hasan divide all reference devices into two main categories, namely: exophoric and endophoric reference (31).

Exophoric reference signals that reference must be made to the context of situation, outside the text. In the case of expository text, reference is made to the "real world". Endophoric reference is reference within the text under two general headings:

- a) Cataphoric reference refers forward in the text to succeeding elements, or to following text, to which the reference is in no way structurally related.
- b) Anaphoric reference refers backwards in the text to preceding elements.

Both exophoric and endophoric reference, therefore, embody an instruction to retrieve from elsewhere, the information necessary for interpreting the passage in question. What is, however, essential in every instance of reference, "is that there is a presupposition that must be satisfied. The thing referred to has to be identifiable somehow" (Halliday and Hasan 1976:33).

Under their general heading of reference, Halliday and Hasan propose the following sub-categories, which are all either exophoric or endophoric references and which can function as either cataphoric or anaphoric references.

- i) Personal reference - reference to people and things by specifying their function in the discourse.
- ii) Demonstrative reference - essentially a form of "verbal pointing". The writer locates the referent by locating it on a scale of proximity.
- iii) Comparative reference

- a) General comparison in terms of likeness and unlikeness: two things may be the **same**, **similar** or **different** without respect to any particular property.
- b) Particular comparison, comparison that is in respect of quantity and quality.

Substitution

Substitution refers to a process within the text when one item is replaced by another. It is a "purely textual relation, with no other function than that of cohering one piece of text to another" (226). The substitute signal in effect "supplies the appropriate word or words already available in the text; it is a grammatical relation, one which holds between the words and structures themselves rather than relating them through their meanings". Substitution can involve nominal, verbal or clausal items within the text.

Ellipsis

Essentially ellipsis and substitution are the same process; however, ellipsis can be interpreted as that form of substitution in which the item is replaced by nothing (88), otherwise referred to as "substitution by zero" (Halliday and Hasan (1976:142) and Williams (1985)). It is important to note, however, that ellipsis does not refer to any and every instance in which there is some information that the reader has to supply from his own evidence. It refers specifically to syntactically controlled omissions.

Conjunctions

A conjunction is different in nature from the other cohesive relations. It is not simply an anaphoric relation:

Conjunctive elements are cohesive not in themselves but indirectly, by virtue of their specific meanings; they are not primarily devices for reaching out into the preceding (or following) text, but they express certain meanings which presuppose the presence of other components in the discourse (226).

They are a semantic expression of a link in the discourse. They are therefore not "search instructions" as other cohesive devices are, but "specifications" of the way in which what is to follow is systematically

connected to what has gone before. Halliday and Hasan distinguish between four types of conjunctions: 1) Additive, 2) Adversative, 3) Causal, and 4) Temporal conjunctions.

Lexical Cohesion Devices

i) Reiteration

Reiteration is a form of lexical cohesion which involves the repetition of a lexical item. At one end of the scale it refers to the use of a general word to refer back to a lexical item. At the other, it refers to the repetition of a lexical item; and a number of things in between such as the use of a synonym, near-synonym, a superordinate term or a general word (278). All these have in common the fact that one lexical item refers back to another, to which it is related by having a common referent. The second and subsequent occurrences of a word in a text may therefore be: 1) identical, 2) inclusive, 3) exclusive, or 4) unrelated.

ii) Collocation

According to Halliday and Hasan (284), collocation is the "most problematic part of lexical cohesion". It is achieved through the association of lexical items that regularly co-occur. The cohesive effect, they argue, depends "not so much on any systematic semantic relationship as on their tendency to share the same lexical environment, to occur in collocation with one another" (286).

In general, any two lexical items or groups of lexical items that tend to appear in similar contexts - will generate a cohesive force if they occur in adjacent sentences. Such patterns occur both within the same sentence and across sentence boundaries, and are largely independent of the grammatical structure. This includes not only synonyms, near-synonyms and superordinates, but also pairs of opposites of various kinds; complimentaries (e.g: boy ... girl), antonyms (e.g: like ... hate), and converses (e.g: order ... obey).

Limitations of the cohesion theory

Halliday and Hasan's comprehensive account of cohesion, although it provides the researcher with a useful instrument for assessing a text's

level of cohesion, has one serious limitation. It is text-bound in the sense that it gives a systematic account of a text's structure (in terms of its cohesion, which they claim to be the cause of its coherence), but does not account for the significance of the reader's role. That is, what the reader is able to do with the text, which depends, among other things, on the reader's background knowledge. Lanham (1986:6) confirms this view by pointing out that "attacking a text relying only on information which flows from the sentences present in the text (as Halliday and Hasan's theory suggests) is, in effect, not to comprehend". Halliday and Hasan's view of cohesion, it would seem, amounts to a "bottom-up" view of text, where meaning is "ready-made" in the text, waiting to be decoded by the reader.

Following the schema-theoretic view of reading, it is important to consider, in addition to Halliday and Hasan's cohesion theory, Widdowson's perspective on cohesion. His perspective has as its basis, the assumption that a text is in fact discourse, which involves the writer, text and reader in working out meaning (1978:31).

While Widdowson agrees with Halliday and Hasan that cohesion is established by reference to overtly expressed formal syntactic and semantic signals; a major difference between the two views is that Widdowson regards text as discourse, and perceives cohesion to be the "overt relationship between **propositions** expressed through sentences", rather than between only **grammatical** and **lexical** items. For Widdowson, a proposition refers to the writer's intended meaning as it is expressed through a sentence within a particular context. He explains that sentences used in discourse "do not in themselves express independent propositions: they take on value in relation to other propositions expressed through other sentences" (26). In other words, cohesion refers to the way sentences and parts of sentences combine so as to ensure that there is propositional development. He points out that generally speaking, propositions are organized in such a way that what is known, or given, comes first in the sentence, and what is unknown or new, comes second (25).

In Widdowson's view then, discourse is cohesive to the extent that it allows for effective propositional development, and sentences are appropriate in form to the extent that they allow for this development. Further, he points out (27), this appropriacy will often require sentences not to express complete propositions. He goes on to point out that the difficulty a reader may have in recovering propositional development is a measure of the degree of cohesion exhibited by a particular discourse. Difficulty may arise because the form of a sentence represents an inappropriate arrangement of information in respect to what has preceded. The work the reader has to do in making the necessary readjustment disturbs the propositional development which impairs effective comprehension.

ASPECTS OF COHESION AFFECTING THE READABILITY OF ESL TEXTBOOKS

The research of Irwin (1980:325), Smith and Elkins (1984:156), Riley (1986:577), Chapman (1986:9) and Wishart (1987:40), suggests that comprehension of any given text depends heavily on the reader's ability to process the relationships between elements - relationships which are "pointed out" through the use of cohesive elements. If a text does not signal the relationships which exist between the elements, the reader must make his own inferences to support the missing links. This leads to increased processing demands and comprehension difficulties. The following discussion will focus on those aspects of cohesion in expository texts which are likely to cause difficulty for the ESL primary school reader.

Lanham (1990:178) has found cohesion devices to rank particularly highly as a source of difficulty for young South African ESL readers. He identifies two aspects of cohesion as particularly problematic, namely: Obscure lexical substitution (as a cohesion device), and Ellipsis. Perera (1986:56) and Williams (1985:50) identify Conjunctions as another major source of difficulty.

Obscure substitute terms (as cohesion devices)

Substitute terms function as cohesion devices in text where a word or a phrase, not within a single sentence, is replaced by another word or phrase (Halliday and Hasan, 1976:8). Nuttall and Young (1989:256),

point out that there is the danger that the ESL reader will not make the connection between the original word and the substitute used instead, later in the passage. They go on to warn that by far the largest readability problem, in terms of substitution, is caused when a general noun is used to replace a phrase or clause.

Ellipsis

Lanham (1990:181) regards "gaps in the information" due to ellipsis, to be stumbling points for the young ESL reader for two reasons. The first, is that as a common cohesion device in English, it has "little or no equivalence" in African languages, and is "foreign to the child". The second, following from the first, is that the young African reader expects the text to "tell him everything" (179).

Conjunctions

Williams (1985:50) and Perera (1986:56) identify the conjunction as an important element of cohesion which causes serious comprehension problems for ESL readers. Perera points to evidence (Garner, 1977; Henderson, 1979) that shows that even students aged 15 and over find conjunctions (e.g. similarly, therefore, nevertheless, etc) as sentence connections, particularly difficult. She points out that, on the whole, expository text is more dependant than narrative on conjunctions or "discourse markers" as they are otherwise known. Williams (50) points out that the function of a discourse marker is to indicate to the readers the general relationship between what they have just read, and what they are about to read. Hence, if a conjunction or discourse marker, present in the text is not understood, comprehension will be affected.

Another difficulty associated with discourse markers (conjunctions) is that certain words can function as discourse markers in one context, but not in another. For example, consider the function of the word **yet** in these sentences:

- i) As discourse marker/conjunction:
He was very weak because he had not eaten any food for two days. **Yet** he still managed to win the race.

ii) As adverb:

He has not **yet** done his homework.

Such ambiguity may lead to comprehension problems.

COHERENCE

COHERENCE IN WRITTEN DISCOURSE

In this section it will be shown that while van Dyk (1977), Widdowson (1978) and Carrell (1982) recognise the value of Halliday and Hasan's cohesion theory as it applies to cohesive factors, they dispute the claim that it is the **cause** of coherence for two main reasons. The first, is that overt links are not necessarily present in coherent text. The second, is that the reader's background knowledge is not accounted for.

Coherence and overt links in text

Van Dyk (1977:92) explains that coherence is not well-defined and argues that sentences or propositions in a discourse may form a coherent discourse, even if they are not all connected to every other sentence or proposition. This view is supported by Widdowson (1978:29) who shows that overt links are not necessary for coherence. He argues that in the case of cohesion, we can infer the illocutionary acts from propositional connections which are overtly indicated. In the case of coherence, "we infer the covert propositional connections from an interpretation of the illocutionary acts". For example, he points out, it is not difficult to provide

the following interchange with a plausible interpretation, in spite of the complete absence of cohesion:

- A: That's the telephone. (Request)
B: I'm in the bath. (Excuse)
A: OK. (Accept)

Once one establishes a relationship between the three utterances as illocutionary acts and thereby sees them as constituting a coherent discourse, one can then supply the missing propositional links and produce a version which is cohesive:

- A: That's the telephone. (Can you answer it, please?)
B: (No, I can't answer it because) I'm in the bath.
C: OK (I'll answer it).

Coherence then, according to Widdowson, is measured by the extent to which a particular instance of language use corresponds to a shared knowledge of conventions as to how illocutionary acts are related to from

larger units of discourse (45). If we are not familiar with the conventions, then the language is incoherent to a degree corresponding with our unfamiliarity. It may, of course, be cohesive and

we may recognize how the propositions relate to each other by reference to syntactic and semantic clues. What we do not recognize, is the illocutionary significance of the relationships. This means that if we are asked to say what the piece of language is about we cannot summarize, we can only quote (45).

It is therefore possible that a writer "can arrive at a number of cohesive versions of a text, but the most acceptable unit of discourse will depend on which is the most coherent" (52).

Further, referring to the coherence of a discourse as a whole in terms of knowing what it is about, van Dyk (1977:238-243) explains that:

A macro-speech act is a speech act (proposition) performed by a sequence of speech acts (propositions) so that a sequence of various speech acts may be intended and understood, and hence function, as one speech act. In this way, a particular discourse may be assigned its global coherence and identification, and hence its global function, within the framework of a macro-speech act.

He points out (246) that the reader "must be made to know what major speech act is performed" by the discourse by making explicit the relationships between the minor speech acts or propositions.

Thus, according to Widdowson (28), where L1 readers recognize that there is a relationship between the illocutionary acts which propositions, not always overtly linked, are being used to perform, then we are perceiving the coherence of the discourse.

Coherence and background knowledge

The second cause for disputing the cohesion theory's claims about coherence stems from research which has emerged in the light of the schema-theoretic view of text processing. Carrell (1982:484) cites the research of Feathers, (1981); Bobrow and Norman, (1975); Morgan and Sellner, (1980); Freebody and Anderson, (1981); Steffensen, (1981), in

support of her argument that Halliday and Hasan do not account, in their discussion of coherence, for the significance of the reader's role.

Morgan and Sellner (1980) argue that Halliday and Hasan have misconstrued all their examples of cohesive ties by taking certain aspects of linguistic form as the cause, and not the effect, of coherence. Carrell, supporting this criticism, suggests that the reader's background knowledge of the topic and of the author's purpose, the ability to reason, and the assumption that the text is coherent, are important factors in enabling the reader to supply missing links. The reader does this by accessing the appropriate schema, not necessarily depending on overt cohesive links to make sense of a text. (See also van Dyk 1977:92.) The following example illustrates Carrell's point (484):

The picnic was ruined. No one remembered to bring a corkscrew.

She maintains that this mini-text coheres, not because there is a necessary linguistic, lexical cohesive tie between **picnic** and **corkscrew**, but rather because the L1 reader can access a familiar schema for interpreting it in which picnics and corkscrews go together. For anyone who cannot access such a schema (implicit knowledge assumed by the text) the text will fail to cohere. The illusion of lexical cohesion is created by the text's coherence.

Further, Steffenson (1981, in Carrell, 1982:485) argues that textual cohesion represents a potential which can be fully realized only when a reader appropriately identifies the schema underlying the text. In other words, accessing the appropriate background schema makes possible the complete processing of the cohesive elements in a text. If a reader does not have, or fails to access, the appropriate schema underlying the text, "all the cohesive ties in the world won't help that text cohere for that

reader" Carrell (1982:485). (See also van Dyk 1977: 95, on text macrostructure and coherence.)

An important point raised by Widdowson (1978:53) and Lanham (1986:7) in connection with the conventions of coherence, is that a knowledge of these conventions derives from the learner's experience of language use. It follows then, that the young ESL reader, who is only familiar with the conventions of narrative texts, can not be assumed to be able to recognize and use the conventions of expository text without some explicit prior guidance.

In conclusion, while Carrell and others have identified the limitations of Halliday and Hasan's cohesion theory in accounting for the coherence of discourse, this does not render their theory invalid or less useful. Halliday and Hasan's cohesion theory should instead be seen as complementary to the views of Carrell, Widdowson and van Dyk who account for the importance of the reader's background knowledge in 'constructing' the coherence of any text. Drawing on these two approaches, it is possible to analyse discourse in terms of the interactive view of reading. Halliday and Hasan's cohesion theory represents the bottom-up process where the reader reacts to clues in the text; while Carrell's background knowledge (schema) represents top-down processing, with the reader bringing information to the text.

ASPECTS OF COHERENCE AFFECTING THE READABILITY OF ESL TEXTBOOKS

In his discussion of aspects of coherence which are likely to present problems for the young black ESL reader, Lanham (1990:179-180) identifies five problem areas:

- 1) Inaccessible background knowledge
- 2) Missing propositions
- 3) Illocutionary force
- 4) Digressions from the topic line or logical progression of ideas
- 5) Implicit logical connection

1) Inaccessible background knowledge

Lanham (1990:181) points out that Johnson (1981) found that inaccessible background knowledge is the single most significant factor in reading comprehension. For the young primary school pupil reading in the second language: it means, for example, that the reader will interpret what he reads in the text in terms of its relevance to, and closeness of "fit" with, the components of his background schema. Because of different cultural experiences, this may not, in fact, amount to the intended message of the text. (See the discussion of Cognitive reading strategies on p 30.)

2) Missing propositions - information gaps

Every text contains missing propositions - assumptions about shared knowledge of the world of the topic being read about, which are unexpressed by the writer and subconsciously supplied by the reader. A complete grasp of the "world" of the topic or story can supply the missing information. However, this may be inaccessible to the young ESL reader who, "expects the text to tell him everything" (Lanham 1990:179). Writers should therefore be aware of the fact that:

What to the writer appears as a logical consequence, and obvious implication or next step in a sequence of actions or events, may not be so for the ESL reader with a different world view or life experience.

(Lanham 1986:6).

He goes on to recommend that, in texts for second language consumption, "it is better, therefore, to err in the direction of statements of the obvious" (6).

In considering the question: "Under what conditions may or should propositions remain implicit in a given discourse?" van Dyk (1977:108) produces the following formula which defines the conditions for a mother-tongue reader of English:

- a) A proposition q **may** be IMPLICIT if q determines the interpretation of a subsequent proposition r and if q is entailed (but not self-entailed) by a proposition p, preceding r.

In other words proposition r in text sequence $p \longrightarrow r$, cannot be fully understood unless the reader is able to infer the IMPLICIT proposition q as follows:



- b) A proposition q **should** be EXPLICIT if q determines the interpretation of r and if there is no proposition p such that p entails q .

In other words in the text sequence $q \longrightarrow r$, proposition q should be EXPLICIT if the reader depends upon it for the meaning of proposition r and there is no other proposition which directly influences its meaning. $q \longrightarrow r$.

However, for the young second language reader, Lanham's warning suggests that all texts should follow condition b) and make propositional links EXPLICIT wherever possible. Widdowson (1978:31) points out that when we produce discourse we make assumptions about what the reader can infer from what we write. If we judge correctly and make the right assumptions, then the reader will be able to reconstitute our meaning on the basis of the clues we provide and with reference to the knowledge he shares with us.

3) Illocutionary force - a writer's intent or attitude

According to Titone (1985:68) and Adegbija (1987) there is a complex set of locutionary act and illocutionary force combinations in English which need to be acquired. That these possible combinations are acquired by the ESL reader is of importance if the reader needs to comprehend any utterance in a specific language and culture. For instance, the illocutionary force of a proposition or sequence of propositions, reveals the writer's attitude or intent. It is assumed by the writer that the reader is able to make the necessary inferences which supply the full meaning of the discourse. In the content subject textbook, the ESL reader's task of inferring illocutionary force is made especially difficult when writers use indirect speech acts or propositions. That is, when the writer intends to communicate more than he actually says. The following example illustrates this point:

If you turn to page 10, you will find....

While this utterance appears to be an **optional request**, the illocutionary force is that of an **instruction**. If it is misunderstood, the reader/listener will miss the point and lose important information.

If Adegbija's observation (1987:43), that the encoding and decoding of speech acts involves cognitive processes in which the linguistic competence of the participants, their world knowledge, their psychological state, and their knowledge of socially and culturally relevant factors of the situation are accessed, activated and put to work in the process of inferring the meaning and the speech act function of utterances; then ESL readers in their first year of English medium instruction should not be assumed to be competent in this regard.

4) Digressions from the topic line

Referring to the logical progression of ideas as crucial in the propositional development of a text written for the young ESL reader, Lanham (1990:179), identifies digressions from the topic line or the logical progression of ideas, as likely stumbling blocks. He explains that non-sequiturs, or digressions, disrupt the child's grasp of the evolving topic or theme. It follows then, if the young unskilled reader is to be encouraged to construct the coherence of the text, and extract the theme that unites the whole text, that sentences which follow each other in descriptions etc should express logical next steps. The reader should not have to distinguish between digressions and the logical next steps and then have to reorder them to get the logical sequence. A proposition which expresses, for example, a reason for one which has gone before, should be transparently logical in that relationship (1990:86). This should facilitate the identification of the "central idea" sentence or sentences which all other sentences support and of which other sentences are obvious entailments (1986:7). In short, the ideal text for the young ESL readers should be written so that ideas are logically stated and related, and are mutually supporting.

This is particularly significant in the light of Perera's findings (1986:55) which show that sequentially ordered texts are easier to read, and that "whenever there is no strong sense of ordering in the writing,

there is no dynamism to carry the reader forward - so very strong intrinsic motivation is needed to keep reading at all".

5) **Implicit logical connection**

Implicit logical connection refers to instances in discourse when conjunctions (logical connectors) are not actually present in the text and have to be inferred by the reader. The following example illustrates the kinds of comprehension problems that are likely to result when textbook writers assume that ESL readers can make the "hidden connections".

() Driving along in the cart, Peter heard all the news.

The "absence" of the temporal conjunctive **while** is likely to result in: i) the sentence being processed as two separate, incomplete sentences, and/or ii) the reader being unaware of the passing of time implied, and/or iii) the reader being unaware of the implied presence of one or more persons telling Peter the news.

TEXT STRUCTURE

TEXT STRUCTURE AND EXPOSITORY DISCOURSE

Text structure, or the rhetorical organization of text, may be defined as the specific organization or pattern used in written discourse which allows for differentiation between text types such as narrative and expository. It also allows finer distinctions to be made between types of expository text such as descriptive, compare/contrast, or sequential pattern (Kintsch and Yarbrough, 1982; Kinney, 1985; Armbruster, 1986; Armbruster, Anderson and Ostertag, 1987; Armbruster and Anderson, 1988; Olhausen and Roller, 1988).

An important aspect of reading comprehension as viewed by schema theory, involves the process of choosing and verifying both content and formal (rhetorical) schemata in order to account for the text which is to be understood (Rumelhart 1977, in Carrell 1984:446). According to Meyer's text structure approach (1984:120), a skilled reader possesses a finite number of formal schemata related to text organization, and approaches text comprehension with the knowledge of how certain texts are

conventionally organized. For a particular text, the reader selects that formal schema in his repertoire which best accounts for that text. The schema employed to comprehend a text acts like an outline which guides the reader in organizing the text during the process of encoding. Likewise, during recall, the skilled reader-activates this same kind of schema and uses it to retrieve information about the text which is stored in memory.

The text structure approach

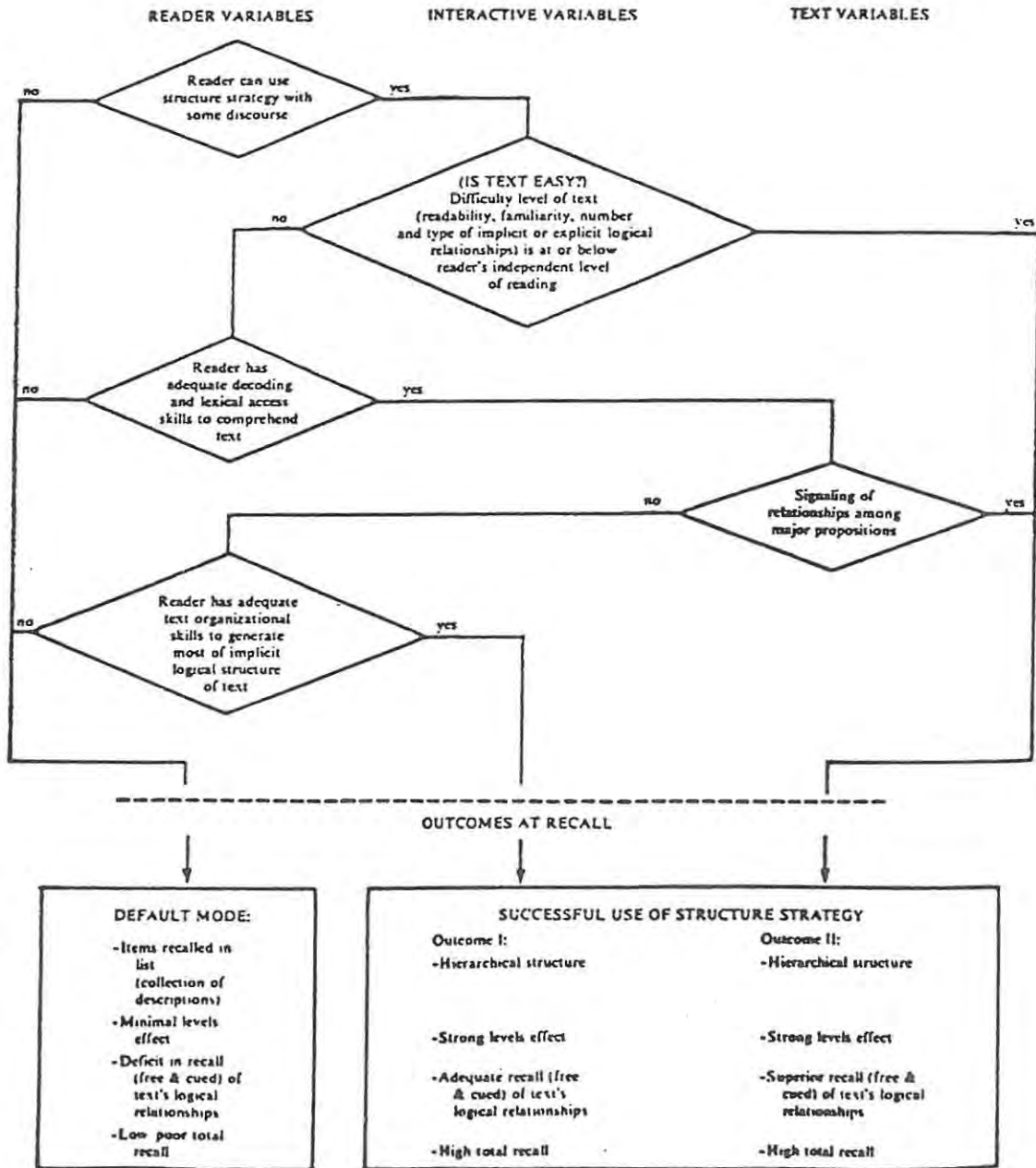
Meyer's text structure approach (1984:113-138), though it provides a clumsy approach to the teaching of text structure particularly in the ESL primary school context, (see Tierney et al 1984:152), nevertheless, provides a useful description of: i) aspects of the rhetorical structure of texts, and ii) how competent readers process texts.

Meyer proposes a model depicting the interaction of reader and text variables which affect the quality and quantity of recall from hierarchically organized text. See Figure 1 below, on following page. The model recognizes the signalling of text structure to be one factor in a series of interacting reader and text variables which affect recall. The relative effects of signalling on recall are seen to be dependent on such reader attributes as: the reader's ability to use the "structure strategy" (described below) in reading, adequacy of text organization skills, as well as the difficulty of the text being read.

Figure 1

From Meyer, B.J. in Flood, J. (1984) Promoting Reading Comprehension, p147.

Model depicting the interaction of reader text variables which affect quality and quantity of recall from hierarchically organized text.



Through application of Meyer's structure strategy (1975, 1977, 1979, 1984), all the information from a text is represented in a detailed outline called a content structure. The content structure depicts three important aspects of text: a) **the top-level structure**, b) **the macropropositions**, and c) **the micropropositions**.

- a) The top-level structure, schematic structure or macrostructure (Kintsch and van Dyk 1978), or superstructure (van Dyk 1979), is the rhetorical relationship that ties all of the propositions in a text together and gives it its overall organization. Top-level structures are typical forms of text that define it as a certain type, such as comparison, causation, collection, description etc. They are ways of organizing topics, but are independent of the topics.
- b) The macropropositions include the top-level structure of a text and the content and relationships in propositions occurring at the top third of the content structure. They are the main ideas from passages and are better remembered than the micropropositions. Frequently, in well-written texts, the macropropositions are explicitly stated. In text of poorer quality, macropropositions must be inferred by the reader from the micropropositions.
- c) The micropropositions include the propositions at the middle and bottom levels of the content structure. These propositions are found in clauses and sentences, and are connected to each other by referential clauses and sentences, by referential identity and such rhetorical relationships as collections, temporally ordered collections, and antecedent/consequent relations.

In summary, the text structure specifies the interrelationships among items of information which compose the text, as well as indicating the subordination and coordination of this information (Meyer 1975, 1977, 1979). Thus, a text structure or a macrostructure provides an organizational structure which can be used during reading for understanding information and judging its importance.

According to Kintsch and van Dyk (1978:363-373), using this model, a reader forms a macrostructure for the important ideas in text that are to be remembered. The macrostructure, which generally follows the structure of the text, is a reader's summary of the important information in a text. The reader then uses this macrostructure to recall a more detailed version of the text passage. The hierarchical summary, like a macrostructure, is a reader's summary, of the main ideas in text listed in the correct sequence.

It follows then, that if the reader possesses and activates the appropriate formal (rhetorical) and content schemata during reading, comprehension and recall are facilitated - see Figure 1. If, on the other hand, the reader does not access, or does not possess the appropriate schemata during reading, he will operate in the "default mode" - see Figure 1. The result, revealed in attempts to recall, is that all information is perceived as equally important and items are recalled in a list of points. There is no clear recall of logical relationships in the text and total recall of the content is poor (Meyer 1984; Armbruster et al, 1987; Spyridakis and Standal, 1987; Flood and Lapp, 1988; Ohlhausen and Roller, 1988).

Even if a reader does possess and activate the appropriate schemata, Meyer's model accounts for other factors which may cause the reader to operate in the default mode discussed above. These are discussed here because they relate to each of the main sections: vocabulary, syntax, and discourse discussed prior to this section. These variables are:

- Difficulty level of the text

Aspects of difficulty level include familiarity with the topic, readability, and the type, order and number of implicit or explicit logical relationships.

- Reader's adequacy of decoding and lexical access skills

If the reader does not have decoding and access skills to comprehend at the single-word level, then the default mode is the outcome.

- Signalling of relationships among major propositions

If students with adequate decoding and lexical access skills read text with signalling, then they will successfully employ the structure strategy. However, if signalling is not present, the outcome depends on

the text organization skills of the reader. If the reader's skills are not adequate, then the default mode will result.

FURTHER IMPORTANT CONSIDERATIONS

Cultural factors

Carrell (1984:465) reports that ESL students may fail to successfully identify the rhetorical organization of texts because they may not possess the appropriate formal schemata. This is particularly so if students come from a non-European background, and may be encountering "interference from the preferred native rhetorical patterns" (464). Steffenson et al (1979); Johnson, (1981) and Carrell (1987) have also shown that when both content and rhetorical forms are factors in ESL reading comprehension, content is generally more important than form. When both form and content are familiar, the reading is relatively easy; when both form and content are unfamiliar, the reading is relatively difficult. When either form or content is unfamiliar, unfamiliar content poses more difficulties for the reader than unfamiliar form. However, rhetorical form is more important than content in the comprehension of the top-level episodic structure of a text and in the comprehension of event sequences and temporal relationships among events. In other words, content and form play significant, but different roles in the comprehension of text (Carrell 1987:476 and Urquhart 1984:175).

Children's awareness of text structure

Investigations of the effects of text structure on recall of written discourse have demonstrated that adults are aware of aspects of text structure and use them in the process of reading and recall. The evidence is less clear, however, on whether young children are aware of text structure (McGee 1982:583). Taylor (1980:401) demonstrated that some students must be at least intuitively aware of structure in text since they use the author's structure to organize recall. However, studies by Tierney, Bridge and Cera, (1978-79) and Taylor, (1980), have produced conflicting evidence. Meyer (1984:132) concedes that further research is necessary before applying her findings directly to primary school pupils.

At least three such studies have, however, been conducted at the primary school level by Taylor, 1980 and 1982; McGee, 1982 and Kinney, 1985. Taylor (1982:339) points out that:

The dearth of research in this area is surprising because elementary school students appear to have considerable difficulty with the expository text found primarily in the content textbooks they are to read in school.

She also reports that in general, children experience greater difficulty comprehending and remembering expository material than narrative material. (See also Harris and Sipay, 1979; Drum, 1984; Marshall, 1984; Perera, 1986; Tonjes, 1986; Davies and Green, 1986.)

Expository texts are organized differently from narrative texts - "the structure of which even young children are familiar with" (Mandler and Johnson, 1977; Whaley, 1981). There is also evidence that children can be taught to recognize and use narrative text structure to improve their reading comprehension (Fitzgerald and Spiegel, 1983 in Kinney 1985). However, the current evidence is not as positive for children's understanding of expository text structure. Studies report that children of all ages, including high school, have trouble comprehending the structure of expository prose (Meyer, Brand and Bluth, 1980; Taylor 1980; McGee, 1982).

Kinney (1988:855) points out that the root of the problem may lie in the fact that children in elementary school lack experience with expository text because they encounter mostly narrative forms. She suggests giving them practice with expository text as early as possible. However, expository texts used in schools are frequently organized according to a hierarchical pattern of main ideas and supporting details. In general, this hierarchical pattern of superordinate and subordinate information is text specific. That is, most expository selections found in content textbooks are not organized according to a well-defined conventional structure. (See also Perera 1986 and Davies 1986.) Harris and Sipay (1979:368) point out that:

The textbook, by its very nature, contains an uncommon number of topics. Because of this, some volumes seem like massive outlines, with only sparse paragraphs on each topic ... They present concepts and state generalizations, though with only a minimum of explanation and illustrative examples. They

lack space for much detail, for their main task is to cover in one easily transportable volume whatever their subject may be.

In conclusion, Taylor's research (1982:339) lends some support to the notion that children who are more successful at producing hierarchical summaries (content structures) have better recall for expository text than students who are less successful at summarizing. However, she warns, it may be that even though instruction in a study strategy focusing on text structure can enhance elementary school students' memory for expository material, it seems that students must be able to perform the study strategy reasonably well before it will markedly improve their recall (323). McGee (590) points out that even when using the top-level structure of text to guide reading, "young readers were able to remember less than 40% of the information present in expository text". She recommends, as do Taylor (1980) and Meyer (1984), that:

Since learning and remembering information from reading becomes an increasingly important task in school, further research should be directed at determining the effectiveness of instruction in using textual structure to guide reading on increasing recall, and when this instruction would be most useful.

(McGee 1982:590)

Visual material - part of the text's structure

Lanham (1990:180) includes in his discussion of text structure, pictures or diagrams important for the meaning of the text. Van Rooyen (1990:18) reports that research has been divided on the effect of visuals on ESL text comprehension; and that research conducted in order to determine whether illustrations, graphs, etc, helped or hindered comprehension, seemed to be inconclusive. For example, Williams (1985:64-65) declares that tabulation is more readable than prose, and that readers read both artwork and prose. On the other hand, Moore and Skinner (1985:46) found that visual material did not improve the comprehension of adult learners unless they were specifically cued to attend to it. Reynolds and Baker (1987) and Steinley (1987:118) found this also to be true of children who "have to be taught explicitly to attend to pictures, graphs and tables in their texts, as they do not seem to do this naturally".

What does seem to be clear from the above discussion, is not so much the inconclusiveness of the research; but rather that, as in the reading process, there are two factors which determine whether or not an illustration is "readable", namely: the **reader** and the **visual** (and by implication the artist). It would seem that research has been inconclusive precisely because it has studied visuals in isolation, in the same way that early reading research focused on the text. The necessary interaction between reader and visual, for the "creation" of meaning has, it seems, been neglected. For this reason, the following discussion will address these two components, which are to be understood to be equally important components of an interactive process.

Visual literacy - what the reader brings to the interpretation of visual material

That methods of reading pictures have to be "learnt, like one learns to read pages of a book", is often taken for granted because learning to read pictures seems to be an informal process that goes on automatically in a society where a variety of pictures are presented daily through a variety of media. However, Fugelsang (1978:154) reports that:

In social environments with no pictorial tradition or very few pictorial representations, the informal process of learning to read pictures simply does not occur. It should therefore be recognized that people's ability to read pictures is correlated by the amount of pictorial stimulation to which they have been exposed in their social environment, so pictorial interpretation is largely a consequence of urbanisation.

Benjamin (1989:60) in her survey of work done by Hudson, (1960); Kilbridge and Robbins, (1968); Duncan, (1969); Hasken, (1972); Roos, (1976); and Colle, (1979/81), concludes that "a working knowledge of 'visual literacy' is often determined by the environment". She points out that the development of pictorial literacy skills can be viewed as a continuum that parallels a population's exposure to visual messages. In other words, she argues, people who are regularly exposed to pictorial messages and visual media, and can routinely interpret pictures "correctly", (once their meanings have been learned through repeated exposure to the pictorial language), are likely to be more pictorially sophisticated than others. Where picture exposure is scarce, she says, the informal learning process may be limited. People not receiving

symbols of mass media networks have less mutually agreed symbols and are likely to have a limited ability to interpret pictorial conventions.

In this regard, Benjamin (1989:23) cites Blacquiere (1987) who reports that there is "little doubt that the deprived ecology of South Africa's black communities has, (in this particular regard) stunted their development to educational maturation". Blacquiere suggests that, depending on the socio-economic conditions, fairly severe problems with visual literacy may be encountered in many black schools, particularly in the rural environment. Since a great deal of information in geography textbooks intended for such readers is presented via artwork, authors and artists should be careful not to assume a sophisticated level of visual literacy. "If pictures are to complement or clarify text, the effort is nullified if the picture cannot be interpreted" (Blacquiere in Benjamin 1989:18). Blacquiere goes on to point out that support for learning materials will have to take into account the difficulties arising from visual literacy in black education and that care must be taken to ensure that the visual materials are not likely to accentuate learning difficulties. This means, in effect, that textbooks written and illustrated for white schools are, as far as illustrations and other visual support is concerned, not likely to be suitable for all black learners in South Africa.

According to Smith (1960 in Benjamin 1989:15) visuals accompanying text have three main functions (see also van Rooyen 1990):

- i) **Meaning:** The visual medium, if with language, is intended to provide meaning for the reader of an unfamiliar language.
- ii) **Reinforcement:** By combining visuals and language, learning is optimal.
- iii) **Motivation:** Visuals generally get attention and encourage the reader to delve deeper and to find out more.

Further, Dale (1946); Finn (1953), and Dwyer (1970), in Benjamin, (1989:17) suggest the following criteria against which to evaluate the potential effectiveness of educational illustrations:

- i) Only essential information must be included; distracting cues can cause details to be missed.

- ii) Where greater detail is included more time to read the pictures must occur.
- iii) With complex pictures the learner will benefit from being directed by a teacher to important items.

It is important, however, to note that without "teacher direction", Reynolds and Baker (1987 in van Rooyen 1990:19) predict that for the ESL reader:

- a) Visual material presented alone will have more impact on comprehension than does the text alone, because the attention is more specified.
- b) When both text and adjunct visuals are presented, comprehension is frequently no better than with text alone and frequently not as good as with visuals alone. It is proposed that the reader will constrain himself to the most familiar medium, i.e. text, and not rate the visual as important. This would be the same as not having illustrations at all, and comprehension results are therefore comparable.

It follows that optimal comprehension of text may be achieved by using both text and visual material, and focusing attention on both. Children will therefore have to be taught explicitly to attend to pictures, graphs, and tables in their text, as they do not seem to do this naturally (Tonjes, 1986:70; Reynolds and Baker, 1987:164; Steinley 1987:118;).

Davies and Green (1984:6) also point out that the provision of learner support aids by authors and publishers (including tabulation, graphs, photographs, drawings, maps of different types, charts, calendars etc.) only facilitate pupil learning, "if they are properly and actively utilized by teachers and pupils". Harris and Sipay (1979:368) add that each chart or graph can be treated as a "reading selection, whose structure needs to be understood, whose concepts need to be mastered, and whose meanings and details are worth explaining". They also warn that data representations like pie charts, bar graphs and line graphs may

occur in geography textbooks "long before their interpretation is presented in mathematics".

Moore and Skinner's (1985:47) hypothesis that "illustrations can help to integrate materials presented and help the reader make inferences from a text, thereby improving comprehension", is only likely to be true for the young ESL reader if: 1) at least the factors discussed above, are taken into account in the preparation, production and integration of textbook illustrations; 2) if teachers are able to direct pupils to illustrations and guide their interpretation of them.

ASPECTS OF TEXT STRUCTURE AFFECTING THE READABILITY OF ESL TEXTBOOKS

Lanham (1990:180) identifies two main aspects of text structure with which young ESL readers are known to have reading difficulties. These are: unprincipled paragraphing and inadequacy of cues evoking a schema of existing knowledge. Each of these is discussed under two sub-headings below.

Unprincipled paragraphing

The young ESL reader's need for a "supportive text" which provides clear, well organised paragraphs, ideas logically connected and propositions following on logically one from another, has been made clear in previous sections. Lanham points to two examples of paragraph writing strategies typically employed, that make reading difficult for the ESL reader.

- i) Preponderance of one-sentence paragraphs which as a style is "popularly regarded as a means of simplifying texts". It is however, misconceptions such as this, about what it means to simplify texts which leads some writers to omit important details when simplifying materials for young readers (Bransford, 1979; Meyer, 1989; Lanham, 1990). A single sentence paragraph style is clearly not consistent with the view that:

Good paragraphs have a structure, in order that the contents of the paragraph may be presented to the reader in the most logical and systematic

manner. Part of that structure is a topic sentence, which contains the topic of the paragraph. The contents of the topic sentence are then fully developed by a series of major or minor support points, which follow the order of information contained in the topic sentence.

(Williams 1985:59)

Williams goes on to point out that it is for this reason that readability is greatly improved if the topic sentence is placed as early in the paragraph as possible. Conversely readability is reduced if the topic sentence is nowhere near the beginning, or if the text is made up

only of what appear to the reader to be a number of topic sentences acting as paragraphs, without any supporting details.

ii) Topic lines broken by paragraph divisions.

When text is not thematically constructed, topic lines (or the logical development of ideas) in paragraphs are interrupted by unprincipled paragraph divisions, which in effect, break up the topic. The result is that what is in fact supposed to be development of a single topic, appears to be several separate topic areas. It is difficult for the young ESL reader, reading this kind of text, to "discern a main thread from topic-revealing sentences and sentence grouping in paragraphs" Lanham (1986:9).

Inadequacy of cues evoking a schema of existing knowledge

i) Misleading or non-revealing titles and headings.

Lanham points out that misleading or non-revealing titles and headings pose serious readability problems for the young ESL reader. In the light of the importance of a reader's activated background knowledge; for the construction of meaning during reading, and given the likely linguistic and cultural limitations on the young ESL reader's accessible background knowledge, it is crucial that headings should be both meaningful and predictive (Williams, 1985:56; Lanham 1986:9, 1990:4; van Rooyen, 1986:16). For the young ESL reader, headings should be as specific as

possible, and should enable the reader to predict the contents of the section concerned. Williams (56) points out that headings, instead of being specific, are often cryptic, as if the writer "wishes to hide the contents of the section rather than make it transparent".

Steinly (1987:117) stresses that the reader can only make use of headings if the paragraphs under them are properly organised. Van Rooyen (1990:16) reports on the research of Spyridakis and Standal (1987) which has shown that even with complex and lengthy texts with unfamiliar content, comprehension was improved when headings were predictive of the content. Meyer (1989:9) suggests that propositions which are central to the theme of the text should be foregrounded. For example, in headings, titles (which should be propositions), and by the use of topic sentences at the beginning of paragraphs. Baumann's 1984 and 1986 research on the effect of the explicit statement of ideas in paragraphs and texts on reading comprehension, shows recognition of the main ideas to be important and indicates that:

- comprehension of text is improved when the reader is cued to attend to main ideas;
- comprehension of main ideas is enhanced when they are made salient through use of underlining or boldface;
- main idea comprehension is also improved when they are explicitly stated in the text.

Further, Williams (58), points out that it is important, particularly at the beginning of a chapter, to give the reader a summary/overview of the chapters, contents, their sequence, and their interrelationship. This is important, because it helps a reader to bring into play his existing schema of information and experience.

(See also Spyridakis and Standal, 1987:286.)

ii) Pictures or diagrams which the child cannot interpret.

Lanham (1990:1) in *What's in the Picture?*, explains that when reading illustrated texts, children need the information which the pictures can give them in order to help them understand something which must be learnt. He points out that, since pictures are lines on paper - children

have to be able to read the lines and recognize what the artist is trying to show them in order to make connections with, and meaning of, the accompanying text. He explains that "sometimes children interpret a picture quite differently from adults - they see things differently from what the artist wants to show". In this regard, the work of Colle (1979/81) is particularly helpful. The following extract from his work explains illustrating conventions and draws attention to potential perception problem areas for the young ESL reader.

According to Colle (1979:160), the fundamental problem with picture perception is the expression of a three dimensional reality in two dimensions. The fourth dimension, time, becomes problematic, entering the picture when movement occurs. He goes on to point out that in general picture interpretation, errors are likely to occur in the following five categories of picture conventions:

1) The convention of depth

- a) **Relative size:** For example, assuming that people on the horizon are midgets, while people close up are giants.
- b) **Overlapping:** An object that overlaps another is perceived as being in front of, or the two objects are perceived as a single object instead of two. They may also not be interpreted as belonging to different planes and the background figure may not be perceived as complete.
- c) **Shading:** This is usually achieved by line hatching or other graphic techniques. If this convention is misinterpreted, the shaded object or scene may be perceived as flat.
- d) **Perspective:** Based on the linear geometrical notion that two parallels meet at the horizon. Perspective is one of the most important cues to perspective of depth and distance and

thereby to sizes of objects in pictures. If misinterpreted, depths may not be perceived.

2) Conventions to draw attention to specific detail

- a) **Cropping:** When erroneous background detail is eliminated to emphasize specific detail. The section depicted is often framed or bordered to separate it from its more complete context. A viewer, unaware of this convention, could read it as "visual amputation", e.g. an arm being shown cutting vegetables in a cookery book.
- b) **Magnification:** The subject matter is enlarged to make it more observable. Often the object has not been identified because it is out of proportion. Colle cites the following example: In an educational lesson on the tsetse fly, a teacher looking at the picture (in the text) of an enlarged fly, reassured the researcher that they had nothing to worry about in their area, because their flies were not as big.
- c) **Colour:** Colour can draw attention to a specific part of a picture. However, colour is not universal and certain colours have cultural meanings that are inconsistent with intended meanings.

3) Conventions used to create the illusion of motion

- a) **Movement cues:** Suggest activity and movement e.g. a runner in full stride. Misinterpretation can arise if the inexperienced viewer sees the runner, with only one leg on the ground, as having an amputated leg.
- b) **Movement lines:** Often depicted by lines, a blur, arrows or multiple images, if not depicted accurately, can be seen as part of the person or object and therefore hinder recognition. Also, movement may not be inferred.
- c) **In sequence movement:** Movement may be represented by borrowing information from one scene to represent movement in another. If the relationship between scenes is not inferred, then movement or sequence action will not be interpreted.

4) Conventions used to indicate the "unseen"

- a) **The X-Ray transparent view** shows a view that would not naturally be seen. As the technique presupposes an understanding of how x-rays work, it may be incomprehensible to the viewer.
- b) **Comic devices:** Thought balloons and animated characters are used to communicate messages. This is meant to depict thought or speech, and not, for example, a bird flying in front of a cloud.
- c) **Terrain maps** may not be interpreted as maps from an aerial view, but may simply be seen as connected lines, rather than land areas.

5) Conventions based on symbolic code

- a) **Symbolism:** A pictorial metaphor.
- b) **Abstraction:** An intended meaning or the abstraction may not look sufficiently like the object to be recognised.

The examples above illustrate some of the problems involved in developing and using visual materials to communicate with populations not experienced with the use of pictures. They also illustrate the difficulties of communicators in conveying a message to culturally different populations. In these situations, the communicator or artist is likely to have a less than adequate understanding of the population's familiarity with a particular media and its way of depicting messages in pictures.

CONCLUSION

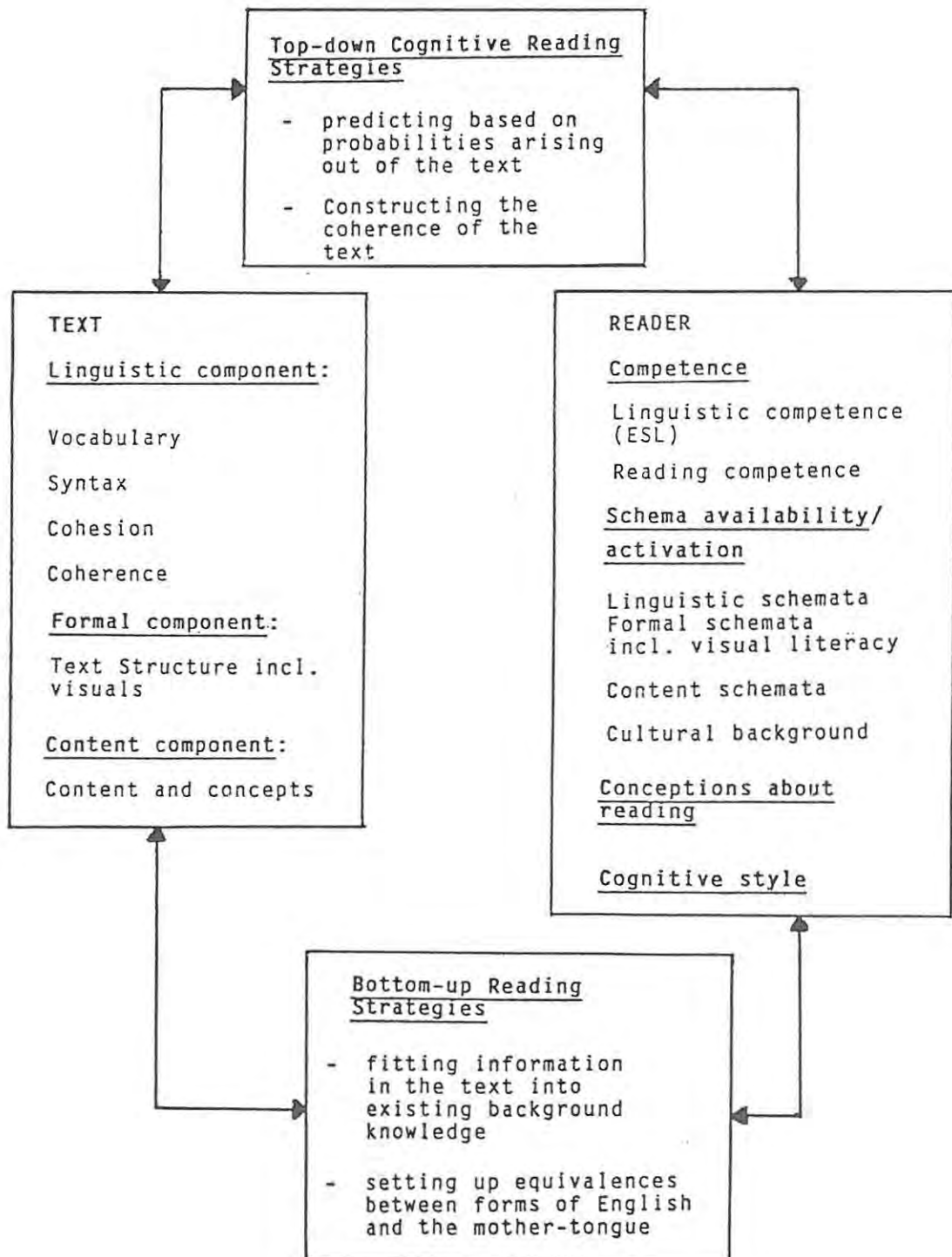
In this chapter, it has been shown that reading is an interactive process involving the reader and the text (by implication, the writer). On the one hand, the text, based on the writer's assumptions about the reader's ability to process and infer meaning, provides the reader with clues which should facilitate the reconstruction of the intended meaning of the text. These "clues" have been discussed under the headings of vocabulary, syntax, cohesion, coherence and text structure. On the other

hand, the reader is seen to use cognitive strategies in a cyclical process of constructing his own meaning by sampling a text. Depending on the reader's linguistic competence, visual literacy, cultural background and formal and content schemata, he/she responds to clues and cues in the text by activating the appropriate schema. In this way, meaning is "reconstructed" in a complex interaction between writer, reader and text.

This process may be explained by the flow diagram at Figure 2, following, which attempts to show both the interaction between reader and text, and the cyclical nature of the process.

Figure 2: The main components of the interactive reading process

THE MAIN COMPONENTS OF THE INTERACTIVE
READING PROCESS



Following the flow diagram, it is clear that a focus on text factors alone does not go very far in determining the "compatibility" of reader and text. On the contrary, in the case of the young ESL readers, the starting point for the writing process is "where the reader is at" in terms of competence, schema availability, conceptions about reading and cognitive style. These reader-factors (together with syllabus requirements) should determine the linguistic, formal and content components of texts intended for them.

For the purpose of this study then, a geography textbook intended for a black Std 3 pupil can only be considered readable and comprehensible if:

- 1) the average EMI pupil is able to recognise the constructs and components (or textual properties) in the text;
- 2) the reader's background knowledge and cognitive reading strategies are taken into account and facilitated, so that;
- 3) the reader is able to interact with the text in such a way that he is likely to be able to construct for himself the intended meaning of any part of that text.

CHAPTER 3

RESEARCH METHODS

This chapter deals with the following:

- The research methods and data collection techniques employed.
- Selection and characteristics of the interviewees.
- The design of the research instruments.

SECTION 1

RESEARCH METHODS AND DATA COLLECTION TECHNIQUES

This study is concerned primarily with the description of a particular aspect of a South African educational situation "as it is", over a period of three years in order to: a) evaluate the situation in the light of current research, and b) to identify and experiment with ways of improving it.

The inquiry therefore falls within the interpretive or descriptive, primary research paradigm. More accurately, it can be described as illuminative, longitudinal, case-study-type research, employing combined levels of triangulation to counter the effects of subjectivity (Cohen and Manion, 1985; Brown, 1988).

- It is primary research (Brown, 1988:2), in that data is gathered from primary sources, namely: pupils and teachers learning and teaching geography through the medium of English.
- It is descriptive in that it does not seek to manipulate variables to determine effects as in statistical studies (Brown, 1988:4). Rather, it describes events and processes as they occur, conditions that exist, practices that prevail and effects observed (Alderson, 1986:14; Cohen and Manion, 1985:68 & 69).
- It is illuminative in that, by describing what is, it "seeks to open out an educational situation to intelligent criticism and appraisal" (Hamilton, 1976:39). The research also follows the three main stages of illuminative research as outlined by Parlett and Hamilton (1975:92). The stages are:

- i) investigator(s) observe,
 - ii) inquire further, and then
 - iii) seek to explain.
- It is a longitudinal case-study in that data was gathered over a period of three years, where successive measures were taken at different points in time, from the same limited number of respondents (Cohen and Manion, 1985:68; Brown, 1988:2). It was noted that, according to Cohen and Manion (1985:71), one of the most significant disadvantages of a longitudinal study is that of "control effect". That is, that repeated interviewing can influence the behaviour of subjects, "sensitising them to matters that have hitherto passed unnoticed". Care was therefore taken to avoid this effect as far as possible (for details see page 139).

Triangulation techniques were applied for the following reasons:

- i) The use of two or more methods of collecting the same data enables the researcher to make use of quantitative as well as qualitative data (Cohen and Manion, 1985:254).
- ii) Exclusive reliance on one method may bias or distort the researcher's picture of the reality under investigation.

Triangulation techniques were applied as follows:

Methodological triangulation

Three different data collection methods were used on the same subjects, namely: classroom observation; informal interviews; structured interviews. The interview technique was selected over the questionnaire, mainly because it is more appropriate when looking for information representing a process rather than a product. In addition, the interviewer is able to answer questions concerning both the purpose of the interview and any misunderstandings experienced by the interviewee. He/she can also conduct the interview at an appropriate speed. Questionnaires on the other hand, are often filled in hurriedly and can present problems to people of limited literacy (Cohen and Manion, 1985:263).

Time triangulation

Each of the above methods was used once, with the same subjects at three different times, over a three year period (1987 - 1989); in order to account for factors of change over time (Cohen and Manion, 257).

Space triangulation

Cohen and Manion (1985:257) explain that space triangulation is normally employed in an attempt "to overcome the parochialism of studies conducted in the same country or within the same subculture by making use of cross-cultural techniques". In an attempt to do this, subjects were selected from three separate southern African territories, operating under independent education departments. They are: Transkei, Ciskei and eastern Cape, in South Africa.

THE RESEARCH METHODS AND DATA COLLECTION TECHNIQUES AS APPLIED IN THIS STUDY

Following Parlett and Hamilton's (1975:92) three stages of data collection in illuminative research, and Cohen and Manion's (1985:254) methodological, time and space triangulation, the data collection followed these main stages:

- Stage 1: Observe - Informal, semi-structured interviews - 1987, April - May.
 - Classroom observation - 1987, April, May, June.
- Stage 2: Enquire - Structured Interview 1 - 1989, May.
 - Structured Interview 2 - 1989, October.
- Stage 3: Explain - Analysis of data (see Chapter 4).

Stage 1. Investigator(s) observe

The informal interviews

Fourteen teachers and two principals, from six schools in Transkei, Ciskei and eastern Cape, participated in the informal interviews conducted during May 1987. In May 1989 it was decided to add another two eastern Cape teachers, who would provide an urban contrast to the mainly semi-urban group of teachers already participating in the research. Participants were interviewed about teaching and learning in the content

subjects through the medium of English. (See Appendix G1, the interview schedule for Structured Interview 1, Part 1 - which repeats this interview, only with the focus on geography instead of all content subjects.)

Classroom observation

Permission was obtained from the Transkei and Ciskei education departments to observe lessons and conduct interviews with Std 3 content subject teachers and their principals at two selected schools in each region. Due to strict DET policies governing research projects in the schools under their jurisdiction, the same was not possible in the four selected eastern Cape schools. However, permission was granted to conduct interviews with the DET teachers after school hours. Consequently, the report on classroom observation in chapter 4 of this study, reflects only classroom procedures as observed in Transkei and Ciskei. However, it will be shown that the responses to questions in both the informal and formal interviews revealed that teaching practices in the "unobserved" schools were no different from those "observed".

Stage 2. Inquire Further (two structured interviews)

Two different structured interviews were conducted during April/May and September/October 1989. The participants were six randomly selected teachers from the original group of twelve interviewees in 1987, as well as two from the new eastern Cape schools.

In order to prepare the two structured interview schedules it was necessary to do the following:

Schedule for Structured Interview 1:

- analyse the data from the 1987 informal interviews (see Chapter 4);
- select interviewees (see the discussion on page 104);
- select, and analyse textbook passages in terms of the properties of expository discourse affecting readability and comprehensibility (see the discussion on pages 112-134).

Schedule for Structured Interview 2:

- analyse the data from structured interview 1 (see Chapter 4);
- re-write the selected textbook passages implementing premises and principles of expository discourse for ESL readers (see the discussion on page 140).

Stage 3. Explain - The analysis of the data (see Chapter 4)

SECTION 2

SELECTION AND CHARACTERISTICS OF THE INTERVIEWEES

Selection of the participant schools

Interviewees were selected according to Cohen and Manion's (1985:100) principle of "convenience sampling". That is, interviewees were selected in terms of "ease of access", in this case referring to: departmental regulations governing research projects, distance, and teacher's willingness to participate. To negotiate each of these problems; teachers, principals and supervisors who had been co-operating with the Molteno Project for several years, were consulted. Their recommendations led to the identification of two schools under the jurisdiction of each of the three education departments. As it turned out, the schools recommended were what are regarded (both by the teachers and their education departments), as the best schools in each of the areas. This means that the findings of this study, are likely to represent the worst case in attempting to confirm the hypothesis that governs this inquiry. It is also likely that the situation is similar, if not worse, in most other higher primary schools in these areas. In an attempt to confirm this hunch, two more average urban schools were selected by a DET regional inspectress, in the hope that they might provide useful comparative insights. The details of the selected schools are given below.

Transkei: 2 schools - Langaletu HPS, Butterworth
- Ngubetholi Bam HPS, Idutywa

Both schools receive regular in-service training, monitoring and support from Transkei education officials closely associated with the Molteno Project. They regularly achieve above average results and are generally regarded as the best higher primary schools in their respective regions.

See Ellis (1984:notes) who found that Langaletu in particular, was generally more advanced than most Soweto primary schools he visited.

Ciskei: 2 schools - Zwelitsha HPS, Zwelitsha
- Funulwazi HPS, Mdantsane

Both schools are part of a group of 12 in Ciskei which are serviced by the Hlaziya In-Service Training Centre's geography upgrading programme. Like the two Transkei schools, these schools have access to resources, expertise and teacher-support which average schools lack. They are also regarded by the Centre's training staff, to be among the best of the 12 schools associated with the centre.

East Cape: 2 schools (initially) - Makana HPS, Grahamstown
- Archie Mbolekwa HPS, Grahamstown

Both schools had already been selected to participate in the DET's experimental English-across-the-curriculum support-programme, known as "Programme C". As a result they, like the Transkei and Ciskei schools above, had access to resources that other local schools lacked. These two schools are also generally regarded as the better higher primary schools in Grahamstown. In addition, two average schools in Port Elizabeth were selected for the following reasons:

- 1) The above schools are in semi-urban areas. Schools from an urban area might provide interesting differences;
- 2) the above schools are "above average". Average or typical schools might also provide interesting insights; and
- 3) to add another dimension to the space triangulation.

The additional schools were: - John Masiza HPS, Walmer, Port Elizabeth
- Johnson Marwanqa HPS, New Brighton, Port Elizabeth.

In all cases, the principals and teachers in the identified schools were approached (usually by personal visit), in order to establish whether they were willing to participate in the research. Following this, the relevant education departments were approached (see Appendices B1-10)

and permission was granted to conduct interviews with the teachers. In the DET schools, research activities were restricted to after school hours, while in the Transkei and Ciskei, free access to schools was granted.

Selection of the interviewees

Visits were made to schools where it was explained that this inquiry was concerned with "all aspects" of teaching and learning content subjects through the medium of English. It was hoped that by doing this:

- 1) Teachers would be assured that both good and bad aspects would be investigated; thus accounting for some of the "unavoidable features" of the interview situation such as uneasiness, avoidance tactics and holding back information (Cicaurel, 1957); and
- 2) the Hawthorne, halo, subject expectancy, and researcher expectancy effects would be reduced (Brown 1988, 32-34).

Selecting interviewees for the informal (semi-structured) interviews - May 1987

All the Std 3 teachers and principals at each school were invited to participate. This resulted in an average of three interviewees at each of the six selected schools.

Selecting interviewees for the structured interviews

Since all of the teachers had indicated their willingness to participate in further research activities, one teacher from each school was randomly selected to participate in "further research activities". These activities were to be two, more detailed structured interviews.

Interviewees were selected randomly in order to avoid "self-selection"; thus avoiding the possibility of the more motivated, and possibly "better candidates" volunteering, which may have unrealistically influenced the results (Brown, 1988:31). At this stage, setting a date for the next "research activity" was deliberately avoided in order to reduce the possibility of the "practice" and "reactivity effects" (Brown, 1988:38).

Characteristics of the interviewees

Informal interviews

Fourteen Std 3 teachers and three higher primary school principals were interviewed. All of the interviewees had experience teaching geography through the medium of English in Std 3. All interviewees, apart from the principals, were class teachers, i.e. they taught all the subjects in the Std 3 curriculum, and therefore had extensive exposure to the difficulties encountered in the first year of English-medium instruction.

Structured interviews

The characteristics of the nine teachers who participated in the structured interviews were obtained by sending them a form (see a sample at Appendix C) which they all filled in and returned anonymously in an enclosed, addressed, stamped envelope. Their characteristics are provided in Figure 3, arranged according to age.

Figure 3

INTERVIEWEE CHARACTERISTICS

Age:	28	29	32	35	36	36	46	46	56
Sex:	F	F	M	F	F	F	M	F	F
Position: T = teacher AT = asst.teacher HOD = head of dept DP = dep.principal	T	T	AT	AT	T	AT	DP	T	HOD
Highest school leaving qualification, standard:	8	10	8	10	10	10	10	10	10
Teaching qualification: P = PTC S = SEC N = NPC	P	P	P	S	P	P	P	P	N
Number of years teaching geography in Std 3:	7	6	6	1	5	10	7	17	16
Number of years teaching geography at other levels:	4	6	8	-	4	-	10	-	4
Number of years general teaching experience:	7	9	9	16	14	13	19	21	37
Subjects for which received formal training: * = all	*	*	*	*	*	*	*	*	*

Summary of interviewee characteristics

Of nine higher primary teachers:

- seven were females and two males;
- seven had matriculated and two had passed Std 8;
- eight had obtained a Primary Teacher's Certificate, while one had a Secondary Education Certificate;
- nine had taught geography in Std 3 for five or more years, while only one was in her second year of primary education after sixteen years in a secondary school;
- six had taught geography at other levels in the higher primary school for four years or more, while three had not taught geography at any other level;
- All had a minimum of seven years of general teaching experience, with the longest teaching careers spanning twenty-one and thirty-seven years respectively.
- All had received formal training in all primary school subjects.

SECTION 3

DESIGN OF THE RESEARCH INSTRUMENTS

The design of the following components of stages 1 and 2 of the research will be discussed in this section:

STAGE 1: The initial survey

- Preparing and conducting the informal interview.
- Classroom observation.

STAGE 2: Textbook analysis and structured interviews

- The Preliminary textbook analysis.
- Selection and analysis of passages in the geography textbooks.
- Preparing and conducting structured interview 1.
- Analyzing the data and re-writing the selected textbook passages.
- Preparing and conducting structured interview 2.

STAGE 1: THE INITIAL SURVEY: APRIL - MAY 1987

According to Cohen and Manion (1985:94-127), surveys typically involve structured or semi-structured interviews and must fulfil three prerequisites. These are, the specification of 1) the exact purpose of the enquiry; 2) the population on which it is to focus; 3) the resources that are available (financial, time, personnel etc).

The purpose of the initial survey was to conduct an inquiry into the situation as it is, in Std 3 content subject classes, in order to

1) describe the situation, and 2) to ensure that follow-up research activities were appropriate. The sample population is discussed in detail in the section above on selecting the interviewees. There were no difficulties as far as available resources were concerned. This was primarily due to the fact that regular school visits were part of the researcher's routine at the time. It was, therefore, possible to 'attach' research visits onto other scheduled official school monitoring and teacher-support visits to the selected regions.

Preparing the semi-structured (informal) interview

The research interview method was selected because one of its main advantages is that it "allows for greater depth than is the case with other methods of data collection" such as the questionnaire (Borg, 1963 and Tuckman, 1972 in Cohen and Manion, 1985:292). A disadvantage on the other hand, is that it is prone to subjectivity and bias on the part of the interviewer. For this reason, the semi-structured interview format was used instead of an entirely informal, unstructured interview. That is, the content of the questions was predetermined in order to obtain research relevant information. The questions are, however, open-ended in that they "put a minimum of restraint" on answers and their expression (Kerlinger, 1970), so that the interview is not typical of a "closed situation". In this way, subjectivity is reduced by ensuring that each teacher is asked the same questions in the same way. Two further measures were introduced to reduce subjectivity. The first was to complement the interview with classroom observation. The second was to repeat the semi-structured interview questions, as part of the first (tape recorded) structured interview two years later. This enabled the researcher to check the interpretation of field notes and to observe changes over that period of time. The tape recorded responses also make the data available to the researcher's supervisor and examiners for scrutiny.

The aims of the interview were:

- 1) to describe existing conditions in the content subject classroom;
- 2) to determine the nature of the problems experienced in the teaching/learning of geography from observation and from the teacher's point of view;
- 3) to uncover evidence relating to the textbooks as a likely cause of the difficulty of learning through the medium of English.

The thirteen questions in the interview, subsequently repeated in the first structured interview (see appendix G1) are mainly open-ended, allowing the interviewer to:

... clear up any misunderstandings....to test the limits of the respondent's knowledge; encourage co-operation and establish rapport, and they allow the interviewer to make a truer assessment of what the respondent really believes....They can also result in unexpected or unanticipated answers which may suggest hitherto unthought of relationships or hypotheses.

(Cohen and Manion, 1985:297)

Conducting the informal interview

Teachers were interviewed informally in groups of three or four at each school in order to set them at ease, to remove any sense of one-on-one intimidation, and to allow spontaneous, free responses to the questions which focused their attention on particular issues. It was also hoped that by including all the teachers (an average of three per school) there would be more chance of gaining broader, more realistic insights into

their perceptions of problems. Thus providing a broad data base which would provide insights into possible areas of focus in later, more detailed, structured interviews with pairs of teachers.

Classroom observation

In order to ensure that teachers were not "windowdressing" for the sake of the researcher, every attempt was made to be as unobtrusive and as natural as possible when observing lessons. Several unexpected, completely informal visits were made to the schools during which time content subject lessons were observed and teachers were encouraged to discuss their difficulties with the lessons or sections being covered at the time. The natural, informal observation style was preserved by avoiding the tape-recording of lessons or taking notes in the classroom. A record of observations was kept in the form of "field notes" made after each visit (Cohen and Manion:127).

STAGE 2: TEXTBOOK ANALYSES AND STRUCTURED INTERVIEWS

The preliminary textbook analysis

During the informal interviews and classroom observation in 1987, it was established that the content subject textbooks (geography, history and general science) used by the selected teachers were:

- Geography: 1) **Geography can be Fun, Standard 3**
L. B. Hurry (1980), Via Africa Ltd (used by 6 of the 9 teachers).
- 2) **Our New World 3**
Hattingh L.L., Michell S.D., Chambers D.J. and Beck J.D. (1981), Maskew Miller Longman (used by 3 Transkei teachers).
- History: 1) **History Can Be Fun Standard 3**
Mocke, H.A., Wallis, H.C. (1987), Via Africa Ltd.
- 2) **History 3**
Lambrechts, H.A., van Schoor, J.A.M., Bester, C.L., Potgieter, D. (1980), Nasau Ltd.

General Science: **General Science Can Be Fun Standard 3**

Fourie, D.I., Kaske, C.M.E.M., Msi, Z.I.M., (1982) Via Africa Ltd.

General Science in Action 3 (new syllabus)

Metrowich T.P., Hitchcock, I., Basson, N.J.S., Redelinghuys, R.B. (1981), Juta & Co Ltd.

(Note: According to their publishers, all of the above textbooks are marketed widely throughout southern Africa)

Following the observation stage, which pointed clearly to particular problems encountered by both pupils and teachers using these textbooks (see Chapter 4); the above textbooks were analysed in terms of the demands they make on Std 3 children in their first year of English medium instruction under the following broad headings:

- Assumptions about language competence
- Assumptions about classroom learning strategies
- Assumptions about task appropriacy

The findings, discussed in chapter four of this study, were then used as a foundation for the more detailed text analysis discussed below.

SELECTION OF PASSAGES IN THE GEOGRAPHY TEXTBOOKS FOR STRUCTURED INTERVIEW 1, PART TWO

Based on the following interviewees' responses to question 3a in the semi-structured interview of 1987 (see Appendix G1), three passages were selected for analysis.

Q 3a: Which parts of the syllabus would you say the pupils find most difficult?

Answers:

- the whole syllabus (as it is treated in the textbooks) - three teachers;
- maps and charts - four teachers;
- the weather/climate - three teachers;
- relief - three teachers;
- raw materials - two teachers;
- vegetation - two teachers;

(For details, see answers to question 3a in Appendix H1)

Based on the above responses, the following chapters from the two geography textbooks were selected for analysis:

- The climate of the RSA - **Our New World 3**, p. 28-31.
- What South Africa looks like from space - **Geography Can Be Fun**, p. 24-27.
- Mining in South Africa - **Geography Can Be Fun**, p. 65-67

(See each of these chapters at Appendices D1, D2, D3.)

Since seven out of the nine teachers were using **Geography Can Be Fun**, two passages were selected from this text and only one from **Our New World 3**.

The analysis of the selected passages

The recent South African research, discussed in chapters 1 and 2, **suggests** that existing content subject textbooks are likely to seriously hamper the young ESL learner's ability to extract information and therefore to learn from them through the medium of English. What this research has not yet shown, however, is that such texts **actually** cause reading and comprehension difficulties. In order to determine whether this is in fact the case, the following steps are followed in this study:

- those properties of expository discourse most likely to cause reading and comprehension problems for the young ESL readers and their teachers are identified;
- the three selected textbook passages are analysed in terms of the properties referred to above;
- interview schedules for each of the passages are prepared to:
i) assess Std 3 teacher's ability to read and comprehend the passages, and ii) identify those properties of the passages which cause reading and comprehension difficulties;
- teachers' responses to the interview questions are analysed in terms of i) and ii) above.

The first three of the above steps are discussed below, while the fourth is discussed in chapter four.

PROPERTIES OF EXPOSITORY DISCOURSE MOST LIKELY TO CAUSE READING AND COMPREHENSION DIFFICULTIES

With reference to the properties of expository texts discussed in chapter 2, and with the ESL reader specifically in mind (pupils and teachers), Lanham (personal communication, 1990) proposes that the following are necessary discourse properties:

- 1) accessibility of background knowledge with particular reference to supporting headings, maps and diagrams;
- 2) thematic coherence;
- 3) propositional fullness and explicitness;
- 4) avoiding obscure reference;
- 5) establishing concepts before applying them as register (geography) terms, and providing semantic support for unknown vocabulary;
- 6) overall coherence and logical relations.

(Note that adequate control of syntactic and lexical complexity is a necessary property of all texts.)

Below follows a brief explication of each of these properties as they are applied in the analysis.

1) **Accessibility of background knowledge and supporting information**

The importance of a topic being set against accessible background knowledge is discussed in detail in chapter 2. However, there are at least two important applications of that discussion in the analysis of the selected passages. Firstly, misleading or non-revealing titles and headings are culpable in that they either activate inappropriate background knowledge, or fail to activate it at all. Either way, an important part of the interactive reading process is lost. Secondly, constant reference within a text to maps and diagrams which provide supporting information, makes it important that they are interpretable. If however, a map or a diagram is uninterpretable, background/supporting information is not available for constructing the message of the passage.

2) **Thematic coherence**

Theme and topic are discussed together because, conceptually, they are similar. The only difference being their levels of application within discourse; theme at a higher, and topic at a lower level. Coherence is applied in the analyses in the following sense:

The logical progression of ideas which is not disrupted by non-sequiturs, tangential topic lines or information gaps (implicit information - including false assumptions about "global knowledge"). Sentences have a topic - comment structure. New topic lines are clearly marked as such.

Lanham (personal communication, 1990)

If the above conventions are not adhered to, the reader is unable to gain a sense of the coherence of propositions expressed and main ideas which other propositions support.

3) **Propositional fullness and explicitness**

The young ESL/EFL reader expects a text to "tell him everything". For this reason it is crucial that false assumptions about the reader's ability to infer and supply missing information should not be made. Unrealistic assumptions in this regard, can result in the exclusion of crucial information, without which the reader is unable to make necessary links in the development of the topic. It is therefore preferable to "state the obvious".

4) **Avoiding obscure reference**

There are two important aspects to consider. The first, is, identifying the referent which could be in the text, part of a supporting diagram, or outside the text in the real world (the geography of South Africa, in this case). Unless the readers can identify the referent and draw it into the message they are constructing, it is impossible to read with understanding. The second relates to the introduction of unknown vocabulary and register terms discussed under 5) below.

5) **Establishing concepts before applying them as register terms**

Establishing the nature and essential properties of an unknown referent, (i.e. establishing it conceptually in the mind of the reader before applying it as "assumed knowledge" in the world of geography) is

essential. This is particularly important when a referent, crucial for the understanding of a passage, is to be found only in a supporting map or diagram. For example, the use of "interior plateau" as a labelling term, without "plateau" being conceptually established. If such a term is not conceptually established, it cannot be found. Referents should therefore be clearly established through "mutually delimiting co-occurrence associations" (Lanham 1990, personal communication). This is because the meaning known to the reader is likely to be a "first meaning" for a word from "general English", which is specific to that context and unrelated to the world of geography.

6) **Logical relations**

For the young ESL/EFL reader, it is crucial in establishing concepts, that the following be avoided:

- Points of confusion. For instance: unprincipled use of different terms for the same referent. For example: **raw materials** and **minerals** - see Passage 1, paragraphs 2-4, Appendix D1; **climate** and **weather** - see Passage 3, paragraph 1, Appendix D3.
- Apparent contradictions. See, for example, the descriptions of the **plateau slopes** and the **coastal plain** in Passage 2, paragraphs 7 and 9, Appendix D2.
- Sequences of simple sentences, sparse in cohesive links, without logical connection (e.g. because, thereafter etc). See for instance, paragraphs 2-4, Passage 1, Appendix D1. This is a false strategy in simplifying text, as is the following item.
- Single-sentence paragraphs. See Passages 1 and 2, Appendices D1 and 2.
- Illogical time/space ordering. See, for example, Passage 3, paragraph 2 lines 4-10, Appendix D3.

If a text intended for ESL/EFL readers can be shown to fail as expository discourse in terms of the above properties at the macro-level, there is little doubt that it will be difficult to read and comprehend. In addition to the above properties selected examples of micro-level properties such as syntactic complexity and unfamiliar cohesion devices,

which compound reading problems, are included in the following text analyses.

DETAILED ANALYSES OF THE THREE SELECTED PASSAGES (APPENDICES D1 - 3)

In the following discussion, each of the selected passages is analysed in terms of properties 1 to 6 discussed above, as they affect the readability and comprehensibility of the texts.

PASSAGE 1:

MINING IN SOUTH AFRICA (SEE APPENDIX D1)

This passage consists of two main parts. The first, paragraphs 1 to 4, introduces the theme of "Mining in South Africa". The second, paragraphs 5 to 11, develops the theme "Gold" which might be more explicitly titled "Gold Mining in South Africa". The following topic lines are presented:

- Paragraph 1:** The listing of "all the things around you" constitutes a "task". Although it attempts to draw in the readers' background knowledge, the task is so open-ended that it cannot support the announced topic.
- Paragraph 2:** Raw materials are identified as "things needed to make objects".
- Paragraph 3:** South Africa's minerals. (Thematically this topic runs across the paragraph break to paragraph 4.)
- Paragraph 4:** South Africa's minerals are, by implication: gold, diamonds, coal, copper and iron ore. (Thematically, this refers beyond the passage to follow, to the whole chapter on mining.)
- Paragraph 5:** South Africa - the world's biggest gold producer. (Thematically this links with the topic line in paragraph 11 and Figure 55 referred to in that paragraph.)
- Paragraph 6:** The location of the gold mines. (Thematically this runs across the paragraph break to paragraph 7.)
- Paragraph 7:** Gold mining towns developed as a result of the discovery of gold.
- Paragraph 8:** Gold mines are deep and dangerous. (Thematically this links with the last two sentences of paragraph 9.)
- Paragraph 9:** How gold is found below the ground.

Paragraph 10: Workers on the gold mines.

Paragraph 11: Gold provides wealth for purchasing commodities abroad.

Comments bearing on thematic incoherence; propositional deficiency; logical relations

1. No topic (with the possible exception of paragraph 11), is sufficiently supported to establish it in the mind of the reader. For example:

In paragraph 1, the open-ended listing exercise is of little relevance to the theme to be discussed. Instead of "activating" appropriate thematic background knowledge, the activity diverts the reader's attention from it.

In paragraphs 1 to 4, what "mining" is, and what "minerals" are is inexplicit. (See sentences S, T and U.) There is also reference to Figure 53 which is non-revealing in this regard.

In paragraph 9, how gold is mined (or exists below the ground) - surely a major topic to be developed - has two inexplicit sentences, x and y. There is also reference to Figure 54, an uninterpretable illustration, discussed below (see obscure reference).

2. The passage is propositionally deficient.

See in particular:

Paragraph 2: It is implied that the open-ended list of substances are raw materials. "Minerals" are never identified explicitly. (See sentences S, T, U and V).

Paragraph 3: That "minerals are mined" is not explicitly stated. (There is a propositional leap between the two sentences in this paragraph).

Paragraph 4: The missing proposition, "gold is a mineral", is to be inferred by the reader.

Paragraph 5: The second sentence reiterates the first with little semantic enrichment (i.e. without purpose).

Paragraph 6: The term "arc" (likely to be an unknown lexical item), is not explicated. In addition, it is difficult to identify in Figure 53.

3. Propositional (information) flow ignores normal conventions of logical relations.

- See in paragraph 7 that sentences c and d explicate the term "gold mining town", introduced in focal position in sentence a. Sentences b and e extend the concept to Johannesburg (actually an illustrative example). Note the "leap-frogging" order.
- See in paragraph 9 that the information flow can be represented thus:

Mining —> difficult
SA engineers (solve problems) —> the best.

Compare this with a suggested "normal" information flow:

Mining —> difficult
difficulties —> problems
problems are solved —> best engineers

4. In propositional development and discourse structure, the paragraphs have little coherence. Topic lines are broken by paragraph divisions and topics broken off in one are taken up in another. (See, in particular, paragraphs 1, 2, 3 and 4, 6 and 7, 8 and 9.) Also, minor topics stand isolated between major topics. (See, in particular, paragraph 10.)

Comments bearing on obscure reference; background knowledge; register terms

1. "Mining", in the heading "Mining in South Africa", is semantically opaque, and therefore likely to be an obscure reference. A sentence such as the following could have made it more transparent: Miners bring gold and coal from under the ground.
2. Obscure references to maps and diagrams are common. Figure 53 on which the text relies for showing "Important minerals", depends on the implicit proposition: gold, diamonds, coal, etc, are minerals. Also, at least two of the referents (gold and coal mining areas) are unrecognizable by the child using the key. (Notice that three of the symbols - the circle, triangle and diamond, are reproduced exactly on the map, while the two colour-coded rectangles are not).

Figure 54 on which the text relies for showing "what a gold mine looks like" is extensively uninterpretable because:

- Numerous technical mining terms are in the key without explication.
- The representation of the "reef" is highly stylized, requiring several levels of interpretation for the reef to be seen as a sliver of gold "sandwiched" between layers of rock.
- Underground, a vertical cross-section (two dimensional in one part), leads to a three-dimensional, angled view of the reef.
- The illustration is cluttered with unlabelled tangles of lines apparently intended to show the earth below ground.

Figure 55 on which the text relies for showing "the importance of gold" as wealth, contains the following obscure referents:

- A highly unconventional representation of propositions gives no indication of what the "whole" amounts to. (The reader is therefore unable to infer what the "other goods" are, and whether they are imports or exports).
- The precise meaning of "value" is unclear. Neither the passage nor the figure reveal whether the reference is to the

inherent value of the goods, or the "money earned" by selling them.

3. The meanings of key register terms are not established. For example: See paragraphs 2-4 in which semantic relations between: raw materials - minerals - gold, diamonds, etc remain inexplicit. Hence an "obscure reference" for each of these terms. None of the terms "gold" (paragraphs 5-11), "arc" (paragraph 6,) or "reef" (paragraph 9), are established in terms of their nature and properties. They are therefore also obscure references.

Comments bearing on syntactic complexity; unfamiliar cohesion devices; unfamiliar expressions

1. Paragraph 2 includes a passive sentence with a deleted agent (sentence p), which requires the reader to interpret:
 - 1) the passive transformation; and
 - 2) to supply the deleted agent (i.e. manufacturers).
2. In paragraph 7, the expression "grown out of", is likely to be unfamiliar, thus reducing readability.
3. In paragraph 9, the anaphoric reference, "these problems", refers to one problem in paragraph 9 (sentence V), and another in paragraph 8 (sentence W). This reference across two paragraphs makes the second referent difficult to identify.

PASSAGE 2:

WHAT SOUTH AFRICA LOOKS LIKE FROM SPACE (SEE APPENDIX D2)

10 paragraphs develop the theme which might be more appropriately titled, "What South Africa looks like from high up in the sky". The following topic lines are presented:

Paragraph 1: The relief-view of South Africa, seen from space. (Thematically this runs across the paragraph break to paragraph 2.)

Paragraph 2: South Africa's relief likened to an upturned saucer. (Thematically this runs across the paragraph break to paragraph 3.)

Paragraph 3: The line of mountains (the escarpment), likened to the base of a saucer.

- Paragraph 4:** The plateau is high and flat.
- Paragraph 5:** The escarpment is made up of the mountains forming the edge of the plateau. Note that the last two sentences do not contribute to the topic. (Note also that the topic in this paragraph runs across the paragraph break to paragraph 6.)
- Paragraph 6:** The mountain ranges that make up the escarpment.
- Paragraph 7:** The plateau slopes are between the escarpment and the sea. (Thematically, this logically precedes paragraph 9.)
- Paragraph 8:** Mountains which do not form part of the escarpment (a list). (Thematically this follows on logically after paragraphs 5 and 6.) Note also that sentence K is thematically incoherent, introducing an unrelated topic.
- Paragraph 9:** The coastline and coastal plain defined. (Thematically this runs across the paragraph break to paragraph 10.)
- Paragraph 10:** An instruction to find the coastal plain.

Comments bearing on thematic incoherence and propositional deficiency.

1. No topic is sufficiently supported to establish it in the mind of the reader. "Relief", in particular, the macro theme and the topic of paragraphs 1-3, is not explicated. Its meaning has to be worked out from the text and illustrations which do not provide adequate support. There are, for example, four obscure references in paragraph 1 at a), b), c) and d). (d) refers to Figure 25 discussed under obscure reference below.) In addition, in the last line of this paragraph, no relation is established between "map" and "relief". Paragraphs 2 and 3 contain two more obscure references at e) and f) respectively. Figure 26 has to be recognised as a cross-section, and is not even referred to in the text.

The topics in paragraphs 4 to 7 rely heavily on Figure 27 which is not sufficiently integrated into the text and is confusing in parts. (See the discussion of Figure 27 under obscure reference below.)

2. Paragraphs are often propositionally deficient. See, in particular, paragraph 4 which does not explicitly state what a plateau is. Also note that sentence g) reiterates part of the propositional content of sentence h), with little semantic enrichment. Sentence i) is an incomplete proposition, giving the plateau another name, without adding any new meaning.
3. In propositional development and discourse structure, the 10 paragraphs have little coherence. For example:
 - There is no explicit link between "space" in the title, and the discussion of a "space-ship" in paragraph 1. The implicit proposition: space-ships fly in space; is crucial for understanding the view of a continent from above, and essential for establishing the concept "relief".
 - Topic lines are broken by paragraph divisions. (See, in particular, paragraphs 1, 2 and 3.)
 - Topics broken off in one paragraph are taken up in another. (See, in particular, paragraphs 5 and 6.)
 - Minor topics stand isolated between major topics. (See, in particular, sentences l) and m) of paragraph 5, and sentence k) of paragraph 8.

Comments bearing on obscure reference; background knowledge; register terms; logical relations

1. Non-revealing headings are common. For example, the title for the passage is not likely to activate appropriate background knowledge. See also the heading for paragraphs 2 and 3 "General", which is not likely to activate any background knowledge at all.

Note also that unfamiliar register terms used as headings, are likely to be obscure references. (See, in particular, the headings for paragraphs 4, 5, 7 and 9.)

2. Maps and diagrams are uninterpretable, or at least confusing, and inadequately integrated into the text. They do not therefore, provide the support they are intended to. For example:

Figure 25, on which the text relies to show "The relief of South Africa":

- is a two-dimensional representation of a three-dimensional relief. That "relief" is essentially three-dimensional, is not apparent;
- has stylized shading conventions showing height which require explication;
- is overcrowded with a mixture of names for physical features and descriptive terms (e.g.: Bloemfontein, Orange River, Lower Part of the Plateau, Mozambique, Escarpment).

Figure 26, on which the text relies for showing that "The relief of South Africa looks like an upturned saucer":

- Is an obscure referent because no reference is made to it in the passage. The implicit assumption being that the reader will know when to refer to it.
- Is uninterpretable because:
 - 1) It is a two-dimensional, vertical cross-section of a saucer. The reader has to reconstruct a mental, three-dimensional image of a saucer, or "supply" the missing part of the diagram in order to "see" a saucer. It is therefore difficult to identify a saucer in the diagram;
 - 2) It is impossible to identify the "line of mountains stretching from the Kamiesberg in the South-western Cape to the Drakensberg in the Transvaal", because it is not shown. Instead, the reader is misled into thinking that what it does illustrate - (a cross-section of the relief from east to west), is the line of mountains.

Note also: Figures 25 and 26 are both labelled as "The relief of South Africa", but they remain unrelated.

Figure 27, which the text relies on to support the discussion of the five features of the relief of South Africa, is the third entirely different illustration of the relief. It is also difficult to interpret for these reasons:

- It is a "slice" of a three-dimensional sand-table view, with an unexplained blank bottom section. This unfamiliar view makes heavy demands of the young reader.
- It does not clearly illustrate the features described in the passage, nor are the labels adequately integrated into the diagram. For example:
The plateau described as "The high flat part" (paragraph 4), is not clearly shown to be very much higher than the sea. In addition, the label seems to point only at the line along the northern extreme of the plateau.

The following are obscure referents because they are not clearly illustrated and labelled in the figure:

- the "plateau slopes" (paragraph 7), and the "coastal plain" (paragraph 9). Notice that the arrows pointing to these two features, appear to be pointing at the same "slope".

The following are obscure referents because they are either not shown, or not labelled on the figure at all:

- "the mountains" that form the edge of the plateau (paragraph 5);
- the "highest point" on the escarpment (Mont-aux-Sources, paragraph 5);
- the cited examples of the plateau slopes - "Transkei and the Tugela Valley", (paragraph 7);
- the mountains that "do not form part of the escarpment", (paragraph 8).

Also notice that apart from paragraph 4, there are no explicit instructions to refer to Figure 27 for supporting details. Finally, in paragraph 9, the reference to Figure 25 is misleading because the rest of the discussion in that paragraph relies on Figure 27.

3. Particularly characteristic of this passage is the application of register terms before they are established conceptually. See for example:

Paragraph 1: The key terms "space" and "relief", crucial for understanding the passage, are not established. Neither are "satellite" and "space-ship".

The same applies to the following:

Paragraph 4: "plateau"

Paragraph 5: "escarpment" and height "above sea level"

Paragraph 6: "ranges"

Paragraph 7: "Plateau slopes"

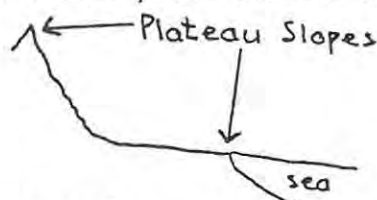
Paragraph 9: "coastline" and "coastal plain"

Note also the following instances of confusion and contradiction (poor logical relations). For instances of potential confusion, see, in particular:

- paragraph 8, where mountains are defined in terms of what they are "not";
- paragraph 10, which concludes the passage with an open-ended question to which the answer is not apparent.

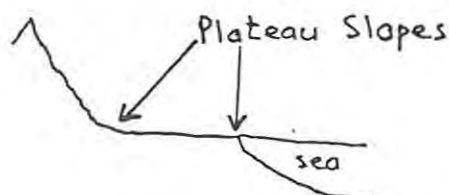
For an instance of contradiction within the text, see paragraphs 7 and 9, in which the boundary between the "plateau slopes" and the "coastal plain" is blurred and incorrect. Paragraph 7 locates the plateau slopes between the escarpment and the sea as follows:

This is incorrect.



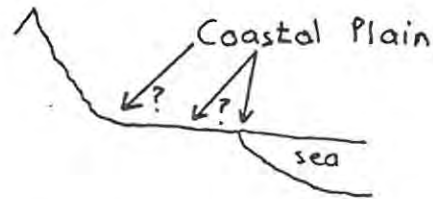
But note that in paragraph 5, (sentence J), the mountains are the escarpment. This "reduces" the plateau slopes to between the foot of the mountains and the sea as follows:

This is also incorrect.

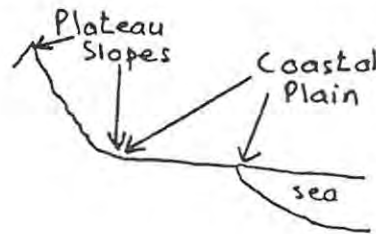


Paragraph 9 then describes the coastal plain as being "between the coastline and the plateau slopes" as follows:

Where is the boundary?



Compare the above explanations with this correct illustration:



Comments bearing on reduced readability and an unfamiliar cohesion device
In paragraph 6:

- the expression, "go to make up", is likely to be unfamiliar and not sufficiently transparent;
- the ellipsis of "mountain ranges" in "The Nuweveld Mountains... are only a few" (of these mountain ranges) - is also likely to reduce readability.

PASSAGE 3:

THE CLIMATE OF THE RSA (SEE APPENDIX D3)

The first paragraph, which might have been more appropriately titled "The weather of South Africa", introduces the broad theme climate/weather. The following 6 paragraphs develop the sub-theme, rain. This is not, however, clearly indicated by a heading such as "Rain in South Africa". The following topic lines are presented:

Paragraph 1: Climate is explicated. The last 5 lines are, however, outside the theme.

Paragraph 2: How wind brings rain to South Africa. (This topic line is continued in paragraph 7.)

Paragraph 3: Where and when rain falls in South Africa.

- Paragraph 4:** Annual and seasonal rainfall is displayed. (Thematically this links with the topic line in paragraph 6.)
- Paragraph 5:** A task requiring pupils to show their understanding of paragraphs 4 and 5.
- Paragraph 6:** How much rain falls in South Africa per year/average annual rainfall. (This links with the topic line starting in sentence 2, paragraph 7.)
- Paragraph 7:** South Africa is a dry country due to low rainfall.

Comments bearing on thematic coherence; propositional deficiency; logical relations

1. None of the topics, with the possible exception of paragraph 7, are sufficiently supported. For example:

Paragraph 1: In the explication of "climate", the meaning of the term is not established. Furthermore, in its application, "climate" is used interchangeably with "weather". The introduction of the unfamiliar word "spells", reduces readability further. The last 5 lines of the paragraph introduce an unrelated topic.

Paragraph 2: "Rain-bearing winds" is syntactically complex and likely to be an unfamiliar term. As a heading it is therefore likely to be non-revealing. The following also illustrate the poor topic support in this paragraph:

- high density of information;
- the absence of supporting illustrations e.g. a "comic-strip" series of pictures illustrating the formation of rain as moist air is forced up the plateau slopes. (Note also that the escarpment is not shown on Map 1);
- eight obscure references - (See Obscure reference discussed below);
- two instances of thematic incoherence - (See 2 and 3 below);

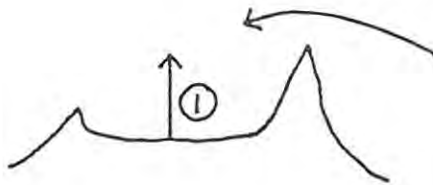
- six instances of propositional deficiency - (See 4 below).

2. In propositional development and discourse structure the paragraphs have little coherence. Topic lines are broken by paragraph divisions and topics broken off in one are taken up in another. (See, in particular, paragraphs 2 and 7, 4 and 6.)

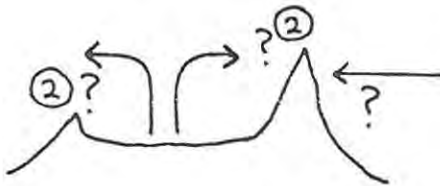
3. Propositional (information) flow ignores normal logical relation conventions. See in particular, paragraph 2, line 4 onwards, as illustrated below.

The information flow in the passage:

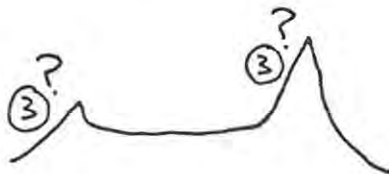
a) Warm, moist air from the Indian Ocean results in thunderstorms in the interior:



b) Moist air at the escarpment. (Which escarpment?):

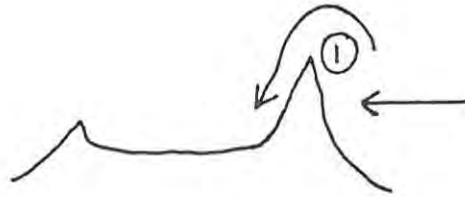


c) Little rain on the western side of the escarpment. (Which one?):



Compare the preceding with this suggested alternative:

- a) Warm, moist air from the Indian Ocean is blown against the escarpment. Some moist air goes over the escarpment:



- b) Thunderstorms in the interior:



- c) Little rain on the west side of the escarpment:



Notice: Only at the end of the whole passage (lines 2 to 5 of paragraph 7), is it implied that the escarpment referred to in paragraph 2 (lines 6-9), is in fact on the east side of the country, and that the moist air is in fact from the "Indian Ocean".

See also paragraph 7, where sentences a and d expand the topic - "areas of low rainfall in the form of thunderstorms". Sentences b and c

introduce a new topic - "droughts", which should follow after sentence e. Compare this "leap-frogging order, with the more logical arrangement as follows: a, d, e, b, c.

4. The passage is propositionally deficient. See for example, paragraphs 1, 2 and 4 discussed below.

Paragraph 1: In sentence 1, "climate" is not explicated. The distinction between climate and weather is not supplied, and the example in sentence 2 does not adequately support the distinction between the terms.

Paragraph 2: There are propositional leaps (information gaps) between sentences 1 and 2; 2 and 3. The missing information is: sentences 1 and 2 - moisture comes from the sea; sentence 3 and 4 - hot weather makes air hot.

Sentence 6 assumes a great deal of background knowledge. Some of the missing information to be supplied by the reader is:

- wind blows moist air from the ocean towards the mountains;
- this air rises up the plateau slopes;
- rain forms as the air rises up the plateau slopes.

There is a propositional leap between sentences 7 and 8. The information to be inferred is: mist is moist air.

Paragraph 4: The explication of how graphs are interpreted, is inadequate. For example, in sentence 2, the missing information in the expression "stands for a month" is: stands for (how much rain in millimetres falls in one) month.

Comments bearing on obscure reference; register terms; background knowlege

1. Several register terms and unfamiliar words are applied before they are conceptually established, resulting in obscure references. See for example:

Paragraph 1: "climate, "weather", "spells".

Paragraph 2:

- The title "Rain-bearing winds" is syntactically complex and the sense of "bear" is probably unknown to the child.
- "interior" (sentence 3)
- "moist air" (sentence 4)
- "thunderstorms" (sentence 5)
- "escarpment" (sentence 6)
- "mist" (sentence 7)
- "desert" (sentence 10)

Paragraph 3: "Zones" in the heading is a word which is not likely to be in the vocabulary of the children or the teachers. (This is likely to affect their ability to interpret Map 1 -"Rainfall zones", and to answer questions a)-f) in this paragraph.)

Paragraph 4: The explication of "diagrams" (lines 1-7), assumes familiarity with the abstract nature and properties of graphs.

Paragraph 6: "Average" and "annual" in the title of Map 2 (referred to in sentence 1), are likely to be unknown. "Average", in particular, because it is a highly abstract concept. Notice also that:

- 1) there is no explicit propositional link between paragraph 6 and the map's title;
- 2) it is not obvious that "Average annual rainfall" (the map's title), is a substitute expression for "how much rain usually falls.... every year" (sentence 1).

Paragraph 7:

- "Reliability" in the heading is likely to be an unknown term, the meaning of which remains semantically obscure.

- "drought" (sentence 4), it's meaning not being established, may be confused with "desert" (paragraph 2).
- "strips" (sentence d) is likely to be unfamiliar.

2. There are several obscure references to maps and diagrams. For example:

In Map 1, on which the text relies for showing "The rainfall zones of the RSA", the key requires several levels of interpretation as follows:

- a) Zones which get mainly winter rain - (Discriminate between vertical, horizontal and angled lines in the key and on the map).
- b) The darkest part gets the most rain - (Discriminate between light and dark areas in the key and on the map). Notice that the shading convention does not clearly distinguish between the light zones, or the dark zones on the map.

The "diagrams" (graphs) which the text relies upon to show "how much rain usually falls each year" in four cities:

- "each black line" (sentence 2, paragraph 4), is confusing insofar as there are many black lines - horizontal and vertical.
- Without adequate explication, the diagrams are not conceptually established. It is likely, therefore, that the task in paragraph 5 (which requires the correlation of information retrieved from the diagrams, with that in map 1), will be difficult for the child.

Map 2, which the text relies upon to show "Average annual rainfall":

The key is complex, demanding a sophisticated intergration of the following three sets of information before the map can be interpreted:

- 1) The "key code" itself, to 2) rainfall in millimetres for each code, to 3) a brief description of the area to be identified on the map.

Note: Questions a) - e) in paragraph 6 depend entirely on the reader's ability to extract this information from the key and apply it to the map. Note also the uncertainty as to "what map", in the reference to "a map" in paragraph 7, sentence 2.

Each of the three selected passages has been shown to fail extensively as expository discourse suitable for young ESL/EFL readers and their teachers, with restricted competence in English. Given that such texts are, for the ESL/EFL reader, likely to be neither readable nor comprehensible in any real sense, it would not be surprising to find:

- 1) that pupils have great difficulty comprehending such texts;
- 2) teachers have some difficulty comprehending them;
- 3) that teachers who rely heavily on such texts as a primary (if not only) source of information, adopt the rote-rhythm method as a teaching and learning survival strategy.

In order to determine the actual impact of such texts on the teaching/learning situation in Std 3, classroom observation was undertaken, together with informal and structured interviews, the findings of which are discussed in chapter 4.

PREPARING AND CONDUCTING STRUCTURED INTERVIEW 1

Preparing the interview schedule

Following Cohen and Manion's (1985:304-306) procedures for structured interviews, the following steps were taken:

- a) To exclude the possibility of researcher's bias in the 1987 semi-structured interviews, the questions in that interview were repeated as part of this tape-recorded interview.
- b) Care was taken to account for factors of change over the two year period since the semi-structured interviews, and to follow up findings made during the 1987 interviews and classroom observation.

The aim of the interview was to identify specific problem areas experienced by **teachers** reading the selected, analysed passages, in order to: a) assess the extent to which earlier research predictions, about children's difficulties with such texts, apply to their teachers; b) develop alternative versions of the analysed passages incorporating the properties of well formed expository text, to be tested in terms of their readability and comprehensibility in a second structured interview (Structured Interview 2).

The interview schedule (See Appendices G1-4) was prepared by drawing on the following information in an attempt to produce a reliable, valid interview instrument (Hatch and Farhady, 1982; Kitwood in Cohen and Manion, 1985; Toefl, 1987; Brown, 1988):

- a) the aims discussed above;
- b) the principles of the interactive reading process;
- c) the properties of expository discourse **most likely** to cause reading and comprehension problems discussed in chapter 2 and in section 3 of this chapter;
- d) by incorporating the 1987 semi-structured interview questions as part of the structured interview.

The question format was determined by the following factors in an attempt to obtain maximum content and construct validity (Brown 1988:102):

1) **The nature of the structured interview** in "which the content and procedures are organised in advance" (Cohen and Manion, 1985:293). This means that the sequence and wording of the questions was determined by means of the schedule. As for the informal interview, in order to allow the interviewer to probe, test the interviewee's understanding or clear up any misunderstanding during the interview, most questions are open-ended. The funnel type question is often used, allowing for a gradual focussing in and probing of the interviewee's understanding by starting with a broad question and then narrowing down to more specific questions.

2) **The nature of the reading process.** The questions were divided into three categories to match as closely as possible the four main cognitive strategies in competent reading, discussed in chapter 2 section 3, as follows:

Pre-reading questions

- a) The repeated semi-structured interview questions on the problems of teaching and learning geography in Std 3, and the teacher's general impressions about the language of the textbooks, as pre-textbook questions.
- b) Background knowledge questions to determine the background knowledge the teachers were able to bring to bear on their reading of the passages.

Text-Interaction questions aimed at determining the kinds of difficulties teachers might typically experience when actually using the texts. In order to do this, teachers were asked to read the passages in their own time and then to answer "interaction questions" by freely referring to the passages in order to "find" or "work out" the answers.

Post-Reading Questions dealt primarily with teachers' ability to recall what they had comprehended and to inter-relate different parts of the text between which there is no obvious overlap of ideas. Such questions are intended to reveal the reader's ability to establish the coherence of the text. This includes the

extraction of the theme that unites the whole text and gives the reader a sense of "what the text is about".

- 3) **The characteristics of the interviewees**, with particular emphasis on their English competence. Since some of the interviewees had only passed Standard eight; the most highly qualified had only a first teacher's diploma; and all interviewees were second language speakers of English - the language of the questions was kept simple and the questions made as clear as possible. In this regard, Devine's (1988) warning that the ESL reader's limited oral language proficiency makes the use of oral summaries or retellings of texts, of questionable value for the purpose of assessing reading comprehension was noted. However, according to Cohen and Manion (1985:303), the structured interview is preferred to a written questionnaire which carries with it a number of skewing factors. For example: the fear of committing one's views to print which may later be criticized or used as evidence against them; sensitivity about ability to communicate effectively in writing; time constraints; motivation; the possibility of misunderstanding questions, and responding to literal meanings of words or sentences. Most important of all - written responses remove the possibility to interact and probe deeply into initial responses.

Some problems accounted for in preparing and conducting the interviews

Cicaurel (1957, in Cohen and Manion 1985:295) points to five **unavoidable** features of the interview situation that would normally be regarded as problems.

1. There are many factors which inevitably differ from one interview to another, such as mutual trust, social distance and the interviewer's control.
2. The respondent may well feel uneasy and adopt avoidance tactics if the questioning is too deep.
3. Both interviewer and respondent are bound to hold back part of what is in their power to state.
4. Many of the meanings which are clear to one will be relatively opaque to the other, even when the intention is genuine communication.

5. It is impossible, just as in everyday life, to bring every aspect of the encounter within rational control.

Tuckman (1972, in Cohen and Manion, 1985:303) adds a number of problems surrounding the person(s) being interviewed:

When formulating questions, consider the extent to which a question might influence the respondent to show himself in a good light; or the extent to which a question might influence a respondent to be unduly helpful by attempting to anticipate what the interviewer wants to hear; or the extent to which a question might be asking for information about a respondent which he is not certain or likely to know himself. Further, interviewing procedures are based on the assumption that the person interviewed has insight into the cause of his behaviour, which is rarely achieved.

Testing the interview schedule (Structured Interview 1)

Following the principles outlined above, a first interview schedule was designed for the first structured interview (see Level 1, at Appendix G2). The first interviews, in Grahamstown and Ciskei, were conducted in order to test the schedule. Following these interviews, it was decided that the schedule was valid in that it actually tested the readability and comprehensibility of the passages. However, it was also decided that there was scope for further, more probing questions. Based on this decision, a second schedule was designed (see Level 2, Appendix G3). This was tested in second interviews with the same groups of teachers and also found to be valid. A few of the less penetrating questions from each of the Level 1 and Level 2 schedules were omitted and the two levels were conflated to make up the final schedule for structured interview 1 (see Appendix G4). This was then used in the interviews with Transkei and Port Elizabeth teachers. Since all the interviewees had answered the same questions (with the exception of the few which were omitted), and similar results were produced in each case, the schedule appeared to be a reliable instrument.

Conducting Structured Interview 1: April - May 1989

Following Tuckman (1972, in Cohen and Manion, 1985:306) the following steps were taken in setting up and conducting the interview:

- a) The interviewees were briefed as to the nature and purpose of the interview in an attempt to make them feel at ease (see the covering notes **The Nature and Purpose of this Interview** at Appendix E).
Note: Teachers were interviewed in pairs in order to avoid what could have been perceived as a threatening one-to-one interview with a white superior (Cohen and Manion, 1985:301-303).
- b) The interviewees' consent was obtained in order to tape-record the interviews and to use their responses for research purposes (see **Interview Consent Form** at Appendix F).
- c) The questions were asked as per the interview schedules (see Appendices G1 and G4).
- d) In view of the second structured interview, planned for a later date, care was taken to avoid sensitizing the participants to issues they may not have been aware of before, in the following ways:
- i) By accepting all responses to questions as "correct", it is unlikely that teachers would feel the need to go and "check" the answers they had given.
 - ii) The questions in Structured Interview 1 were open-ended and therefore did not require "right answers".
 - iii) Although all participants had indicated their willingness to continue as participants in the research after Structured Interview 1; care was taken not to inform them as to either the form the research would take, or when it would take place. Also, the two year gap between the semi-structured interview (May 1987) and the first structured interview (May 1989) was likely to have set interviewees at ease about any further interviews within 1989. This made it even less likely that, if they expected an interview, they would prepare themselves for it.
 - iv) The second structured interviews were conducted seven months after the first. The school principals were informed a week in advance of the planned interview dates, that the researcher wished to conduct further research activities with the teachers concerned. In spite of the early warning, some

of the principals had not informed their teachers by the time the researcher arrived to conduct the interview.

- v) In the second structured interview, as a final check on whether any of the participants had actually done any research in response to the first structured interview questions, a pre-interview question asked them if they had.

ANALYZING THE DATA AND RE-WRITING THE SELECTED PASSAGES

Analysing the data from Structured Interview 1, Parts 1 and 2

The tape-recorded data from each of the four structured interviews (four interviews with two teachers at a time) was transcribed preserving exact responses and pronunciation as far as possible (see Appendices H1 and H2). This data is analysed in chapter 4, in terms of the research objectives. (Note: To facilitate the reading of interviewees' responses quoted in Chapter 4, punctuation has been amended where necessary.)

Re-writing the selected passages

The aims of re-writing the passages were:

- a) to present the same conceptual content targeted at the same syllabus requirements (See Appendix I); but
- b) to present it in readable and comprehensible form for the intended readers, without changing the propositional content.

The re-writing of the passages was guided by:

- i) the main components of the interactive reading process, summarized in the flow diagram on page 96;
- ii) the properties of expository discourse discussed in Chapter 2, Section 5;
- iii) the discourse properties identified in Section 3 of this chapter to be **most likely** to cause reading and comprehension problems for ESL readers;
- iv) the factors identified in the analysis of the data gathered from Structured Interview 1, which **actually** caused reading and comprehension problems (see Chapter 5);
- v) the content of the original passages, and the syllabus requirements.

(See Appendices J1, J2 and J3 for the re-written chapters: **Mining in South Africa; The land of South Africa; The Weather in South Africa.**)

In contrast to the textbook passages, the re-written passages are characterized, in particular, by the following properties:

- 1) thematic coherence;
- 2) propositional fullness and explicitness;
- 3) logical relations between propositions;
- 4) avoidance of obscure reference;
- 5) transparent cohesive links;
- 6) control of lexical and syntactic complexity;
- 7) new vocabulary and register terms are established before they are applied, and semantically reinforced in their application;
- 8) avoidance of unfamiliar expressions;
- 9) interpretable maps and illustrations, integrated logically into the text.

PREPARING AND CONDUCTING STRUCTURED INTERVIEW 2

Preparing the interview schedule

The steps described for the preparation of the schedule for Structured Interview 1, were followed in the preparation of the schedule for the second structured interview. The schedule is, therefore, in most respects, the same as that used in the first structured interview. The only differences are:

- 1) **The aims**, which were:
 - a) to account for factors of change between the two interviews;
 - b) to determine to what extent the re-written passages were **actually** more readable, and facilitated reading comprehension;
 - c) to identify specific problem areas experienced by the teachers reading the **re-written** passages.
- 2) **The questions**, which are essentially unchanged, were "modified" only in relation to changes made in the re-written

texts in order to ensure the "compatibility" of passage and questions (see Appendix K).

Conducting Structured Interview 2: September - October 1989

The interview was conducted in the same way as Structured Interview 1. The same teachers were involved in all areas, except the Transkei, where Brown's (1988:31) "mortality effect" resulted in the replacement of one interviewee. The interviewee, who claimed to have taught geography for only one year in Std 3, and who had offered "I'm not sure" and "I agree" responses on thirty-three occasions during the first interview, arranged for another willing Std 3 teacher to replace her in the interview. It was therefore impossible to monitor any change in the new interviewee's background knowledge. It was, however, possible to monitor her ability to interact with the re-written passages. The replacement teacher's participation was not considered significant enough to influence the validity of the interview; the number of "consistent participants" provided sufficient comparative data to draw attention to any significant differences she might have brought into the interview situation.

Analysing the data from Structured Interview 2

The tape-recorded data was transcribed preserving exact responses, pauses and pronunciation (in the spelling) as far as possible (see Appendix L). The data is analyzed in chapter 4. (Note: Punctuation in interviewees' responses quoted in chapter 4 have been amended to facilitate reading.)

SECTION 4

ANALYSIS OF THE RESEARCH INSTRUMENTS

In this section the questions in each of the Structured Interviews are discussed in terms of, what they reveal, and where necessary; how they do so.

STRUCTURED INTERVIEW 1, PARTS ONE AND TWO

ANALYSIS OF QUESTIONS IN PART ONE - TEACHING AND LEARNING GEOGRAPHY IN STD 3 (SEE APPENDIX G1)

The questions in this part of the interview are grouped according to what they reveal about teaching and learning geography.

Questions 1-5 deal with teachers' opinions about:

- i) the problems associated with learning geography;
- ii) the pupils' difficulties (perceived by the teacher);
- iii) the geography textbook and the pupil.

Questions 6-13 deal with teachers' opinions about:

- i) their experience of teaching geography;
- ii) the geography textbook and the teacher.

In the analysis of this data (see chapter 4), questions 3b and 13 are omitted because preceding responses render them redundant. The responses to all other questions are, however, discussed for two main reasons:

- i) They are intended to reveal changes in the teaching/learning situation over the two year period between the informal survey and the first structured interview.
- ii) The data obtained (together with that from the informal interview), provides the context for the interpretation of the textbook data in Part Two of the interview.

ANALYSIS OF THE QUESTIONS IN PART TWO: THE READABILITY AND COMPREHENSIBILITY OF GEOGRAPHY TEXTBOOKS FOR STD 3 TEACHERS
(SEE APPENDIX G4

In this discussion, the questions on each of the three textbook passages are discussed. The questions in each of the categories: pre-reading, text-interaction, and post-reading, are grouped and discussed in terms of the discourse properties identified in Section 3 of this chapter.

Passage 1 - Mining in South Africa

Pre-reading questions

Background knowledge

1. Questions 1-4 and 6, determine what the readers know about the terms: "mine", "minerals" and "gold", and where gold is mined.
2. Question 5 assesses the interpretability of Figure 54, given the readers' existing background knowledge.
3. Of the text-interaction questions, only question 5 focuses on background knowledge. It determines the readers' knowledge about the discovery of gold in the Johannesburg area.

Text-interaction questions

Obscure reference; register terms

1. Questions 4, 7, 8 and 10c determine how accessible information is in Figures 53, 54 and 55.
2. Questions 1 and 3 determine whether the passage succeeds in establishing the meanings of: "minerals" and "arc".

Complex syntactic structures; unfamiliar expressions; unfamiliar cohesion devices

1. Question 2 determines whether readers can process the complex syntactic structure - a passive transformation with a deleted agent.
2. Is the expression "grown out of" familiar to the readers? (Question 6).

3. Question 9 should illustrate how obscure the referents of the anaphoric reference "these problems" are.

Propositional deficiency

1. Question 10b - Can the readers supply the missing proposition?

Post reading questions

Thematic incoherence; logical relations

1. Questions 1-5, together with question 10a (text-interaction section), assess the overall coherence of the passage.

PASSAGE 2 - WHAT SOUTH AFRICA LOOKS LIKE FROM SPACE

Pre-reading questions

Background knowledge

1. Questions 1-5 are intended to reveal the reader's existing knowledge of: "satellite", "space-ship", "plateau", "slope", "mountain range", "relief".

Text-interaction questions

Background knowledge; obscure reference; register terms; fixed expressions; logical relations

1. Questions 2a) - e) establish what "space" means to the reader.
2. Questions 3, 5 and 9 focus on the effects of obscure references (cohesion devices) within the text.
3. Questions 7 and 10 assess the degree to which Figures 26 and 27 support the meanings of: "relief", "plateau", "escarpment", "plateau slopes", "coastal plain".
4. Questions 1, 4a to c, 6 and 8a, determine whether the text succeeds in establishing the meanings of: "space", "relief", "escarpment", "plateau slopes", "base of a saucer", "height above-sea-level".
5. Question 8c - Is the expression "go to make up" comprehensible?

Propositional deficiency

1. Question 8b assesses the readers' ability to infer the missing proposition - The Nuweveld mountains etc (are mountain ranges).

Post-reading questions

Thematic incoherence

Questions 1-3 assess the overall coherence of the passage by focusing on readers' memory of main ideas and topics that relate to them.

PASSAGE 3 - THE CLIMATE OF THE RSA

Pre-reading questions

Background knowledge

1. Questions 1-4 establish what the readers already know about: "climate", "climatic zone", "rain-bearing wind", "drought".

Text interaction questions

Register terms; obscure reference

1. Questions 1-6, and the third of the post-reading questions, determine the effect of applying the following terms before they are established: "spells", "climate", "weather", "rain-bearing winds", "thunderstorms", "desert", "drought".
2. Questions 7-10 determine the retrievability of information in Maps 1 and 2, and the four diagrams.

Post-reading questions

Thematic incoherence; propositional deficiency; logical relations

Questions 1-3, together with question 4 of the text-interaction section, determine the readers' grasp of overall coherence.

STRUCTURED INTERVIEW 2

ANALYSIS OF QUESTIONS IN STRUCTURED INTERVIEW 2: THE READABILITY AND COMPREHENSIBILITY OF THE RE-WRITTEN PASSAGES FOR STD 3 TEACHERS (SEE APPENDIX K)

The questions from Structured Interview 1 are in essence repeated in Structured Interview 2 for the following reasons:

- 1) The re-written passages retain the content of the textbook passages with the exception of the following in Passage 3 - "The Weather in South Africa": the terms "zone", "climatic zone" and "average annual" are omitted (see Chapter 4, ps. 213,217).
- 2) To facilitate an objective assessment of differences in readability and comprehensibility, it is essential to ask the same questions about each of the pairs of passages.

Since the only differences between Structured Interview 1 and 2 are minor changes to some questions to ensure their "compatibility" with the re-written passages, the analysis of the questions is not repeated.

In summary, the main components of the research outlined in this chapter are, in chronological order:

- 1) Informal, semi-structured interviews 1987.
- 2) Classroom Observation 1987.
- 3) Selection of interviewees for structured interviews 1987 and 1989.
- 4) Selection and analysis of textbook passages 1988.
- 5) Preparing interview schedule for Structured Interview 1, 1989.
- 6) Analysis of the questions in Structured Interview 1, 1989.
- 7) Conducting Structured Interview 1, May 1989.
- 8) Re-writing the selected textbook passages, 1989.
- 9) Preparing interview schedule for Structured Interview 2, 1989.
- 10) Analysis of the questions in Structured Interview 2, 1989.
- 11) Conducting Structured Interview 2, 1989.

The analysis of the data in 1, 2, 7 and 11 above, will be discussed in chapter 4.

CHAPTER 4

DATA ANALYSIS

This chapter deals with the following:

- 1) Informal, semi-structured interview, classroom observation and preliminary textbook analysis - April/May 1987.
- 2) Structured Interview 1, Part One - April/May 1989.
- 3) Structured Interview 1, Part Two - April/May 1989.
- 4) Structured Interview 2 - August/September 1989.

SECTION 1

INFORMAL, SEMI-STRUCTURED INTERVIEW, CLASSROOM OBSERVATION AND PRELIMINARY TEXTBOOK ANALYSIS - APRIL/MAY 1987.

Introduction

The informal interview, classroom observation and preliminary textbook analysis formed the main components of the initial survey for the empirical research. The main purpose of this stage of the research, described in Chapter 3, was to collect data which described the teaching-learning situation in Std 3 as it is, and could be used to inform further, more detailed research activities.

The findings discussed below are based on:

- i) Informal, semi-structured interviews conducted with fourteen standard 3 teachers and three Higher Primary School principals from Transkei, Ciskei and eastern Cape schools (see Appendix G1).

- ii) Classroom observation in half of these teachers' classes over a two month period, together with an examination of pupils' written work covering the first four months of the school year.
- iii) An analysis of a number of the content-subject textbooks used by the teachers.

Initial Findings

The initial survey confirmed: 1) the absence of continuity in the transition from mother-tongue to English medium instruction; 2) the mismatch between content subject textbooks and their Std 3 users; and 3) a heavy reliance on the rote learning method, discussed in chapter 1 of this study. It was not surprising, therefore, that the following interrelated factors emerged as the most likely sources of difficulty in teaching and learning content subjects in the first year of EMI:

- 1. - Pupils' low level of competence in English.
- 2. - Largely unreadable textbooks.
- 3. - Inappropriate teaching and learning methodology.

Each of these factors is discussed below.

1. Pupils' low level of competence in English

The black child moving up from Std 2 into Std 3 faces a "formidable, if not impossible" language problem (Macdonald, 1986:4), for which it would seem, he is totally unprepared. Up to the end of Std 2 the medium of instruction is the black child's mother-tongue. He has one, sometimes two English subject lessons a day, which, apart from the Molteno Project's **Bridge to English** courses, do not include significant preparation for English medium instruction in content subjects. According to Lanham (1986), for the great majority of primary school children, English learnt in the classroom lacks any sustaining environment outside the school, and is in fact not a second language but a foreign language. Also, it emerged during observation, that, in the majority of classes, even the limited exposure to English in the classroom is unsatisfactory. This is mainly because the teachers are English second-language learners themselves. This means that they often lack either confidence in their ability to communicate in English, or appropriate competence, or both.

At the end of the Std 2 year, that is after only three years of learning English as a subject, the child goes on a one month school holiday, reports back to school for Std 3 the next year, and is faced with English as the medium of instruction for all content subjects. In short, within the space of a month, the child is faced with massive new language demands. The child, for whom English was a foreign language a month earlier; is now assumed to be capable of reading, writing and speaking competently in English. It is not surprising therefore, that van Rooyen (HSRC, 1990:1) suggests that pupils are likely to experience serious language problems in their first year of EMI.

2. Unreadable textbooks

All interviewees reported that content subject textbooks were one of the major causes of difficulty for their pupils. They pointed out that in the JPS pupils are neither expected to use textbooks for the content subjects, nor are they supplied with them. Pupils entering Std 3 are therefore unfamiliar with textbooks. As a result, the teachers report, pupils are overwhelmed when for the first time in their experience, they are issued with a separate textbook for each content subject. All seventeen interviewees either cited the following as evidence of the problem, or agreed that the following are true. That pupils are unable to:

- 1) locate pages when directed to do so;
- 2) find exercises or sections referred to by the teacher;
- 3) understand the textbook terminology (register terms); and most significantly,
- 4) to read the English of the textbooks with understanding.

Because of these kinds of problems, teachers reported that is in fact the norm not to issue pupils with textbooks supplied by the education departments at all. They pointed to the fact that for pupils to try to use textbooks that they could not read, was a waste of teaching time, and proved to be frustrating. Consequently, the interviewees reported that the teacher is the only member of the class who actually uses content subject textbooks. This has a number of serious implications for classroom teaching and learning procedures, which are discussed below under: 3. Inappropriate teaching and learning methods.

The Preliminary textbook analysis

The overarching question guiding the preliminary analysis was: **Are the textbooks realistic in their demands on Std 3 children?** In analyzing six textbooks commonly used in the teaching of geography, history and general science (see titles listed in Chapter 3), it was found that at least three implicit false assumptions influenced the design and development of all the texts. These were assumptions with regard to:

- pupils' language competence and subject-specific background knowledge;
- task appropriacy; and
- classroom teaching and learning procedures.

Assumptions about pupils' language competence and subject-specific background knowledge

In particular, it is assumed that pupils are competent readers of English, and that they have already developed an extensive range of subject-specific English vocabulary. See Figure 4 below for a typical sample of the register terms/ vocabulary/ concept load that a Std 3 pupil is assumed to be able to cope with in a normal three-day teaching period for Geography, History and General Science. It is important to note that this sample does not include vocabulary and concepts encountered in Maths, Health Education, Physical Education, Agriculture and English, over the same period.

Figure 4

A sample of the concept/vocabulary register term load on a Standard 3 pupil over a three day period for only three subjects: History, Geography and General Science (Langhan, 1988:100)

GEOGRAPHY: rotation, imaginary line, equator, planet, globe, heavenly bodies, hemisphere, continent, island, ocean, coastal plain, escarpment, plateau, relief

HISTORY: appoint, refreshment, journey/voyage, expedition, depart, fort, barter, diary, industrious, inferior, tedious

GENERAL SCIENCE: cotyledon, plumule, axis, radicle, embryo, germination, mineral salts, adventitious (roots) fibrous (roots), vegetative reproduction

Extracted (respectively) from:

Our New World 3 (1982)

History 3 (1980)

General Science Can Be Fun Standard 3 (1982)

According to the interviewees, Std 3 pupils are not competent readers of English. They have also not had the opportunity to learn English equivalents for the very few subject-specific terms that they might have come across in their mother-tongue medium instruction in Standard 2. The interviewees pointed out that:

- i) There is very little continuity between Environmental Studies in Std 2 (the umbrella subject introducing pupils to Social Studies in Std 3) and Geography in Std 3. There is "hardly any Geography in Environmental Studies". (See Appendices I1 and I2 for the syllabi.)
- ii) There is so much new vocabulary (particularly terminology) in Std 3 Geography, that pupils do not have the time to acquire it meaningfully.

- iii) There has been a failure by textbook authors to grasp the fact that all previous learning has taken place in the mother-tongue, with little or no transfer to English.

Assumptions about Task Appropriacy

During the classroom observation stage of the research, it was evident that pupils did not use textbooks, and that they did not do textbook exercises or tasks, either as classwork or for homework. In the classes observed, pupil's exercise books revealed only 'notes' apparently copied off the board. There was no evidence of any independent task or exercise work done by the pupils at any stage. The interviewees reported that the children could not do the exercises in the textbooks for two reasons:

- 1) Pupils (and sometimes the teacher), found the language of the tasks difficult. That is, even the teachers did not always understand what the tasks required them to do.
- 2) The level of difficulty of the tasks was too high and pupils could not "cope up with the exercises". The following is a typical example of a task identified by the interviewees as too difficult for the pupils.

The following is a typical example of a task identified by the interviewees as too difficult for the pupils:

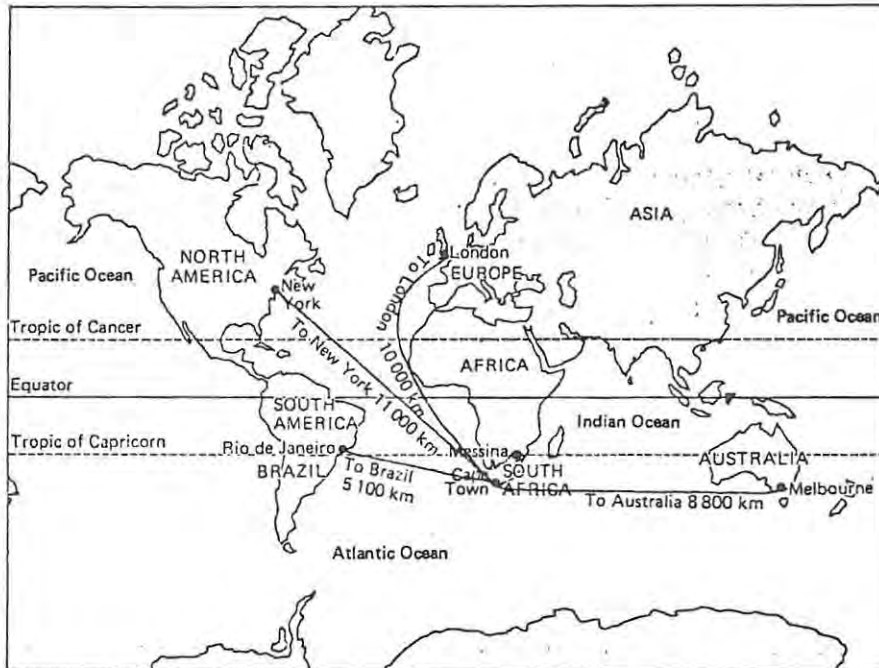


Figure 21 Continents and oceans around South Africa.

Look at figure 21. It shows the position of South Africa in relation to the different continents and oceans.

- Questions to answer**
- (a) Which pole do you think is closest to South Africa, the north pole or the south pole?
 - (b) Which distance is the greater, from the Limpopo River to Cape Town, or from the Limpopo River to the equator?
 - (c) How long would an aeroplane take to fly from South Africa to each of the following places, at an average speed of 500 kilometres per hour: London, Rio de Janeiro in Brazil, New York?

From: Geography Can be Fun, Std 3 (1980)

Notice that the answers to question a) and b) cannot be found in Figure 21 (task above). The poles are not identified for a), and the Limpopo is not shown on the map for b). Question c) is obviously too difficult for Std 3 pupils. Most of the teachers admitted that they did not know how to do c) either. Consequently, exercises and tasks which are often central to understanding lessons are either avoided or incorporated into the teacher's notes for pupils to copy into their books.

On analysing the History, Geography and General Science textbooks used by the interviewees, twelve major task-types (that pupils are assumed to be familiar with) emerged. These are listed in Figure 5 below. Of these tasks, the eight marked with an asterisk lend themselves to memorization, while the remaining four depend on several other linguistic and cognitive skills.

Figure 5

**A Summary of the kinds of tasks pupils are required to do in the content subjects: History, Geography and General Science
(From Langhan, 1988:102)**

- * 1. One word answers or answers which are not sentences
- * 2. Naming - (parts of a flower, etc)
- * 3. Reproducing lists - (names, dates, factors, etc)
- * 4. Choose/fill in the correct/missing word
- * 5. True or false statements
- * 6. Constructing full sentences
- 7. Constructing coherent, logical paragraphs. eg:
Explanations, Descriptions, Reports
- * 8. Labelling maps/diagram.
- 9. Extracting information from maps/graphs/diagrams to show understanding
- 10. Matching columns - (semantic association and collocation)
- * 11. Completing tables - (association and collocation)
- 12. Arithmetical problems stated in words

It has already been said that teachers feel that they have to 'incorporate' tasks into notes to compensate for the pupils' inability to do the tasks. An analysis of pupil's written work for the first two terms of 1987 confirmed this interview evidence and revealed that only tasks which lent themselves to memorization were incorporated into 'notes'. The other task-types (7,9,10 and 12) were avoided because, according to the interviewees, pupils were not capable of doing them; particularly if they involved writing original sentences.

3. Inappropriate Teaching and learning methods

Assumptions about learning procedure

The above assumptions (in textbooks) about language competence and task appropriacy, are accompanied by similarly incorrect assumptions about teaching and learning procedures in the Std 3 EMI classroom. These assumptions, it would seem, reveal authors' and publishers' ignorance about the prevailing conditions and factors affecting the first year of EMI discussed above. To illustrate the point, Figure 6 below contrasts the teaching/learning demands implicit in the analyzed textbooks with observed classroom practice.

Figure 6

<u>Teaching/learning procedures in Std 3 content subject lessons</u>	
<u>Implicit demands of the textbook</u>	<u>VS Observed classroom practice</u>
(Assumed learning procedure)	(Actual learning procedure)
1. Teacher 'teaches' in English. Pupils interact with the textbook.	1. Teacher 'teaches' in mother-tongue. Pupils do not interact with the textbook.
2. Class does textbook exercises.	2. Teacher 'gives' notes.
3. Teacher gives summary/notes.	3. Pupils memorize teacher's notes.
4. Pupils do homework, using textbook as guide and source of reference.	4. Tests - test recall of teacher's notes.

The interviewees gave the following reasons for adopting the observed teaching/learning procedures, in what are supposed to be English medium lessons:

1. The teacher teaches mainly in the mother-tongue because:
 - pupils lack English subject-specific vocabulary (register terms);
 - pupils are unable to cope with the English of the textbooks;
 - pupils are unable to read the textbooks, and therefore to interact with them;
 - teachers often lack confidence in their own ability to communicate effectively in English.
2. Pupils are given notes, written in English, in an attempt to compensate for their inability to interact with the textbook. The teacher simplifies and summarises lesson content in point-form notes. Teacher's notes are copied verbatim into pupils' books. (It is important to realise that pupils are **entirely dependant** on the teacher's notes.) Teachers gave further reasons for this approach:

- It can sometimes take up to two weeks to teach one lesson properly in English. This is not permissible because teachers are under tremendous pressure to cover the syllabus, and to keep up with their weekly work schedule.
 - Teachers have to prove that a certain number of tests have been written each term. Consequently, some teachers felt forced into an unproductive teaching pattern which encouraged rote learning with little or no focus on comprehension.
 - Some teachers felt unable to express themselves adequately in English, so avoided explanation by giving notes to be memorized.
3. Pupils memorize teacher's notes for the above reasons. To assist the memorization process, notes are 'drilled' as a class exercise because pupils often do not actually understand the notes.
 4. Tests simply require accurate recall of teacher's notes that have been memorized. Comprehension is rarely if ever tested because the pupils don't understand what they have learnt.

As evidence in support of the discussion of observed classroom procedures, extracts from three content subject textbooks, together with corresponding notes and tests from pupils' exercise books are provided on pages 159 to 168, of this section (Langhan 1988:104-114).

Each of the three random samples was taken from a different class, revealing the teaching/learning procedures of three different teachers.

The three sample lessons reveal that pupils unable to read their textbooks, are dependent on the teacher for the information they learn. It is also clear that the teachers rely heavily on the textbook as their source of information. The teachers' heavy reliance on the rote learning method is also clearly evident.

To exclude the possibility of researcher's bias in the initial survey of 1987 described above, the questions in the semi-structured interview

component of that survey were repeated as part of Structured Interview 1 in 1989. The only difference being a focus on geography only in the 1989 interview. An additional reason for doing this was to account for factors of change that might have occurred between the interviews. The discussion of the data from the repeated interview follows in the analysis of the data from Structured Interview 1, Part One.

Sample 1 - A history lesson from History 3, 1980.

A

Jan van Riebeeck's youth

Who was this Jan van Riebeeck who was appointed by the Council of Seventeen to establish a refreshment station at the Cape? In 1619 Jan van Riebeeck was born in Culemborg in the Netherlands. His father, Anthonie van Riebeeck, was a ship's captain. Both his mother and father were important people. When Jan was about eleven years old his mother died. His mother's father, Govert Anthoniszoon, brought him up as his father was constantly away on long journeys. His grandfather was mayor of Culemborg. He saw to it that his grandson attended school.

B (Corresponding Pupil's note book page)

Jan van Riebeck's Youth
Jan van Riebeck was born in 1619 in Culemborg.
His father Anthony van Riebeck was the ship's ^{captain} ~~captain~~
When he was about 11 years old his mother died.
His grandfather brought him up as his father was
constantly away on long journeys.
His grandfather was the mayor of Culemborg.
He ^{saw} ~~saw~~ to it that his grandson attended
school.

C (Corresponding pupil's text book page - note that this page was taken from a different pupil's book in the same class)

17 February 1987 History Test stad III

Jan van Riebeck's Youth

1. Jan van Riebeck was born in 1619 in Culemborg.
2. His father Anthony van Riebeck was the ship captain.
3. His mother died when he was 11 years old.
4. His grandfather brought him up as his father constantly was on long journeys.
5. His grandfather was the mayor of Culemborg.
6. He saw that the grandson attended school.

Notice that the pupil's notes at B, show that the teacher, in making notes for the pupils has:

- lifted sentences verbatim from the textbook;
- written them as unrelated, numbered points, losing coherence and contextual support in the process.

The pupil's test at C reveals that:

- pupils are simply required to recall the teacher's notes verbatim;
- very little understanding is required to pass this test;
- the pupil is rewarded for this kind of accurate (probably meaningless) recall.

Sample 2

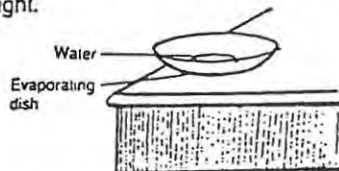
A General Science lesson from General Science Can Be Fun Std 3, 1982

A (The textbook pages)

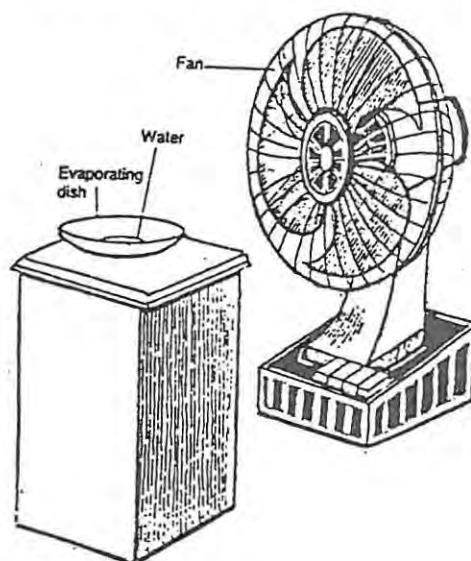
What helps evaporation?

Something for you to do

1. Take two similar evaporating dishes.
2. Measure out three teaspoonfuls of water into each.
3. Place one dish on a table away from a draught.



4. Place the other evaporating dish in an open window where there is a draught, or in front of a fan.

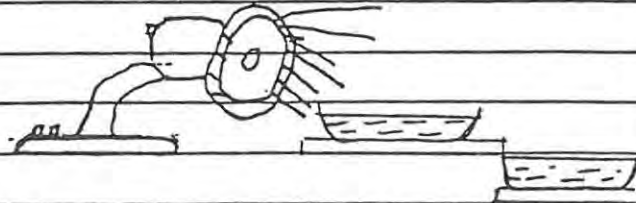


Questions

- (a) After some time, is there as much water in the evaporating dish in the open window, or in front of the fan, as at the beginning?
- (b) After some time, is there as much water in the evaporating dish on the table as at the beginning?
- (c) What has happened to all the water in the evaporating dish in the open window, or in front of the fan, after a very long time?
- (d) After a very long time can you notice any difference in the amount of water in the evaporating dish on the table?

B (The corresponding pupil's book pages)

to evaporate!
Does the wind also help to



Method
Something to do

Take two saucers that are similar (the same) but a table's spoon full of water into each.

Place one saucer in front of an electric fan that is switched on or in a draught of a fan open window.

Keep the other saucer in the classroom.

What have we learnt

1. The water in front of the turning fan dries up quite quickly.

The fan helped the air to move.

The moving air or wind helped the water to evaporate quickly.

2 The water on the other
island evaporates very
slowly because it does
not have so much moving
air around it.

3 Heat and wind are the
two main things in nature
that help the evaporation
of water.

Heat and wind and bigger
surface help the evapora-
tion of water.

Notice that the pupil's notes at B show how, instead of helping the pupil to do the task and make his own observations; the teacher 'incorporates' the task into her notes. By simplifying the content of the task and converting the questions into answers 1 to 4, she provided the notes which the pupil copied from the board.

Note that the test for this lesson had not been written at the time of observation.

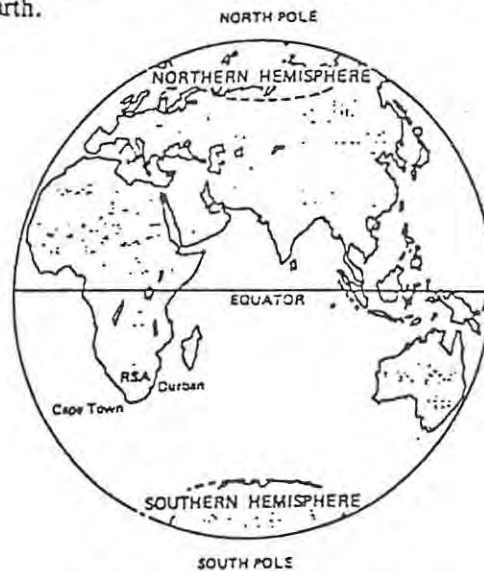
We usually call our country South Africa, but its full name is THE REPUBLIC OF SOUTH AFRICA. We shorten this to 'The RSA'.

THE RSA's PLACE (POSITION) ON EARTH

If you look up into the sky on a clear night, you will see stars, planets and the moon. Everything you can see in the clear night sky, as well as the sun and the earth, is part of the universe. Many parts of the universe are so far away that they have not yet been discovered.

The earth is a planet. Planets are heavenly bodies which move round the sun. Each planet stays on its own path each time it goes round. Like all planets the earth is shaped like a big ball, flattened at the top and the bottom. *Ask your teacher to show you a model of the earth.* This sort of model is called a globe.

Look at this picture of one side of the earth.



Map 1: One side of the earth

The imaginary line which cuts the earth in half from west to east is called the equator. The halves of the earth, north and south of the equator are called hemispheres. The RSA is situated in the southern hemisphere.

B (Corresponding pages from a pupil's book)



Position of the RSA on earth

1. The earth is a planet
2. Planets are heavenly bodies which move around the sun
3. Each planet stays on its own path each time it goes around

EQUATOR

1. An Equator is an imaginary line which cuts the earth into half from West to East.
2. The halves of the earth North and South of the Equator are called hemispheres.
3. The RSA is situated in the Southern Hemisphere

Continents

1. A continent is a very big piece of land
2. There are seven continents on earth
 - a, Asia
 - b, Africa
 - c, North America
 - d, South America
 - e, Antarctica
 - f, Europe

C (Corresponding page from pupil's test book)

22-5-87 $\frac{38}{110}$

1. Cape Province \rightarrow Cape town ✓
2. Orange Free State \rightarrow Bloemfontein ✓
3. Transvaal \rightarrow Pretoria ✓
4. Portswara \rightarrow Mahab Mabuto ✓
5. ✓
6. ~~land~~ in Ireland is the very big bits of land ✓
7. Asia ✓
8. Afr. ✓
9. Australia ✓
10. Northern America ✓
11. Southern America ✓
12. Antarctica ✓
13. light ✓
14. South Africa ✓
15. the called winter ✓
16. A nation is a very big bits of land ✓
17. A continent is one ✓
18. Orange River ✓
19. ✓

Notice that the pupil's notes at B show how, the teacher has:

- lifted sentences verbatim from the textbook;
- given information in point form without attempting to show meaningful relations (coherence is lost).

The pupil's test at C shows that:

- the accurate recall of one-word or one-sentence answers is required;
- that this pupil is unable to construct (or recall) coherent, logical sentences where memory has failed (see answers 15, 16 and 17);
- for this pupil, the meanings of the words "island" and "plateau" have not been clearly established (see answers 6 and 16).

SECTION 2

STRUCTURED INTERVIEW 1, PARTS ONE AND TWO, APRIL/MAY 1989

The analysis of the data from Structured Interview 1 is presented in two parts as follows:

1) Part 1: Teaching and learning geography in Std 3.

The analysis of the data from the informal, semi-structured interview questions, with the focus on geography in particular. For the interview schedule, see Appendix G1. For the transcripts of the tape-recorded interviews, see Appendix H1. Note that for the sake of convenience, the interviewees' responses from the four separate interviews (Grahamstown (G), Ciskei (C), Transkei (T) and Port Elizabeth (PE)), have been re-arranged onto one transcript so that all responses to each question are grouped together.

2) Part Two: The Readability and Comprehensibility of geography textbooks for Std 3 teachers.

The analysis of the data from the interview which focuses on the teacher and the textbook. For the interview schedule, see Appendix G4. For the transcript, which has been re-arranged in the same way as that of Part One of the interview, see Appendix H2.

1) STRUCTURED INTERVIEW 1, PART ONE - APRIL/MAY 1989

Teaching and learning geography in Std 3

(Appendices G1 and H1)

Learning geography - the pupils' difficulties

Under teachers' general impressions about how their pupils were coping with geography (questions 1 and 2), all teachers felt that their pupils experienced overwhelming difficulties. Comments like this express both the extent of the pupils' difficulties and the teachers' sense of helplessness:

G1: Pupils are finding a big jump from Std 2 to Std 3 ... its a totally different world... the language is too much for them ... its much advanced.... there is a big gap which we don't know how to close it.

Among the difficulties cited by the teachers are the following:

- 1) There is a "big jump" in terms of language demands and the levels of difficulty in the transition between Environment Studies in Std 2 and Geography in Std 3 (G1&2, C1&2, TP1 TN1).
- 2) English as the medium of instruction for pupils who "do not understand English", means that much of the teaching is done in the mother-tongue (PE1&2, TP, C1).
- 3) That notes have to be given in English after the teaching has been done in the mother-tongue, means that pupils often do not understand the notes. Also, pupils cannot write very well. "Writing is a problem, they cannot write down points from the board" (G1,C1).
- 4) As a result of the pupils' poor comprehension, there is not enough time to complete lessons within geography periods and the syllabus is not covered (C1, C2).
- 5) There are too many textbooks for the first year of EMI. In some cases however this does not apply in reality because textbook supplies do not reach schools anyway (TP, TN, PE1).

In response to question 2a, Can you say what they (pupils) find difficult/easy?, many of the issues raised by question 1 are repeated as they emerge to be among the major problems perceived by the teachers. The textbook was certainly identified as a major source of difficulty. Teachers pointed out that textbooks are of no value to the children as they are too difficult for them to read. The most significant difficulties are: the language is too difficult; the terminology is too sophisticated; the texts are written incomprehensibly, and pupils lack the background knowledge necessary to understand the content. According to G1 and G2 there is not really anything in the textbooks within the pupils' competence range, and in their experience, 80 percent of pupils cannot cope with geography lessons in Std 3.

The textbook and the pupil

Questions 2b, c, d, 4 and 5 all focus on the pupils' ability to use the textbook. In particular, the questions focus on whether the pupils can

read the textbooks, understand the language in the texts, make notes from the texts, do the tasks and understand maps and diagrams in them.

The unanimous response to question 2b is that Std 3 pupils cannot read their geography textbooks:

- G1: No, never. They can't read.
- G2: They cannot even write and copy properly.
- C1&2: No, they can't, no they can't.
- TP&N: They can never in Std 3.

According to TP & TN, even in Std 4, when some pupils can "read the words written ... because they are doing reading in English ... they are not reading with understanding". In addition, teachers reported that pupils are unable to locate pages they are referred to during lessons.

On the question of pupils making notes from the textbook (Q2c); the teachers agreed that pupils who could hardly copy notes from the board, were not likely to be able to make notes from a book that they could not read:

- C1: Even notes on the board - they just read not with understanding.

It is significant to note that in spite of the fact that English is 'upgraded' in TN1 and TP's schools, Std 3 pupils are still unable to read and make notes from their textbooks (Q2a):

- TP: I think teachers have to make some notes. Simplify the language in short form, point form, so to make it easy for the child - and not make as we are supposed to and not let these children to read. I don't think they can gain anything from these textbooks on their own, unless the teacher has her own simple notes.

Also significant is the fact that, according to the teachers, children fed into the higher primary school from outlying, 'non-upgraded' schools are less competent than those described in this study. This is significant since it suggests that the situation is likely to be worse in average and below-average schools in the respective regions.

All, except the Transkei teachers, agreed that pupils could not do the textbook tasks (Q2d) for the reasons already mentioned. It was interesting to note however, that the Transkei pupils' exercise books

revealed that what their teachers understood to be "doing the tasks" was in fact teachers 'incorporating' tasks into notes for the pupils. This evidence suggests, not only that pupils cannot do the tasks, but also that at least some of the teachers do not fully understand the purpose of tasks.

All teachers agreed that their pupils had great difficulty understanding maps and graphs in the textbooks (Q5). In spite of the fact that the syllabus (see Appendix I2) requires that pupils learn to interpret simple maps and graphs in Std 3; PE2 is convinced that pupils are not required to do so. (It was interesting to note that none of the teachers interviewed had a personal copy of the syllabus.) Also interesting to note, is the "drilling" method of teaching maps (C1&2). This method suggests that either the teachers do not know of any other way of teaching maps; or that because of their lack of familiarity with maps and map conventions, drilling (memorization) is the only strategy available to teachers and pupils alike.

The language of the textbooks (Q2a and 4), is clearly central in the discussion of the pupils' problems. The teachers unanimous response to question 2a is clear in this regard:

T1: The real problem is language, language, language ... terminologies especially, in Std 3.

C1: ... big new words - you have to try to simplify as much as you can, in so much that you take the mother-tongue so that they can understand it. If you can't touch mother-tongue, it seems they will open their eyes out - don't understand it, and you have to repeat it time and again.

PE1: They can't read it because the terminology used in that textbook is very difficult for them. There are words like "relief", "hemisphere", "rotation". They are very, very difficult even to explain.

G1 points to the consequences of the problems discussed so far, by noting that "10 per cent (of the pupils) cope and about 80 per cent are not coping in the class".

At least two teachers pointed out that there was more to the language problem than just terminology:

G1(Q2a):it is more than the language, I'm sure its the way what they have written the textbook. They must simplify it - in fact (so) that (it) is something that can be understandable. We can't even give the child (the book) to go home and read at home - they won't know it ...

TN1(Q4): Language in the textbooks needs some modification to drive the meanings home.

Finally, as far as the syllabus is concerned (questions 3a) and b), C1 & 2 point out that the whole syllabus is difficult because of the language problem:

G1: I don't know how to comment because ... eh ... I think its tantamount of the language problem there and ... they don't ... see it ...

G1&2: For the child the whole syllabus is difficult if it is dealt with as the textbook does.

These views are borne out by the lists of difficult sections cited by the other teachers (see Chapter 3). There is strong evidence to suggest that the textbook, because of the language used in it, and the way it deals with content, is the most significant source of difficulty for Std 3 pupils. This is reinforced by the fact that it is common for teachers not to issue their pupils with the textbooks supplied by their departments. In addition to the language problem, the syllabus is perceived to be too long:

PE2&C1 (Q2a): The syllabus is too long. You know when you are doing the second quarter's work you find out that you are not even ... that they don't even understand the first quarter's work and you are going (into) the fourth quarter.

PE1: Yes the last chapters, we don't even touch them. So we don't cover the syllabus in Std 3.

Teaching geography - teacher's problems

In response to questions 6 and 7, only C2 did not find teaching geography difficult. She did, however agree with all the other teachers who felt that the pupils were a major problem. "Without the pupils' difficulties" they said, "teaching geography would be easy".

Apart from the pupils' problems however, the teachers also identified the following difficulties:

- Geography classes are not equipped; there are no teaching aids (G2, PE2, C2).
- There is a shortage of good, helpful textbooks. Those that are available are of no real help and are beyond the pupils' understanding (PE2, G1).
- Class teaching means teaching eight subjects poorly to overcrowded classes.
- Poor learner competence together with pressure from inspectors to complete the syllabus, puts teachers under a lot of pressure. Nevertheless C1 and 2 reported that, as a result of the slow progress due to repetition and memorization, they barely manage to complete a quarter of the work they plan for any single week. (Needless to say, the syllabus is never completed by any of the teachers.)
- Two teachers, PE1 and TN2, implied that teacher training in colleges is very general and does not allow for specialization. Consequently, they did not understand geography themselves, or like it, and found it difficult to teach.

Each pair of teachers had a different method of dealing with their problems (Q8). This is probably a function of the emphases of the various in-service groups operating in the different regions. For instance, in Grahamstown, G1 and 2 tried to reduce the amount of language used in lessons by using demonstrations and activities. In Port Elizabeth, PE1 and 2 discussed difficulties with their schools' head of department. In Ciskei, the use of group work is a direct result of the influence of the Hlaziya In-Service upgrading programme in the region. However, C1&2 had not found this method entirely satisfactory as they complained that there was not sufficient time to implement it properly. None of the teachers, however, seemed to be able to explain how the problems they experienced affected their teaching methods or how they tried to cope with the problems. Either, the question was not understood or the teachers did not see the link between the two.

In response to question 9, only in Transkei, where English is introduced as medium in Std 2, do teachers find that they can teach mainly in English. For the rest, the teachers rely heavily on the mother-tongue as a tool for explaining the content of lessons. The teachers were all aware of the departmental requirement that teaching be conducted in English, but found this impossible to comply with.

G1 and 2, C1 and 2, and PE1 and 2 in their answers to question 10, claim that between a third and three-quarters of any lesson is actually taught in Xhosa. If this is not done:

C1: You can see on their eyes, they just look out...

Responses to questions 10a and b revealed that most of the teachers tried to follow the formal steps they were trained to use when conducting lessons: Introduction, Presentation, Conclusion. However, all teachers reported that they could never complete, a lesson they had prepared for a thirty minute period. All teachers agreed that it took them between two and four periods to teach such a lesson to their satisfaction. The following extract from the interview with the Grahamstown teachers, appears to reflect the typical teacher's experience:

G1&2: If you introduce a lesson in English when you ask questions to link up, you find they are just looking at you. Then you try to explain, now in vernacular. That takes another time, thats our problem. Then you have to give them a few lines on the board, because they can't go to the textbook. That's where another struggle - in thirty minutes ... won't do to write They copy them, but the time is up. So you have to carry on in the next lesson or the next day....

Q: Do the children understand the notes they have in their books?

G1: After a struggle. You have to read with them time and again.

Q: And when it comes to testing?

G1: some of them will be able to answer ... you will find that about nine of them get the answers out of sixty-five.

Q: What about the rest?

G2: They don't usually cope.

Earlier in the interview (Q3a), G1 pointed out that testing in English after explaining in the vernacular resulted in frustration "because your (pupils) get zeros and ones and so on".

Three out of the four pairs of teachers felt that they would not change their teaching methods (Q10b) even under ideal conditions. G1 and 2 on the other hand, felt that they could do things very differently if they had the necessary apparatus. They also felt that if the language and textbook difficulties could be solved, they would like their pupils to be able to use textbooks.

The textbook and the teacher

Questions 11 and 12 focus on whether the teachers have any difficulties with the textbooks. Seven out of the eight teachers claimed confidently that the language of the textbooks did not present them with any difficulties at all. For instance:

G1: is just simple for the teacher to use for his own preparation.

Only one teacher, C1 expressed difficulty with the vocabulary. The same teacher had earlier (Q3) acknowledged that she had difficulty with some sections of the syllabus because "you didn't come across that thing, so you are taking just what is written on the book". One teacher, PE2, pointed out that although the language was not difficult, it was difficult to get information from the textbooks. On the other hand, all of the teachers stated at some stage during the interview that the textbook language was definitely too difficult for the pupils. For example:

TP: These (textbooks) are made for the teacher not the child. The teacher must compile notes for the children.

G1: ... but the purpose of the books is not for the teacher, it is for the children, so it doesn't serve its own purpose.

Five out of eight teachers claimed that maps and diagrams in the texts (Q12a & b) were not difficult for them, while three (PE1, C1 and C2) did find them difficult. PE1 didn't know how to teach maps, while C1 and 2 were confused by the details on maps. They agreed for example,

that the only understanding they had of the difference between a plateau and an escarpment was, because "it is written".

Since pupils in the interviewees' classes cannot and do not read the geography textbooks intended for them, they are entirely dependant on their teachers for what they learn. The focus of the research, therefore, had to shift **from the pupil to the teacher**. The data from Structured Interview 1, Part Two, which assesses the teacher's interaction with the textbooks intended for their pupils, is analyzed in the following section.

SECTION 3

STRUCTURED INTERVIEW 1, PART TWO - APRIL/MAY 1989

The Readability and Comprehensibility of geography textbooks for Std 3 teachers

A note on the organization of the data to be discussed

It was pointed out in the analysis of the **questions** in Part Two of the Structured Interview (Chapter 3), that the interview questions are grouped into three categories. In this section, these categories are further subdivided according to the discourse properties they focus on, as follows:

- 1) **Pre-reading questions:** Questions focussing on assumptions about background knowledge.
- 2) **Text-interaction questions:** Questions focussing on obscure reference; register terms used before their meanings are established; complex syntactic structures; confusing cohesion devices; unfamiliar expressions; propositional deficiency; thematic incoherence.
- 3) **Post-reading questions:** Thematic incoherence.

Each of the three passages is now discussed in terms of what the interview questions reveal about their discourse properties, and the quality of the teachers' interaction with them.

Passage 1 - Mining in South Africa (Appendices G4 and H2)

Pre-Reading questions

Background knowledge

Generally, the teachers' background knowledge about mining was vague and sometimes confused. The following selected examples illustrate the point:

Q1: Do you know what minerals are?

Tell me what you know about minerals

G2: They are precious stones dug underground and they are used for making certain valuable ... money ...

G1: ... and other piping.

C2: Anything that can come from under the ground.

C1: Yes.

T1: Yes, minerals are things that are under the ground or on the earth.

T2: Agreed.

PE2: Is it not production from the soil?

Q2: Do you know what gold is?

Tell me what you know about gold

Most interviewees had a fairly good idea of what gold was, although none of them had seen "the real gold", apart from in watches and jewellery. Notice that PE2 thinks that "paper money is made from gold" and that C1 and T1 think gold "is an expensive stone".

Q5: Have you ever seen a mine?

Only G2 has seen a mine "from far away" and was able to identify the mine dumps in the picture on page 66. For the rest of the teachers, this picture was unfamiliar.

Q6: Do you know where gold is mined in South Africa?

Can you give me any details on where it is mined in South Africa?

It was interesting to note that although all the interviewees were aware of the area in which gold was found, only one was able to name more than one possible mining town; this after an average of nine years of teaching geography at the Std 3 and 4 levels.

Q5:(Text-interaction section):

Read the first paragraph on page 67

When was gold first discovered in Johannesburg?

(Would you say 50, 100, 150, or 200 years ago?)

Of the eight interviewees, only one guessed correctly that it "might be 100 years". The rest were unsure or thought it must have been 200 years ago or more.

Text-interaction questions (asked after reading the passage thoroughly and then referring to the text at will).

Register terms applied before their meanings are established

Q1: Look at page 65. (Point out the word "minerals").

Do you know what minerals are now?

Can you give me examples of minerals in this passage?

Clearly the distinction between "minerals" obtained from mining, and "raw materials", had not been established in the readers' minds by reading the passage. Their answers seem to confuse the two in the same way that the passage does; there is no perceived difference between them:

G2: Diamonds, coal, copper, iron-ore, wood.

C1: Raw materials...

C2: Yes.

C1: like wood, you can make something from it.

T2: Coal, iron, gold, wood ...

T1: Yes.

PE1&2: Water, coal, diamonds, gold.

Q3: Look at page 66. (Point at the word "arc" in the text)

Do you know what this word means?

Read the sentence and tell me what you think it means

Can you show me what an arc looks like?

Five of the eight interviewees knew what an arc was and could show a "C" or a "U-shape" in the air. One of these five was however not convinced:

PE2: Is it not a U-shape? It is confusing.

For the other three interviewees, who appeared not to have any background knowledge to draw on, the passage clearly did not establish its meaning:

C1: Type of a mountain where there are many rocks, a mountainous place.

T1: I don't know the meaning of this arc.

PE1: Eh ... I don't know whether is the arc that is in the bible. The bible says that Noah build an ark. But as it is written here, I can't get its meaning.

Obscure reference

Questions 4, 7, 8 and 11 all refer to maps and diagrams which are intended to support the passage. The following responses reveal the effect of obscure reference on the interviewees' comprehension.

Q4: This passage says that Figure 53 shows you where the gold is mined. Where is Figure 53?

All interviewees were able to locate the figure on page 65, but not without some delay. The Transkei teachers, in particular, paged around uncertainly before finding the referent.

Q: Can you show me the place on the map where gold is mined?

Only T2 pointed directly to the arc on the map. All the others seemed to be misled by the obscure references in the text, to the "Orange Free State" and "Heidelberg", which actually led the readers directly to the coal mining area on the map:

G1: The darkish one (pointing to coal area).

G2: Yes.

Q: Name some of the towns there

G2: Heidelberg, Vanderbijlpark, Dundee, Belfast ...

G1: Carolina, Belfast ...

C1: Heidelberg.

C2: Vanderbijlpark .. (both pointing to the coal and gold areas)
Heidelberg, Vanderbijlpark, Johannesburg and Welkom.

T1: Orange Free State and Transvaal and in South Africa. Different places in South Africa (pointing vaguely at the whole map).

PE2: Here at Welkom, at Heideberg and others... Johannesburg and the Transvaal.

PE1: What about Rustenberg?

Q: How did you find them? (What helped you to find them?)

At this point it became obvious that the interviewees had not actually used the key to interpret the map at all. Only after asking this question did they realise that there was a key. For example:

G2: It (the passage) said that it (the arc) started from the OFS to the Heidelberg (referring to the paragraph on page 66).

G1: (Looking at the key on the map for the first time)... doesn't this one (the one they had identified as the gold area) show coal?

Q: You feel it shows coal?

G1: The darkish one shows coal.

Q: So what clues are you using now?

G1: The key.

G2: Oh, the key ne? Oh, (looking at the place G1 was pointing to) the gold mining is the greenish part. I see now, I see now.

Q: So how did you get that?

G1: I see the key.

G2: The key, the key - now I'll said the arc is curved just like a moon is curved.

G1: So in other words, the gold is Welkom, Vanderbijlpark, Johannesburg.

G2: Yes.

Although the other interviewees claimed to have used the key to help them work out their answers, this was only said after some delay. This suggests that the question made them conscious of what they "should have done". Notice though, that the key was of little help anyway. Even G1 and 2, using the key, were misled by the poor labelling of Vanderbijlpark (a coal mining town) to include it in the gold area.

Notice also that although five of the eight teachers knew what the word "arc" meant in the passage, only one identified it on the map. This particular obscure reference (also a concept that is not established) affected the teachers ability to locate the referent. Had it not been for the probing interview questions, it is unlikely that even the

teachers who did eventually identify the referent, would have done so on their own.

Q7: Look at the picture on page 66. What is this a picture of?

All interviewees identified the diagram correctly. Their difficulties began however, when they were asked to interpret the diagram and identify parts of it. In particular, the discussion of the "gold reef" in the passage depends on supporting detail in the diagram. The obscure reference to it does not, however, give the readers the assistance they need, as illustrated by the following examples:

Q: What do you think this green part is? (point to the main gold reef)

G1: I think it is where the minerals are found.

G2: I'm sure it's the entrance of the ..., its where the people enter.

G1: It's where the minerals is so people have to come here and dig.

C1: It is gold.

C2: They show us how gold is in the mine. The indication of the gold (pointing, incorrectly, to the key for the map on page 65) show the colour - it is green colour.

Q: So that means that the key on page 65 shows that gold is a green colour. So that means that the green part on page 66 is gold?

C1&2: Yes.

T2: Gold-bearing reef? I don't know.

Q: You say its a gold-bearing reef, but you don't know?

T2: I think so ... but I'm not sure.

Q: What do you think it is T1?

T1: It is the path to the shaft or the mine.

PE2: Gold bearing reef.

PE1: eh ... (long delay) ... eh ... shafts, gold-bearing reefs and blind shafts.

Q: All three?

PE1: Yes.

Q8: How did you find out what the things in the picture were?

The answers to this question reveal both the confusing effect of this obscure reference, and the teachers' unfamiliarity with the key as a convention. G1 identified the gold reef by using the passage, while all the others claimed to have used the key. T2, after using the key, was still not sure of her answer. Notice, in particular, that C1 and 2 used the key for Figure 53 to interpret Figure 54.

Q11: What does Figure 55 show us?

The divergent answers to this question provide further evidence of the negative effect of obscure reference and uninterpretable diagrams on comprehensibility:

G2: Compare the value of gold and diamonds.

G1: Ja, it shows us how much diamonds and other goods there are in SA.

T2: The role of gold.

T1: The graph show how SA gets gold ...

T2: Yes, I agree, but eh, it also shows us the gold is more valuable than diamonds ..., I think so.

PE2: The importance of gold and diamonds.

PE1: The value of gold and the value of diamonds.

Propositional deficiency

Question 10b is the only question which focuses on the impact of propositional deficiency on comprehensibility. This particular instance did not cause any problems for the interviewees.

Syntax

Question 2 assesses the impact of the complex passive transformation with a deleted agent.

Q2 Who needs raw materials like wood, water, coal, iron and other minerals?

Only G1 was able to supply the deleted agent "people" (in factories/manufacturing industries). The rest of the interviewees seemed not to be influenced by the context provided by the passage and insisted that they themselves and ordinary people needed the raw materials. This however, is not surprising in the light of the fact that it is in this sentence in the passage that the distinction between raw materials and minerals is most obscure.

Fixed expressions

The fixed expression in question 6, did not present the teachers with any difficulties.

Cohesion devices

Q9 Look at page 67. (Point to "these problems" in the last line of paragraph 9)
What do you think these problems are? (You can read the page if you want to and then tell me).

The anaphoric reference "these problems", presented every interviewee with difficulties. None of them could clearly identify the two or more problems apparently referred to. This is not surprising since the referents are obscure even to a competent L1 reader. This is, in part, due to the absence of prominence which should be given to the discussion of the problems. Also, the inexplicable paragraph break between paragraphs 8 and 9, disrupts the development of the topic line. The following answers illustrate the teacher's problems in identifying the referents:

G2: These problems are to get this ... (no answer)

G1: ... to the reef because its sloping, and it needs some specialist to get there.

C2: It was the way how the mines ... (no answer)

C1: ... its difficult to go down there - so those difficulties where people are overcrowded by rock and they can't go out.

T1: Problem number one is the reef.

Q: And the other?

T1: ... well I'm still looking So this reef makes a problem in mining. Since this reef is a rock that is found in the mine - so now, these men find it difficult to dig up this rock. So it takes time to come straight to the gold because there is this reef over. I think that is the problem. Because it takes time for them to get real gold because there is this reef on top so they must first remove the rock, and then get to the gold underneath.

Q: Do you agree T2?

T2: Yes.

Q: Are there any other problems?

T1: And ... eh ... , so the engineers are working hard and getting a tough job in removing that reef...

(Note the above explanation also reveals the effect of using the term "reef" in the passage without establishing its meaning.)

PE1: The reef.

Q: Anything about the reef?

PE1: No.

PE2: Sloping of the reef.

PE1: Except...eh..., take the shortage of engineers in SA. So engineers are needed, that's why there are so many people dying in the mines. Because of the shortage of engineers.

Thematic incoherence

Q10a: Read the last paragraph on page 67

Can you think of a title or a heading for this paragraph?

The variety of headings suggested as answers reveal that no single topic receives adequate prominence or support in this paragraph. Clearly, the main idea is not made clear to the reader:

G2: Industrial development.

G1: The importance of gold

C1: Earning money in South Africa.

C2: SA is the best in gold and diamonds.

T1: SA manufactures gold, or SA manufacturing.

T2: SA is important because of gold.

PE1: Export of SA.

PE2: Imports and exports of SA.

Post-reading questions

Thematic incoherence

Of the five post-reading questions, questions 1, 2 and 4, are the most revealing in terms of the effects of thematic incoherence on comprehension.

Q1: What are the two most important things the passage tells us?

The following answers reveal how little prominence is given, in the text, to any two or three main ideas:

G1: The value of gold to SA.

G2: How Johannesburg grew up because of the presence of gold there.

G1: eh ..., its in exchange with other amenities like cars, which we don't have - so we are able to buy things we don't have.

C1: How the town was built by having gold there ...

C2: It tells us Johannesburg is most important because of gold ... Johannesburg feeds us, it is our mother.

T1: Tells us about gold mining.

T2: ... people get these things from minerals - things like earrings, everything...

PE1: The importance of gold.

PE2: The importance of exports.

Q2: What does it (the passage) tell us about minerals?

The following responses reveal that there has been very little logical development of ideas in the passage. They also confirm the confusion between the terms "minerals and "raw materials".

G1: It is dug underground ... they are dug raw, as raw materials.

G2: Minerals value in SA.

C1: Raw materials such as ...

C2: ... wood, even water ...

C1: ... and out of that material you can get something. Its raw when it has not been used, but after it has been used it is useful - eg: desks, paper

T1: Minerals are so important to us, because we are getting money and things that are done from the minerals.

T2: Because it tells us that desks are made of wood and screws and other things we get from minerals.

PE2: Minerals are raw materials.

Q4: What did the passage tell about mines in South Africa?

The following apparently "random collection of ideas" illustrates the effects of thematic incoherence on recall:

G1: Mines in SA have a problem of sloping.

G2: The different mines like coal, gold, diamond, copper, iron-ore mines ...so SA has the deepest gold mines ...

G1: And the places where the mines are found.

- C1: SA is the biggest in gold mining ...
 C2: ... so less in diamonds ...
 C1: ... it also comes out of an open veld and people builded buildings and people get work and it show gold comes from an arc.
- T1: ... the importance of mines in SA, and it also tells about the biggest mines, gold mines Gold mines are so important to SA, and there are also some diamond mines and all that. So ... and that SA earns much money because of gold.
 T2: Yes, and that SA became popular because of this gold.

Passage 2 - What South Africa looks like from space (Appendices G4 and H2)

Pre-reading questions

Background knowledge

The pre-reading questions set out to establish how much background knowledge teachers had about six key terms used in the passage. The answers show that most teachers had reasonable background knowledge about "slopes", "plateau" and "mountain range". There was however, evidence of uncertainty and confusion in the minds of at least two teachers (T1 and T2) about the meanings of "plateau" and "mountain range". Also, "relief", "satellite" and "spaceship" proved to be almost completely unknown, or at least very vague to all teachers.

Q2: Do you know what a plateau is?

T1: A plateau is an escarpment or a hillock.

Q4: What is a mountain range?

Can you tell me or show me what it looks like?

T1: I cannot explain what a mountain range is.

T2: Not sure.

Q5: What is the relief of a country?

PE2: The rivers, mountains, rainfall of a country.

T1: The kind of rain in the country.

T2: I don't know the word relief.

Q1: Do you know what a satellite or a spaceship is?

G1: I know a little..., it's a moving body in the air in space.

G2: It's a moving something in space.

C1&2, PE1&2: I'm not sure of it.

- T2: No, I don't know.
- T1: I've got an idea of a statellite (her pronunciation), but I don't know the other name. I'm sure it's something to do with stars or the TV or the films. Maybe in the film you see something which was done long ago in overseas. You see it happening here by statellilte presently in the TV's.
- Q: Okay, so a spaceship ... is it a different thing or the same thing, or something else?
- T1: It is a different thing. Since it is a ship, I don't think it has something to do with a statellite.
- Q: What would you say it has to do with?
- T1: Well, with ship in the sea.

Text-interaction questions

Register terms applied before their meanings are established

Questions 1 and 2 together attempt to establish the effect of the use of the term "space" without establishing its meaning in the mind of the reader. Question 2 probes the reader's background knowledge in order to determine whether reading the passage changes existing knowledge in any way.

- Q1: Look at page 24. (Point to the word "space" in the heading) What does this word mean in this sentence?
- G1: Means up in the space.
- G2: Space means up (pointing to the sky).
- Q: Can you describe in a little more detail what you mean by "up"?
- G1: Above the surface of the earth.
- G2: Up in the sky.
- C1: I understand there is an ocean this part, and ocean this part, and SA is inbetween, and other countries are a little bit far...
- C2: SA is mountainous, there are rivers, also land, mountains there,... rivers, also space for country.
- T1: The space between the sky and the earth, the part between the sky and the earth.
- PE1&2 High above.

Q2a: Read the title and the first paragraph on page 24
a) Where does space begin and where does it end?

G1: I think it is supernatural, we can't answer. Its questions we always ask ourselves.

G2: No.

C1: Between the mountains and the rivers and the escarpment.

C2: So, between the sea and the river, there is a space between them. Even between the mountains and the river there is a space, but the more space, it is between the sea and the mountains.

T1: Begins up and down to the earth...

T2: Yes, ends up on the sky.

PE1: Starts on the ground and goes up as far as you can go.

PE2: Not sure.

The only meaning of the word, "space", C1 and 2 are able to apply, is inappropriate. Clearly, understanding the view from above, which is critical for this passage, is not clear to them. For the rest of the teachers, the concept of outer space is vague and certainly needs to be more clearly established.

Q4a: Is a relief a map?

Four teachers were sure that a relief and a map are the same, while four felt that they are different, but couldn't explain how:

G1: A relief is not a map but we are trying to show the relief by means of a map.

PE2: They are not the same thing. There are relief maps ... physical maps. There are many types of maps.

Q4b: What does a relief tell you that a map does not tell you?

The following answers reveal the teachers' confusion about the distinction between a map and a relief:

G1: Its reality. The map shows you a small size. The really relief is somewhat big and somewhat got life.

G2: I don't understand... to me it seems as if the map shows us the parts (where) we are, those places we are concerning about. The relief shows us the country as a whole.

C2: The relief tells us about the mountains and the rivers, it does not tell us about the land.

C1: A map shows you where the relief is and how it is built.

PE1&2: No reply.

Question 4c did not present the teachers with any difficulties. Although the terms, "plateau", "escarpment", and "plateau slopes" are not established in the passage, the teachers appear to have worked them out for themselves.

Question 6 presented only T1 with difficulties:

T1: I can't understand it. I'm not sure.

(T1 was also unable to identify the base of the saucer correctly). For the rest of the teachers, however, identifying the base of the saucer and comparing it to the relief of SA presented no difficulties. It is interesting to note G1's comment on the inappropriacy of the textbook illustration:

G1: The book can confuse the child because the escarpment on the west is lower and the saucer doesn't show this. Also the saucer is round but the relief of SA is not round - so the kids will be confused. It is not a good example.

Q8: Read paragraph C, page 26

If I stand at the bottom of Mont-Aux-sources and I want to climb to the top of the mountain, will I have to climb 3480 metres to get to the top?

The responses to this question reveal the effect of applying the term "height above sea level", before establishing it clearly in the mind of the reader. Four teachers said yes, one thought so, and one was not sure. C1 and 2 thought it would be more than 3480 m to the top.

C1&2: I don't think so because the land and the sea measurements is not the same. So I'm sure it will be more than that.

Obscure reference

Q7 Look at Figure 26. What is it a picture of?

The obscure reference to this uninterpretable diagram, and to the line of mountains within it, misled the teachers. For example:

G1: A cross-section of eastern part of SA.

G2: It is a relief of SA.

T2: It is a picture of the saucer turned like this (right side up).

T2: I disagree, it is like this (upside down).

Q: What else is it a picture of?

T1: It shows the oceans...

T2: ... mmm the mountains and the towns.

PE2: The relief of SA looks like an upturned saucer.

Q: Can you show me the line of mountains in this picture?

All agreed (incorrectly) that the line of mountains stretched from the Kamiesberg in the west to the Drakensberg in the east; from coast to coast, over the plateau (which the diagram leads one to believe is the case).

Q10: Look at Figure 27 and read paragraphs d and f on pages 26 and 27. Now cover Figure 27 and read paragraphs d and f and point out on the model (supplied):

- the plateau slopes (where they start and end)
 - the coastal plain (where they start and end)
 - the escarpment (where it starts and ends)
 - the plateau (where it starts and ends)
- as instructed by the text.

Q: The plateau slopes

Only one pair of teachers did not have problems identifying the plateau slopes. The others were confused by the obscure explanations in the text and the poorly labelled diagram:

C1: The Transkei and Tugela valley, here (pointing at the right places). They start in the Transkei and end in the Tugela valley.

C2: I'm sure its really what she says, as the plateau slopes is between the sea and the land. The example is the Transkei - so the plateau slopes are this part - Eastern slopes of the Drakensberg, between the Transkei and Tugela valley.

C1: I'm not sure if there are plateau slopes anywhere else.

C2: Its the only part that shows us the plateau slopes - though other parts may have plateau slopes, they are not the same as these on the eastern slopes.

C1: I'm not sure if there are any on the west side, I'm sure there must be but it (the book) doesn't show us where.

T1&2: (Pointed to the mountains on the plateau - incorrectly)

PE1: (Pointed along the east and south sides of mountains and (incorrectly) to the mountains on the plateau)

PE2: (Pointed along the tops of the Langeberg and Outeniqua mountains - incorrectly)

Coastal plain

All teachers correctly identified the low lying flat parts near the sea, but were not sure of where the coastal plain ends and the plateau slopes begin:

G1: Coastal plain is from the sea, just right up but just before you get to the escarpment. There is no boundary - say half way up to the escarpment - all the way round (Natal to Namibia)... it is a low lying area after the mountains.

G2: It is a low-lying area from the mountains to the sea.... Yes from here (coast) up to here (midway up the side of the Drakensberg).

G1: Yes, the coastal plain is part of the plateau slopes.

G2: mmmm (unsure)

G1: Some parts are coastal plain - but it is still sloping down from the escarpment ...

Q: Escarpment

Only two teachers C1 and 2, were not sure of the escarpment. The only explanation they could give was:

C1&2: We are used to the book words. There is no other explanation - the mountains that form the edge of the plateau.

Q: Plateau

G1 and 2 were sure of the east-west spread of the plateau, but not of its north-south area. They were also confused by the Magaliesberg and Witwatersrand mountains on the plateau. Interestingly, T1 and T2, although they could point out and describe the escarpment clearly, could not distinguish between it and the plateau:

T1: The plateau is also the escarpment.

T2: Yes.

Q: You say, the plateau is the escarpment?

T1&2: Yes.

Propositional deficiency

Q8b Read the last sentence of the second paragraph.

The Nuweveld, Stormberg, Sneeuberg and the Drakensberg are only a few what?

The teachers were unable to supply the missing information properly.

Seven out of the eight thought they were "mountains", while they are actually "mountain ranges". G2 appeared to be completely confused:

G2: They were talking about the height - a few ... now we don't know ... a few metres up or a few mountains? It is rather confusing.

Cohesion devices

Questions 3, 5 and 9 focus on aspects of reference within the passage. The referents in questions 3 and 5 are apparently transparent as they did not present teachers with any difficulties. Question 9 did cause confusion due to the fact that its referents are obscure, and have not been properly established.

Q9: Read paragraph e) on page 27.

Are the Maqaliesberg, Waterberg, Soutpansberg and the Witwatersrand part of the plateau?

Five teachers incorrectly said no, while three said yes. G1 explains the confusion:

G1: Because we don't know from where the plateau stretches ... so we take it that the whole area of the Transvaal with the escarpment is the plateau, with the exception of some hills and mountains.

Fixed expressions

The fixed expression in Question 8c did not present the teachers with any problems.

Post-reading questions

Thematic incoherence

Only question 3 presented the readers with difficulties. Only G1 and PE1 could recall what the passage told about the Witwatersrand. The others could not. This is mainly due to the fact that it is not a major theme anyway, and was probably not a good topic to focus attention on in the question.

Passage 3 - The Climate of the RSA (Appendices G4 and H2)

Pre-reading questions

Background knowledge

Of the four terms, "climate", "drought", "climatic zone" and "rain-bearing wind" in questions 1 - 4, the last two seemed to be unknown to most of the interviewees.

Q3: What is a climatic zone?

G1 and 2 seemed to understand, while the rest were uncertain:

C2: Climate of that part ... (no answer)

C1: ... that particular part.

T2: No, I don't know.

T1: It is the climate of that particular area - I think so.

PE1&2: Not sure.

Q4: What is a rain-bearing wind?

Tell what you know about rain-bearing winds in South Africa

G1 and 2 and PE1 and 2 seemed to have a fairly good understanding of rain-bearing winds. However, the same could not be said for the others:

C1: 'Near the coast ... it is to do with the temperature and the weather.

C2: Along the coast it is always drizzling because of the weather.

C1: If it is windy, you expect that there will be rain.

C2: It must drizzle if there is wind because of the moist air.

T1: No idea.

T2: I've got the idea, but it is faint. It is rain with much more wind.

Only G1 and 2 were able to discuss rain-bearing winds in SA, while the rest did not have any knowledge in this regard.

Text-interaction questions

Register terms applied before their meanings are established

Questions 1 - 3, 5 and 6 assess whether reading the passage affects the reader's understanding of key terms. In particular, they measure the impact of terms which are used without establishing their meaning properly.

Of the five questions, only question 6 did not present teachers with any difficulties. The teachers were all able to identify, on the provided model, the town which got the most rain, and give the correct reason. Questions 1 - 3 and 5, however, were more demanding and revealed that for the majority of the teachers, the terms applied in the passage were still not clearly understood after reading. The following are examples which reveal misunderstandings or uncertainties after reading:

Q1: Look at page 28. (Point at "spells" (of cool, rainy weather) in first paragraph. Do you know what this word means?)

Say in your own words what you think it means.

G1: ... composition or segmented.

G2: The climate there is always ... er rainy in winter.

C2: How is the climate, whether it is hot or cold.

C1: How or which areas it is hot or cold.

T1: Cold... cold rainy weather.

T2: Winter.

PE1 & 2: In winter is usually cool and its always raining.

Q2: Can you say what rain-bearing winds are now?

Four teachers could, two were vague and two were uncertain:

C2: Before it rains there is wind. That means rain comes from moist air.

C1: Especially near the ocean, the rising of the air causes the rain-bearing winds.

PE2: It is still vague.

Q: The passage hasn't helped you understand that?

PE2: No.

PE1: Still unclear.

Q3: What is the difference between a thunderstorm and a rainstorm?

C2: In a thunderstorm there is a lot of wind, there are thunders,... small rain. In a rainstorm there is wind, but strong rain that overpowers this (small) rain er...

C1: Small stones ... small white stones as if they are ice-block ... and strong rain. So in storm (rainstorm) everything can be damaged as compared to a thunderstorm.

PE1: A thunderstorm occurs when the day was very, very hot ... and it is accompanied by the lightnings and GRR ... A rainstorm I can say ... eh ... is just eh ... eh ... soft rain.

PE2: Yes, I agree.

Q5: What is the difference between a desert and a drought?

C1: They seem to be similar.

C2: Deserts are just dry, hot place ... There are mountain places around this desert so though there is less rain it is not too dry...

C1: ... the influence of the moist areas around it ...

C2: ... because there are mountains around this desert, so obviously where there is a mountain, there is a rain.

C1: I feel confused about it. The questions (drought and desert) look alike.

T2: I think the drought is the place where there is no rain and also the desert, there is no rain there, but I can't differentiate.

PE1: On a drought there is totally no rain, but in a desert there is rain sometimes.

Obscure reference

Questions 7 - 10 focus on the effects of obscure references on the comprehensibility of information on maps and diagrams. In this passage, the teachers did not have any difficulties interpreting the maps and diagrams. It is possible that they were more familiar with this section of the syllabus. It is also a possibility, however, that the questions about maps and illustrations for the previous two passages may have prepared them for this kind of question.

It is interesting to note, however, that the only difficulties teachers did have, were directly related to the fact that the term "zone" had not been established in the passage. See questions 8a and 9b. In question 8a, PE1 felt that the bar-graphs (diagrams) showed rainfall zones, as did the thick black lines on the graphs. Clearly for PE1, neither "zones", nor "graphs" are known. Four teachers were not sure of the answer to question 9b because they did not know what "zone" meant:

Q9b: Which rainfall zone is Durban in?

How did you work out your answer?

C1&2: Is zone the place or the area? I'm not sure.

T1: Durban gets mainly rain in summer, so the zone is the ...

PE1: It shows that Durban gets more rain. I don't know whether I'm asking or answering the question.

Thematic incoherence and propositional deficiency

The confused answers to question 4 reveal the cumulative impact of using register terms, the meanings of which have not been established; propositional deficiency, and thematic incoherence on the teachers' comprehension:

Q4: Why is there a desert along the west coast of southern Africa?

C1: It is a desert it is dry. So as you go along the coast it becomes warm, not drier like inland, since there is too much rain falls there along the coast than the middle part. Maybe the mountains can cause the rain, but the desert its open veld.

C2: Its too hot and there is no rain.

Q: So the reason why there is a desert along the west coast is for the reasons you told me?

C1: We are not sure, we can't say the right answer. There's no desert as such since along the west coast, there's rain all the time, it ought to rain all the time.

T1: Yes, along the coast of SA it is dry, so that is why we are having deserts.

T2: Yes.

Post-reading questions

Thematic incoherence and propositional deficiency

Interviewees responses to question 1 reveal that due to the thematic incoherence of the passage, it is difficult to identify the two most significant topics in the passage. Some teachers even suggest topics that are not mentioned in the passage:

Q1: What are the two most important things this passage tells us?

C1: The climate is the temperature and the rainfall.

C2: Yes.

PE1: Currents ... the drought.

PE2: The bearing winds ... the drought.

The answers to questions 2 and 3 reveal that thematic incoherence does not facilitate the reader's attempts to link information from different parts of the text. This is particularly the case when obscure references make it difficult to locate referents, and when register terms (which are sometimes the referents) have not been established:

Q2: Is this possible in areas where there are thunderstorms?

(Explain your answer)

There are two mealie farms next to each other. On one farm the mealies are green and growing well. On the other farm, next door, the mealies are dry and some are dead

In attempting to answer this question, C1 and 2 in particular, seem to be unaware of the thematic context of the passage:

C1: Yes, its similar to that - its raining in this part but not that part.

C2: It also depends on the type of soil, clay soil, sandy soil - it maybe doesn't keep the water.

C1: It can be warm and dry.

C2: It depends to the build.

Q: Let's say all things are the same - is it still possible?

C2: It depends to those people who plough, how they care for the plants...

C1: Yes, it is possible.

Q: Why is it possible?

C2: The direction of the thunderstorm and the winds are blowing. So if it comes this direction (east) the plants can stand - from that side (west) they will fall...

T1 & 2: No, it is not possible.

PE2: No reply.

Q3: What do you think is the main difference between:

- a map showing rainfall zones?

- a map showing average annual rainfall?

The responses to this question reveal that the differences between the two terms "rainfall zones" and "average annual rainfall" are not clearly established. Together with the thematic incoherence of the passage, the result is confusion in attempting to explain the differences.

G1: It tells about the amount of rain per month.

G2: The amount of rain falling in that particular area.

G1: So that yields that type of climate.

C2: It tells us how much rain each zone gets and when it get rain.

C1: Areas like Durban get more rain and some areas get 250mm.

T1: Average will be the possible rainfall in that time, and rainfall zone is known or constant.

PE1: I should think on this map (average annual rainfall) there is plenty of rain. On this (zones)... I think the rain is scarce. As it has got the rain-bearing winds, there are certain places that do not get rain.

Notice that although the teachers appeared to be able to interpret Maps 1 and 2 (questions 9 and 10), the above answers suggest that their understanding of these maps is superficial. This lends weight to the possibility that the map questions in the first two passages 'prepared' the teachers for this kind of question in the third and last passage.

SECTION 4

STRUCTURED INTERVIEW II - AUGUST/SEPTEMBER 1989

THE READABILITY AND COMPREHENSIBILITY OF THE RE-WRITTEN PASSAGES FOR STD 3 TEACHERS

The textbook passages were re-written for this interview (see Appendices J1-3), with the express purpose of making them as readable and comprehensible as possible for the intended readers - Std 3 pupils and teachers. In order to note any significant differences between the textbook passages and the re-written passages, it was essential to interview the same teachers. For the Interview Schedule see Appendix K, and for the interviewees' responses see Appendix L.

- Notes:
- 1) The three main question categories and their subdivisions used in the textbook interview, are retained for the re-written passage interview.
 - 2) As for the textbook passages, the interview questions for the re-written passages focus on how their discourse properties affect readability and comprehensibility.
 - 3) Due to unforeseen circumstances, one of the original Transkei teachers was replaced by a new teacher. Her background knowledge in the pre-reading section for each passage is ignored. This is done because it is impossible to compare one reader's background knowledge with another's in order to draw conclusions about change over time.

Analysis of the data - The re-written passages

As a preliminary step, in order to determine how much the teachers' background knowledge could be expected to have changed since the textbook interview, seven months earlier, the following pre-interview question was asked:

Q: When I interviewed you earlier this year, there were some things you were not sure about. Have you been able to find out about some of those things this year?

Four teachers claimed that they had tried and four had not. However, none of the four that had tried were able to say what they had

discovered. It is hoped that by analyzing the responses to the pre-reading questions for each of the three passages, it will be possible to determine whether the teachers' background knowledge had changed significantly enough to influence the data.

Passage 1 - Mining in South Africa (Appendices J1, K and L)

Pre-reading questions

Background knowledge

The interviewees' responses revealed no significant change in background knowledge for questions 2, 3 and 4. There were however indications that some teachers had gained new knowledge for questions 1, 5 and 6. Those responses that reveal changes are cited below:

Q1: Do you know what minerals are?

Tell me what you know about minerals

Textbook interview:

PE1&2: Is it not production of soil?

Re-written passage:

PE1: Yes, they are raw materials from deep down the ground. For example: gold, diamond, copper, etc.

Q5: Have you ever seen a mine?

PE1, who had not seen a mine at the last interview, had seen a coal mine on television since then, and was familiar with:

... shafts and the people who were working there. The other ones driving a small train, taking the coal outside.

Q6: Do you know where gold is mined in SA?

Can you give me any details?

At the previous interview only one teacher had been able to name a gold mining town. This time several teachers tried, but were nevertheless still inaccurate or incorrect:

G1: Johannesburg ... Heidelberg, Vanderbijlpark - I'm not sure.

C1: Johannesburg and places around it.

T1: Kimberly, Phalaborwa.

It would seem therefore that although some teachers' background knowledge had changed slightly for this passage, it was not significant enough to

give them a knowledge advantage when reading this re-written passage. In some cases, the new knowledge was incorrect anyway, which if anything, would put the re-written passage to the test.

Text-interaction questions

Register terms

Questions 2 and 3a determine whether reading the passage has clearly established the meanings of the terms "minerals" and "arc". Answers to question 2 show that the readers are aware of the fact that only some raw materials are minerals, and that these are mined. It is significant that the teachers do not confuse minerals with raw materials (such as water and wood) as they did in the previous interview.

After the re-written passage:

G1: Minerals are raw materials that come from under the ground.

T2: Minerals are raw materials that are found from the mines.

Compare minerals listed after the textbook passage: T2: Coal, iron, gold, wood; with those listed after re-written passage: T2: ... gold, iron, coal and diamonds.

Answers to question 3a, show that after the re-written passage every teacher had a clear idea about what an arc was:

G1 & PE2: Curve shape... C-shaped.

G2: ... like the back of a bean.

C2: Shaped like a horseshoe.

T1: Like a boat shape.

PE1: Like an upturned saucer.

Reference

To test whether the teachers could apply their new understanding of the word "arc", they were asked to identify the arc on the map (p 376) and to name three gold mining towns (Questions 3b and c). Unlike the textbook interview, when no teacher could identify the arc on the textbook map, every teacher identified the arc and three mining towns in it correctly. This is attributable to the integration of the map and the key into the text, and to clear references to obvious referents on the

map. The same applies to question 9 which requires the reader to complete a task using the same map. All teachers were able to complete the task correctly.

Question 6 assesses how clear the illustration of the inside of a mine is (p 378), and how clear the references to its contents are. In the textbook passage, the teachers had difficulty using the key to Figure 54. Consequently, they could not identify the main gold reef, and confused items in that diagram. In the re-written passage, however, every teacher was able to identify all items correctly, with little hesitation. All eight teachers said that they had used the numbers in the key to help them.

It would seem that the integration of illustration and key into the text, facilitates clear reference. Also note that the illustration in the re-written passage is clear, simple and clearly labelled, showing only the details referred to in the text and the key.

Question 8 again illustrates the importance of clear reference to clear, simple illustrations, which support the text by illustrating only what is discussed. When compared to the variety of interpretations of Figure 55 in the textbook passage; it seems clear that the new illustrations (p 380) do support the re-written passage and reinforce meaning. Compare the following responses.

After the textbook passage. Figure 55 shows:

- G2: Value of gold.
- G1: Value of gold.
- C1&2: How much gold we have.
- T2: The role of gold.
- T1: How SA gets gold.

After the rewritten passages. The pictures show:

- G1: The value of selling gold, other goods and diamonds.
- G2: How gold earns money.
- C2: More money comes from selling gold... much money from selling goods, also less money for selling diamonds.
- T2: Money from selling gold ... money from selling goods ... money which comes from selling diamonds.
- PE1 & 2: We get that money ... from selling gold and diamonds.

Propositional deficiency versus explicitness

Question 7 focusses on the effect of propositional explicitness in the paragraph - **Gold brings much money to South Africa**. The correct answers from every teacher strongly suggest that the propositionally explicit paragraph facilitated comprehension.

Syntax

Question 1 focuses on the impact of simpler syntactic structures. The complex syntactic structure (Q2 in textbook interview), making the agent obscure in the textbook passage, was avoided. This enabled the readers to easily identify the agent in this sentence in the re-written passage.

Unfamiliar expressions

The unfamiliar expression in question 6 of the textbook interview did not present teachers with difficulties and is therefore not a factor in the analysis. Nevertheless, the more "appropriate" expression in the re-written passage was also not experienced as a problem.

Cohesion devices

Question 5c provides some interesting information:

Q5c: (Point to "when this happens" in the eighth line of the paragraph - paragraph 2 page 3)

What does "this" refer to?

The referent of the anaphoric reference "this", was correctly identified by five of the eight teachers. The other three had difficulties as they identified incorrect referents:

G2: When the great rocks fall on them.

T2: If there is any irregularity or when the great rocks fall on them.

T1: Danger.

This particular reference was intended to be clearer than a similar reference in the textbook passage (Question 9), which all of the teachers had difficulty with. That five teachers identified the referent correctly, is partly due to the fact that: a) it was relatively close to the reference (the previous sentence), and b) it was within the same paragraph (unlike one of the referents in the textbook passage).

However, that three teachers did not locate the referent, could have been due to the fact that it is in a particularly long paragraph. This suggests that paragraph length might be another factor which affects the readability of texts intended for the EFL/ESL reader.

Thematic coherence

Q5a): Read the last paragraph on page 3 - (The long paragraph referred to above)

Can you think of a title or a heading for this paragraph?

Five teachers were able to give appropriate titles:

C1&2,&G1: How gold is dug/mined.

PE1 & T1: The gold mines in SA/Gold mine.

G2 and T2 gave fairly unsuitable titles which revealed that they had not been able to identify the main idea of the paragraph; and PE2 identified one of the sub-topics of the paragraph as the main idea:

G2: The invention of gold.

T2: The development of gold mines in SA.

PE2: The duty of the engineers.

PE2 probably had difficulty identifying a title because the paragraph was indeed too long. It may have been better if the topic of "engineers" was dealt with in a separate paragraph. Nevertheless, for five out of eight to have given appropriate titles is a marked improvement over the variety of inappropriate titles given for a comparable paragraph in the textbook. This is attributable, in the rewritten passage, to the prominence given to the main idea by the logical development of the topic line.

Question 5c is a comprehension question which depends on thematic coherence for its answers. Since all teachers answered the question correctly, it may be concluded that this section of the paragraph is thematically coherent. This seems to confirm that thematic coherence facilitates reading comprehension.

Post-reading questions

Thematic coherence

Questions 1 - 5 all focus on the effects of thematic coherence on comprehension.

The answers to question 1 reveal a significantly higher degree of similarity in the main topics identified for the re-written passage, than for the textbook passage. The two most important things the re-written passage tells us:

G2: 1) The value of minerals and ...
2) ... the difficulty of getting them out of the ground.

G1: 1) Where minerals are found.
2) How they are found.

C1: 1) How gold is mined.
2) How we get money.

C2: 1) Where we get this gold.
2) How gold is mined.

T2: 1) Raw materials and minerals (mines give us minerals).
2) Different kinds of minerals.

T1: 1) Mining and minerals.
2) Mining engineers.

PE1&2: 1) Mining in the RSA.
2) The importance of exports and imports.

It is interesting to note that all teachers, except one, accurately recalled what the passage told about minerals. T1 it seems, was still confused about the difference between raw materials and minerals; in spite of her earlier clear explanation of the difference. It is significant to note however, that her confused ideas can be traced directly back to the textbook passage (see below). This suggests that reading the re-written passage only once, was not sufficient to correct the misleading information she has probably been relying on in the textbook for years:

T1: Yes, minerals are so important even in our classrooms we are using desks which are from wood which is from the soil and in the soil there are minerals. And we need iron which also comes from copper right down in the soil.

As for the textbook passage, question 3 for the re-written passage did not present any difficulties. Although for question 4, the teachers did not recall everything about mines in SA, what they did recall was correct. These accurate answers provide further evidence to suggest that the thematic coherence of the passage did facilitate reading and comprehension.

Passage 2 - The Land of South Africa (Appendices J2, K and L)

Pre-reading questions

Background knowledge

In this interview, as in the textbook interview, the terms "slope" and "mountain range" did not present problems. "Plateau", however, which the teachers seemed to have a fairly clear knowledge of in the textbook interview, seemed less clear to at least three teachers before reading the re-written passages:

T1: The edge of the mountain or the escarpment of the mountain. The ending of the mountain.

PE1&2: A flat piece of land just above sea water level.

This uncertainty provides evidence to suggest that the textbook passage has not clearly established the meaning of this term in the minds of these readers, in spite of regularly teaching this section of the geography syllabus.

The word "relief" which was not clear to at least three of the teachers in the textbook interview, was still unclear for C1 and 2,

C1 and 2: A type of weather.

T1, however, had learned something:

T1: Last time I correlated the relief with the climate - the "relief rain". But when I went back I saw from the textbook that the relief is the same word as the build.

T1's misunderstanding of "relief" in the textbook interview provides an interesting example of how the ESL reader's application of what is probably the only "known meaning" of a word, in a new context, can affect meaning. This example highlights the importance of establishing the meaning of register terms before applying them; and where possible, to provide semantic reinforcement. For this reason, it seems, the word

"spacerocket" in the re-written passage is more appropriate than "spaceship". (Notice the appropriacy in this context of "rocket" versus "ship", which caused confusion in the textbook interview.)

That five of the eight teachers were still unsure of the meaning of "space" in this context, suggests that it is a concept that needs to be more clearly established. See for example the following confused responses to Question 1b) of the text-interaction section on the re-written passage:

C1 & 2: Is it not the space between mountains?

T1: It is something like a parachute.

PE1 & 2: Don't know.

Text-interaction questions

Register terms

Since the readability of the textbook passage was clearly reduced by the number of unknown register terms, care was taken to establish the meanings of each of these terms in the re-written passage before applying them. For this reason, many of the questions on this re-written passage (1, 5, 7, 8, 9, 10 and 11), discussed below, focus on register terms. This was done in order to assess the effect of establishing their meanings before applying them.

In an attempt to produce a "predictive" heading (p 383) that would in fact activate appropriate background knowledge for the passage, the word "space" was replaced by the expression "from high up in the sky". Question 1 assesses the effectiveness of this alteration. The following responses show a very clear improvement in this crucial area, which suggests that the teachers are more appropriately prepared for the discussion of relief than they were by the textbook passage:

G1: When you are high up and you look down.

C1: One who goes up in the sky and looks and see what is on the ground.

T1: What does he see from in the sky.

Questions 2b) and c) determine whether the passage has in any way improved the readers understanding of the word "space" in this context. The following responses show a clear improvement for C1 and 2 who were confused in the textbook interview. Compare:

After textbook passage

C1&2: ... between the sea and the river, there is a space between them. Even between the mountains and the river there is a space, But the more space, it is between the sea and the mountains.

After re-written passage

C1&2: Below the earth - above the sky.

Apart from these two teachers, the understanding of space and where it is, was not significantly different for the rest of the teachers who had showed reasonable understanding in the textbook interview.

Question 5a) attempts to determine whether the re-written passage helped the teachers to understand the distinction between a relief and a map more clearly than the textbook did. Three teachers felt that there was a difference between them while the rest were sure that there was not. The attempts of those who did see a difference, to explain the differences, were no clearer than they were in the textbook interview. This suggests that either: a) the attempts to differentiate between them in the re-written passage were not adequate, or b) that these concepts and the differences between them are more complex than they seem, and need much more careful explanation.

Question 5b) determines whether there has been any change in the teachers understanding of what happens to rain that falls on the four main features of SA's relief. There was no change. All of the teachers could explain the processes correctly in both interviews.

Question 7 determines whether there has been a change in the understanding of "height above sea-level" (Question 8a of the textbook interview). In the textbook interview none of the teachers showed understanding of this concept. After reading the re-written passage, four teachers had a much clearer understanding and were able to answer correctly, realizing that the foot of the mountain was not at sea-level. However, three teachers' explanations revealed that there was still underlying confusion:

T1: Because Mon-aux-sources is near to the sea and it is the lowest land near the sea. So you cannot climb 3480m.

T2: Because you are at the lowest

Q: Where is the bottom of the mountain?

T2: ... deep down in the soil ... When you say sea-level, do you mean deep down the sea?

PE2: No. Because the land below Mont-aux-sources is the sea ... more because the sea is deep.

These responses indicate that even with the attempts to explain complex concepts in more accessible terms in the re-written passage, a lot of background knowledge is assumed by the inclusion of such terms.

Questions 8 - 11 all assess the teachers understanding of the register terms "mountain range", "escarpment", "plateau", "coastal plain" and "plateau slopes". As in the textbook interview, the teachers did not have any difficulty in explaining what each of these were. It was noticeable however, that their explanations were clearer and more precise in this interview than in the textbook interview. Compare for example G1's explanation of the escarpment:

After textbook interview

G1: Is from just near the Limpopo river right round to the west to SWA somewhere.

After re-written passage

G1: The line along the top of the highest mountains.

Obscure reference

Questions 3, 4 and 12 focus on the impact of clear references to clearly illustrated and labelled referents on maps and diagrams.

Q3: Look at the picture on page 2.

What is it a picture of?

Can you show me the line of mountains in the picture?

The fact that every teacher identified both the picture as the relief of SA, and the line of mountains correctly, is in stark contrast to the difficulties they had answering questions about the textbook illustration.

Question 4 is intended to illustrate the impact of a clear, simple map accompanied by a clear simple key. It is significant, when compared with the confused responses to Figure 25 in the textbook, that all eight

teachers identified the "line of mountains" correctly, and that only two did not identify the "low flat land" of the coastal plain correctly.

Question 12 on the re-written passage (question 10 on the textbook passage) assesses the impact of already clearly established register terms on the teachers' ability to identify the features of the relief of SA on a three-dimensional model. In contrast to the numerous difficulties most teachers had identifying these features after reading the textbook passage; the teachers were able to identify the features with ease after reading the re-written passage. Compare for example:

After textbook passage

Six teachers were unsure about exactly where the plateau slopes were; none of the teachers were sure of the boundary between the coastal plain and the plateau slopes; two were not sure about the escarpment, and four were uncertain about the plateau.

After re-written passage

Only one teacher was uncertain about the plateau slopes:

T1: I'm not quite sure. I know them theoretically, but I'm confused on the model.

Cohesion devices

Questions 2 and 6 on the re-written passage (questions 3 and 5 on the textbook passage), focus on cohesion devices which did not seem to present the teachers with difficulties in either passage. However, question 9c (9 on textbook passage) does provide evidence to show how clear reference does facilitate reading comprehension. Compare the following examples:

Q9/9c: Are the Magaliesberg, Waterberg, Soutpansberg and the Witwatersrand part of the plateau?

After textbook passage

Five teachers answered incorrectly. Their confusion was explained by G1:

G1: I don't know from where to where the plateau stretches.

After re-written passage

Apart from one, all of the teachers showed that they understood the extent of the plateau and that the Magaliesberg etc. were part of it.

Post-reading questions

Thematic coherence

As an alternative to the three questions focusing on thematic coherence at the end of the textbook passage, it was decided to give the teachers a task which tested both the thematic coherence of the passage, and how well the meanings of four key register terms had been established. All eight teachers completed the task correctly, with only one confusing the plateau and the escarpment. This suggests that the passage is thematically coherent and that the meanings of the concepts were clearly established. That comprehension was facilitated as a result, seemed clear.

Passage 3 - The weather in South Africa (Appendices J3, K and L)

Pre-reading questions

Background knowledge

As it was clearly established in the textbook interview that "climatic zone" was not at all understood, it was left out of the re-written passage. On consulting the syllabus, it was decided that the exclusion of this term would not deprive the learner of any significant information at this stage.

Questions 1 - 3 on the re-written passage are intended to determine how much the teachers' background knowledge has changed since the textbook interview. As in the textbook interview, "climate" and "drought" were fairly well understood before reading the re-written passage, revealing at least some background knowledge. There seemed to be no significant changes in this regard. The readers' knowledge had however changed about "rain-bearing winds". All of the teachers were able to describe what they were, but only G1 and 2 (as in the textbook interview) were able to apply the term to SA. This suggests that reading the textbook passage for Interview 1 was the only new information the teachers had gained in terms of background knowledge.

Text-interaction questions

Register terms

Questions 1, 2, 4, 5 and 7 of this section assess the effects on comprehensibility, of establishing the meanings of terms clearly before applying them. In the textbook interview teachers did not have any difficulty explaining "drought" and "climate". It was not surprising, therefore, to find that they did not have any difficulty with these terms in questions 1 and 5 of the re-written passage. However, the improvement in the teachers' answers to questions 2, 4 and 7 after reading the re-written passage is marked. All eight teachers had very clear ideas about rain-bearing winds (question 2). Compare for example:

After textbook passage

PE2: It is still vague.

PE1: Still unclear.

C2: Before it rains there is wind that means rain comes from moist air.

After rewritten passage

PE1: Winds that bring rain from the sea...

PE2: ... from the sea to the land.

C2: The wind which comes from the sea, because they will bring rain.

Again, after reading the re-written passage, the teachers showed a clearer understanding of the differences between thunderstorm and a rainstorm. Compare for example:

After textbook passage

PE1: A thunderstorm occurs when the day was very, very hot ... and it is accompanied by lightning and GRR.... A rainstorm ... eh ... is just... eh... eh... soft rain.

PE2: Yes, I agree.

After re-written passage

PE1: In a rainstorm the whole area is getting rain, but in a thunderstorm certain places getting rain and other places do not.

PE2: In a thunderstorm there is that thunder and that flashing of lightning. It is not in a rainstorm.

Question 7's answers show that teachers understood the difference between a desert and a drought better than they did after reading the textbook passage. Compare for example:

After textbook passage

- C1: They seem to be similar... I feel confused about it. The questions (drought and desert) look alike.
- C2: Deserts are just dry, hot place... There are mountain places around this desert. So though there is less rain, it is not too dry ... because there are mountains around this desert. So obviously where there is a mountain, there is rain.

After re-written passage

- C1: A desert is a place where there is no rain. The plants there is too little - didn't get enough rain. The drought is where there is dry and no rainfall for that moment - its not like this (a desert).
- C2: In a desert the weather ... the climate is the same all year round. A drought is a special dryness for that particular time.

In each of the above cases it would seem that improved comprehension is a result of two main factors. The first is that meanings of terms are properly established. The second relates to the thematic coherence of the paragraphs in which each topic line is clearly and logically developed, leaving the reader with a clear idea of what the paragraphs are about.

Obscure reference

Questions 2b, 6, 8, 9, 10, 11, 12 and 13 focus on the effects of comprehensible references to maps and diagrams.

As in the textbook interview, none of the diagrams or maps referred to in questions 2b and 6 - 13 presented the teachers with any difficulties. It is therefore impossible to say whether the obviously clearer references in this passage had any impact on readability and comprehensibility. The questions are therefore unrevealing. It is however significant to note, that the only problem teachers did have with the re-written passage, was with question 9 which asks questions about Map 9. Six of the teachers were confused by what turned out to be an unintentionally "obscure reference": the fact that the key to Map 9 was not on the same page as the map. This caused six of the eight teachers to refer back to the key for Map 8. This caused confusion and some teachers tried guessing at answers, until they realized that the key was on the following page.

Thematic coherence and propositional explicitness

Questions 3a) and b) focus attention on the effects of thematically coherent and propositionally explicit paragraphs. The answers to these questions are contrasted with the answers to question 4 of the text-interaction section, in the textbook interview. Although the questions in the two interviews do not ask exactly the same question, the confused attempts to answer the textbook interview question apparently reveal the effect of the thematically incoherent passage. On the other hand, after reading the re-written passage, all eight teachers show a clearer understanding of the process resulting in a rainy, wet climate in Cape Town and a dry climate in the Karoo. Compare for example the following responses:

After textbook passage

Q4: Why is there a desert along the west coast of South Africa?

T1: ... along the coast of SA it is dry, so that is why we are having deserts.

T2: Yes.

C1: It is a desert it is dry. So as you go along the coast it becomes warm, not drier like inland. Since there's too much rain falls there along the coast than the middle part. Maybe the mountains can cause the rain, but the desert is open veld... We are not sure, we can't say the right answer. There's no desert as such since along the west coast, there's rain all the time, it ought to rain all the time.

Notice that although C1 comes close to some understanding, she appears to be confused, because she thinks that rain on the east coast means that there is also rain "all the time" on the west coast.

After re-written passage

Q 4a: What makes the weather rainy and wet in Cape Town?

T1: The first point: there are rain-bearing winds in Cape Town, and the second things is that there are high mountains near Cape Town.

Q 4b: Why is the land often dry in the Little Karoo?

T1: In the Little Karoo, first it is in the inland. It is not near the sea so there is a desert. There is no rain in the Little Karoo because it is right in the inland, so it is dry ...

T2: ... the mountains stop the big clouds from getting to the Little Karoo.

Post-reading questions

Thematic Coherence

Both questions 1 and 2 focus on thematic coherence. They are intended, when compared to the responses for the same questions in the textbook interview, to show that improved thematic coherence does facilitate comprehension. Both questions require the readers to extract ideas from the text and show their understanding by explaining them in new situations, outside the text.

For question 1, teachers' responses after the textbook passage revealed that they had not fully understood the discussion of thunderstorms. The re-written passage on the other hand, succeeded in making its point. Compare, for example, the following answers to question 1:

After textbook passage

C2: ... depends on the type of soil, clay soil ... it depends to the build ... it depends to those people who plough ... The direction of the thunderstorm and winds are blowing, so if it comes this direction, the plants can stand, - from that side they will fall...

After re-written passage

C2: Yes, it is possible... can be a thunderstorm here and no thunderstorm here.

Because the responses to question 2 in the textbook interview question revealed that the difference between "rainfall zones" and "average annual rainfall" was not understood, these terms were omitted from the re-written passage. Instead, the text and the map headings clearly explained what each map was about in simpler terms. This appeared to assist the teachers, as all eight had clear ideas about the differences between them and there were no signs of confusion.

CHAPTER 5

FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

This chapter is divided into three main sections as follows:

- Findings of the data analysis in chapter 4
- Conclusions
- Recommendations

SECTION 1

FINDINGS OF THE DATA ANALYSIS IN CHAPTER 4

The initial survey, April/May 1987: Teaching and learning content subjects in Std 3:

The initial survey confirmed 1) the absence of continuity in the transition from mother-tongue to English medium instruction, 2) the mismatch between content subject textbooks and their Std 3 users, and 3) a heavy reliance on the rote learning method. It also provided evidence which suggests that the three main sources of difficulty in teaching and learning content subjects in Std 3 are located in:

- the pupils' low level of language competence;
- the textbooks;
- teaching/learning methods.

Significantly, the survey provides evidence to suggest that a fourth source of difficulty is that teachers also experience reading and comprehension difficulties with the textbooks. Most significant for this study, however, is the finding that pupils are unable to read the textbooks intended for them, for at least the following reasons:

- the language of the textbooks is too difficult;
- textbook tasks and exercises are beyond the pupils' ability because they are expressed in incomprehensible language and they are too difficult.

Structured Interview I, Part One - April/May 1989: Teaching and Learning geography in Std 3

The findings from this interview (a repeat of the initial survey interview - with a focus on geography), show that there was little or no change in the teaching/learning situation over the two year period between interviews. This suggests that the description of the situation in the initial survey, is accurate and reliable. The interview confirms that the three main sources of difficulty in teaching/learning geography are:

- pupils' linguistic incompetence (particularly reading);
- incomprehensible textbooks;
- inappropriate teaching/learning methods (specifically rote learning).

Since pupils in the interviewees' classes cannot and do not read the geography textbooks intended for them, they are entirely dependant on their teachers for what they learn. If the teacher, relying heavily on the textbook for lesson content, determines both the quality and the content of lessons; then the nature of the teacher's interaction with the textbook is crucial. To show that teachers have problems reading and comprehending textbooks intended for their pupils, would provide evidence that such textbooks are wholly unsuitable for pupils in their first year of EMI. The focus of the research, therefore, was shifted **from the pupil to the teacher**. Although it was proved later (see Structured Interview 1, Part Two discussed below), this interview did not confirm that the teachers had significant difficulties of this kind. On the contrary, all interviewees except one, claimed not to have any difficulties with the textbooks.

Structured Interview I, Part Two, April/May 1989 - The Readability and Comprehensibility of geography textbooks for Std 3 teachers

It was shown in each of the textbook interviews, that as a result of the ways in which the passages fail as well constructed expository discourse, the teachers did have a number of difficulties. It is important to note, that there were no significant differences between the difficulties experienced by the rural and the urban teachers.

The following reading and comprehension difficulties were identified.

Teachers:

- 1) often lacked the background knowledge necessary to interact meaningfully with the texts;
- 2) misinterpreted, misunderstood or did not know the meanings of terms whose meanings were not established in the texts;
- 3) misunderstood whole sections of the texts because the meanings of register terms had not been clearly established;
- 4) were often unable to work out the meanings of unknown vocabulary because of the absence of semantic reinforcement;
- 5) in some cases, failed to respond to exemplification, and therefore to generalize from obscure examples;
- 6) were often unable to locate or identify important referents on supporting maps and diagrams due to obscure references to them. This was complicated in the texts by confusing labels on equally confusing illustrations;
- 7) did not use 'keys' to maps and diagrams until prompted - probably because the concept was not fully understood, and was not established in the texts;
- 8) found it difficult to interpret and extract information from the often uninterpretable two and three-dimensional maps and diagrams;
- 9) were sometimes unable to locate referents within the passages due to obscure cohesive links;
- 10) were often unable to supply missing information omitted in propositionally deficient passages;
- 11) found it difficult to identify major topics/main ideas due to thematic incoherence within and across paragraphs.

It was also shown that there were some examples of interview questions in which teacher's difficulties were postulated but not confirmed. These were:

- 1) all fixed expressions in the passages;
- 2) a few cohesion devices;
- 3) some obscure references;
- 4) some register terms;
- 5) some instances of propositional deficiency.

There were so few of these instances, however, that their cumulative impact is of no significance when compared with those instances that did cause reading and comprehension difficulties. This is especially the case because these texts are actually intended for pupils in their first year of EMI, and are not designed specifically for the teacher. It is particularly significant that teachers have been shown to experience the kinds of difficulties anticipated for pupils using such textbooks (Chapter 1). Pupils' difficulties with the textbooks could not be identified, quite simply, because they were not able to read the texts at all. This evidence strongly suggests that such textbooks are wholly unsuitable for Std 3 pupils.

Structured Interview II, August/September 1989: The Readability and Comprehensibility of the re-written passages for Std 3 teachers

It was shown in each of the interviews, that the re-written passages facilitated the Std 3 teachers' reading and comprehension in the following ways.

Teachers:

- 1) generally had available the background knowledge necessary to interact meaningfully with the texts because a background of accessible experience was provided in the passages;
- 2) understood the meanings of most register terms because their meanings were established before their application;
- 3) did not misunderstand whole sections of the texts because register terms had been clearly established;
- 4) were able to work out the meanings of unknown terms because semantic reinforcement was provided;
- 5) were able to locate and identify almost every referent on supporting maps and diagrams because references to them were clear. Also, illustrations and labels were made as simple and clear as possible;
- 6) were able to use 'keys' to maps and diagrams successfully. This is probably due to their integration into the texts, making references more direct. Also, it was not assumed that the readers were familiar with this convention, and semantic support was provided where necessary;

- 7) were able to interpret and extract information from all maps and diagrams. This was apparently due to the inclusion of only those details referred to in the text and the key; thus avoiding unnecessary details. In addition, illustrations were simpler and as close to the readers' experience as possible;
- 8) were generally more able to locate referents within the passages as cohesive links were made as obvious as possible;
- 9) did not have to supply missing information in and between paragraphs because they were propositionally explicit, even extending to stating the obvious;
- 10) were much more successful in identifying major topics/main ideas because attempts were made to produce thematically coherent texts.

It was also shown that teachers did experience some difficulties with the re-written passages. They were:

- 1) **An extended paragraph (Passage 1, Appendix D1):**
In spite of the obvious cohesive links and thematic coherence, some teachers found it difficult to identify a referent and the main idea in a paragraph that appears to be too long (see the second paragraph on page 3).
- 2) **A few register terms (Passage 2, Appendix D2):**
Teachers' difficulties with the following terms after reading, revealed that the passage failed to establish their meanings: "space", "relief", "height above sea-level".
- 3) **The location of the key to a map (Passage 3, Appendix D3):**
That fact that the key to the Map on page 9 is located on page 10 caused some confusion. Until the teachers had worked out where to find the 'correct key', they either tried to use the key for the previous map, or guessed at answers to the question.

The cumulative impact of the above however, is far outweighed by the overall improvement in the readability and comprehensibility of the re-written passages over the textbook passages.

SECTION 2

CONCLUSIONS

This inquiry has identified problems arising from what is essentially an inability to comprehend geography textbooks on the part of, not only pupils, but also teachers. The findings provide substantial evidence to show that two textbooks, approved and used widely for teaching geography in the first year of EMI, are incomprehensible to Std 3 pupils and only partially comprehended by their teachers. Consequently, they are used only by the teachers, whose reliance on them appears to be total. The content of geography lessons is therefore:

- based on portions extracted from the text, partially grasped and often misunderstood;
- provided in largely unintegrated lists of facts extracted by the teachers;
- taught mainly in the mother-tongue.

Specifically, the weaknesses of the teachers were:

- poor levels of reading competence, revealed in their difficulties in processing the partially incomprehensible textbook passage (see p 220);
- an inability to interpret maps and diagrams as they appear in the textbooks;
- limited knowledge of geography as a subject, revealed both in limited background knowledge, and in regarding the textbook as reflecting the syllabus;
- not recognizing the extent to which language is the problem, revealed in their perception that the textbooks did not present them with any difficulties (see their difficulties listed on p 220);
- methodological incompetence revealed in:
 - 1) teaching unintegrated facts by rote;
 - 2) no learning by discovery;
 - 3) repeated testing which reinforces memorization and regurgitation.

As far as the children are concerned, their inability to acquire any real understanding of geography is mainly due to:

- their command of English (EFL in most cases), is far below the threshold level assumed by the textbook writers and syllabus makers (see note 1, p 229);
- their inadequate cognitive preparation (see note 2 p.229);
- the method of their instruction presents only one unsuitable learning style - rote memorization and regurgitation.

Concerning the textbooks, their incomprehensibility is mainly due to their failure to account for the intended readers' linguistic and conceptual threshold levels, and because they fail extensively as well constructed expository discourse. Specifically, they are incomprehensible as a result of the cumulative impact of:

- false assumptions about what is accessible background knowledge;
- thematic incoherence;
- propositional deficiency;
- absence of logical relations between propositions;
- obscure reference;
- the meaning of unknown words and register terms are not established;
- incomprehensibility of supporting maps and diagrams.

THE RESULTS OF THIS INQUIRY THEREFORE CARRY AN IMPLICIT INDICTMENT OF THE FOLLOWING:

1. Curriculum designers and syllabus makers who are so out of touch with "where the child is at", and ignorant of the need:
 - a) for continuity between the JP and HP phases;
 - b) to prepare the child linguistically and cognitively for this transition (see note 3, p. 229).

2. Textbook writers who are unaware of, or incapable of, creating readable texts for the ESL/EFL primary school child; who produce texts which give little or no evidence of recognizing the crucial nature of the language problem facing both the pupil and the teacher.
3. Publishers who produce and market largely incomprehensible textbooks throughout southern Africa (See Note 4, p.229), which show:
 - a) little or no concern for the usability of their product;
 - b) every evidence of haste in production, e.g. poor quality illustrations not properly integrated into the text; non-revealing headings; disorganized format and content.
4. Departmental textbook committees which receive publishers' submissions, scrutinize and approve or reject them. Those committees composed of academic specialists (e.g.: that of the DET), who have no experience of the child and the classroom, are guilty of not acquainting themselves with the situation in order to ensure that reader and text are compatible. Those committees composed of inspectors, subject advisors, and those with a knowledge of the classroom, are guilty of ignoring the realities of the primary school situation in approving inappropriate textbooks.

(On the obvious lack of co-operation between the four bodies discussed above, see Note 5, p.229.)

5. Training Colleges, where trainees appear to gain little knowledge of:
 - a) content subjects;
 - b) educationally sound methods of teaching and learning;
 - c) appropriate reading and writing skills.

Limitations of this study

Since the sample in this study is confined to schools representing Transkei, Ciskei and Eastern Cape, it cannot be assumed that the findings, ipso facto, are relevant to the whole of southern Africa. Had the study included the following, this might have been the case:

- Classes and their teachers from other regions and territories in southern Africa, including the largest urban areas where standards may be higher;
- more than two of the six approved Std 3 geography textbooks on the DET "restricted list".

With regard to the situation in other parts of southern Africa, it is significant to note that there is strong evidence to suggest that in Bophuthatswana and Transvaal at least, the situation in Higher Primary schools is not unlike that described in this study. See Burroughs (1987); Macdonald (1986, 1987, 1990); van Rooyen (1990). Ellis (1984: notes) also found that pupils' general English competence was better in one of the Transkei schools involved in this study (Langalethu HPS), than in the Soweto primary schools he visited.

With regard to Std 3 textbooks other than those analysed in this study, the work of Lanham (1986, 1987); Burroughs (1987); Macdonald (1987, 1990); Meyer (1989); and van Rooyen (1990), also provides significant evidence to suggest that a number of other existing Higher Primary content subject textbooks are likely to be largely incomprehensible to their intended readers.

There is therefore evidence to suggest that the findings of this inquiry may in fact apply more generally to the situation in primary schools throughout southern Africa. In order to establish this, it will be necessary to carry out replica studies in several of the main regions and territories concerned.

Finally, the possible challenge which could be raised in defense of the syllabus and the textbook: that standards are raised by setting the syllabus, consequently textbooks, at higher levels than presently realisable (time would have to be allowed, of course, to enable the education system to catch up) - cannot be accepted as a feasible stratagem. Pupils cannot "catch up" in a given subject if they lack the medium (English), through which it is learnt.

SECTION 3

RECOMMENDATIONS

Arising out of this inquiry are the following recommendations:

1. The anticipation of Higher Primary language and cognitive needs in the Lower Primary phase. English-across-the-curriculum (crucial as preparation for EMI) is needed in the Junior Primary syllabus with prescribed targets. (See Note 6, p. 230, for examples of already available EAC materials.)
2. As far as is possible, establish a base of essential content subject concepts in the mother-tongue. This should take place both in the Junior Primary phase and in parallel with EMI. Thus facilitating a principled transfer from the mother-tongue to EMI.
3. Inform education authorities, publishers and textbook writers, in precise terms, as to why and how textbooks fail.
4. Educate textbook writers and publishers in strategies of constructing comprehensible texts for EFL/ESL readers.
5. Educate Higher Primary training college lecturers in methods of imparting:
 - a) learner-centred teaching methods;
 - b) English across-the-curriculum methods;
 - c) knowledge of content subjects;
 - d) reading, writing and visual literacy skills appropriate for content subjects.

Notes:

- 1) Linguistically, Std 3 pupils are totally unprepared to cope with geography with its special features of register, expository style, graphical illustration and task-types. This is confirmed by Macdonald (1990 : 4) in her HSRC, **English Language Skills Evaluation** where she concludes that the "current generation of junior primary children are not competent in terms of the demands of the medium transfer in Std 3, at least in its present form".
- 2) According to Macdonald (1990: 173 in the Threshold Project Consolidated Main Report), this is because the majority of ESL courses "do not take the learner through **from** content embedded cognitively undemanding tasks **to** content reduced cognitively demanding tasks" required of them in the content subjects. She explains (171):

In context embedded communication the participants can actively negotiate meaning, and the language is supported by a wide range of paralinguistic or situational cues. On the other hand, context-reduced communication relies primarily on linguistic cues to meaning, and may involve suspending knowledge of the "real" world in order to manipulate the logic of the message.
- 3) One of the reasons identified for the trauma suffered by children in Std 3 was that not only was there the change of medium to contend with, but the children also "suddenly have a much more complex curriculum to contend with", Macdonald (1990:153 Threshold Project Consolidated Main Report).
- 4) Not only does the sale of incomprehensible textbooks on a national scale represent a tremendous cost to Education Departments, but also (if these books are not used, as this study suggests) a tremendous drain on an already strained economy.
- 5) Illustrating the lack of co-operation that exists between the "bodies" involved in the textbook production cycle, Macdonald (1990:155 Threshold Project Consolidated Main Report) points out that:

The content subject syllabi as they currently exist all have preambles about process and activity orientations, yet there is little in the content sections, and in their realizations in textbooks, to suggest that writers have thought through the consequences of a radically different way of learning. What emerge are essentially conservative fact-oriented texts.

6) Macdonald (as above: 107) recommends that:

... serious consideration should be given to a comprehensive evaluation of the **Bridge to English** series, which contains in itself the only real evidence of CALLA-type work (Cognitive Academic Language Learning) in the country ... Such courses are going to have to be written ... if education departments are serious about addressing the genuine needs of the young child (see also Kroes, HSRC, 1987).

The following sample EAC components of the **Bridge to English** courses Macdonald refers to, reveal something of the thoroughly researched, comprehensive attempt to prepare children linguistically and cognitively for EMI:

1) Some topics from Std 1 and 2 English lessons:

- Seasons; day and night;
- Facility with numbers (the system of numbers);
- Time, timetables; the calendar;
- Vertical and horizontal; maps and finding the way (direction);
- Measurement of length;
- Measurement of distance;
- Maps: longitude and latitude;
- Mathematics - fractions;
- Geometric shapes.

2) Games, eg:

- Moneymaker (a board game played with job cards, money and a dice);
- Number Jigsaw (focusing on the system of tens and units in preparation for decimals);

- Number maker (a mental arithmetic game in which children learn to use a simple calculator);
- Africa Jigsaw (the countries of Africa, directions, shape and relative sizes to scale).

3) Readers, eg:

The Fact Finder (1988), a reader that introduces Std 2 pupils to simple expository discourse in preparation for Std 3 by:

- giving children early training in finding information within a book;
- establishing some important basic ideas (concepts) in geography and the English words which name them;
- exposing children to the English used for describing and explaining the world;
- helping children to understand and answer questions, and complete writing tasks which appear in textbooks and the syllabus.

What is in the picture? (1988), a teacher's workbook that attempts to help teachers to enhance pupils' "visual literacy", with particular emphasis on:

- the influence of distance on size;
- perspective;
- two and three dimensional views.

It attempts to help children "learn to see everything the artist is trying to show them in a picture", because "they need the information which pictures can give them in order to answer questions.... or understand something which must be learnt" (1).

BIBLIOGRAPHY

- Abrahams, J.C. (1984) **Health Education in Action Standard 3.** (New syllabus) Cape Town: Juta & Co. Ltd.
- Adams, M.J. (1980) Failures to Comprehend and Levels of Processing in Reading. In: **Theoretical Issues in Reading Comprehension.** Spiro, Bruce and Brewer (Eds), LEA.
- Adams, M.J. & Collins, A. (1979) A Schema-Theoretic View of Reading. In: **New Directions in Discourse Processing.** Freedle, R.D (Ed.), Ablex, N.J.
- Adams-Smith, D.E. (1981) Levels of Questioning: Teaching Creative Thinking through ESP. **English Teaching Forum.** Jan pp.15-17, 21.
- Adegbija, E. (1987) Speech Act Functions: Dimensions of Communication and Meaning in the English Language in Nigeria. In: **I.T.L. Review of Applied Linguistics.** Vol. 76 p.43-62 (Cited in van Rooyen 1990).
- Alderson, J.C. (1984) Reading in a foreign language: a reading problem or a language problem? In: **Reading in a Foreign Language.** Alderson, J.C. and Urquhart, A.H. (Eds) New York: Longman.
- Alderson, J.C. (1986) **The nature of evaluation.** Paper presented at The National Seminar on ESP, Embu, SP Brazil. (Cited in Gale 1990)
- Alderson, J.C. & Urquhart, A.H. (1984) **Reading in a Foreign Language.** New York: Longman.
- Alderson, J.C. & Urquhart (1988) This test is unfair: I'm not an economist. In: **Interactive Approaches to Second Language Reading.** Carrell, P.L., Devine, J., Eskey, D.E. (Eds) Cambridge University Press.
- Anderson, R.C. (1977) The notion of schemata and the educational enterprise: General discussion of the conference. In: **Schooling and the acquisition of knowledge.** R.C. Anderson, R.J. Spiro, & W.E. Montague (Eds), Hillsdale, N.J., Laurence Erlbaum Associates.

- Anderson, R.C., Reynolds, R.E., Schallert, D.L. and Goetz, E.T. (1977) Frameworks for comprehending discourse. American Educational Research Journal Vol 14. No.4 pp.367-381. (Cited in Carrell and Eisterhold 1988)
- Armbruster, B.B., Anderson, T.H., Ostertag, J. (1987) Does Text Structure/Summarization instruction facilitate learning from expository text? Reading Research Quarterly. Vol.22, No.3 p.331-346.
- Armbruster, B.B. & Anderson, (1988) On Selecting "Considerate" Content Area Textbooks. RASE, January/February Vol.9, No.1 p.47-52.
- Artley, A.S. (1980) Reading skills or competencies. Language Arts. Vol.57. pp.546-549.
- Ausubel, D.P. & Robinson, F.G. (1969) School learning; an introduction to educational psychology. New York, Holt, Pineland and Winston.
- Barnes, D. & Shemilt, D. (1974) Transmission and Interpretation. In Functions of language. Wade, B. (ed) Educational Review. Vol.26, No.3 June.
- Barret, T.C. (1968) What is reading? Innovation and Change in Reading Instruction. In: T. Clymer (Ed) 67th year Book of the National Society for Study of Education, University of Chicago Press. (Cited in Anderson and Urquhart 1984)
- Baumann, J.M. (1983) Children's Ability to Comprehend Main Ideas in Content Textbooks. In: Reading World. May 1983. p.323-331.
- Baumann, J.M. (1984) The effectiveness of a Direct Instruction Paradigm for Teaching Main Idea Comprehension. Reading Research Quarterly. Vol.20. p.93-115.
- Baumann, J.M. (1986) Effect of Rewritten Content Textbook Passages on Middle Grade Students Comprehension of Main Ideas: Making the Inconsiderable Considerate, Journal of Reading Behaviour. vol. xviii, No 1.

- Beeby (1966) Stages in the Growth of a Primary school system, **The Quality of Education in Developing Countries**. Harvard University Press.
- Benjamin, C. (1989) Perception of line drawings among black Primary School children in relation to the Bridge to English Reader. Unpublished Paper, Rhodes University.
- Bennetts, T. (1985) Geography from 5 to 16: A view from the Inspectorate. In: **Geography**. Vol. 70, pp.299-314.
- Berman, R.A. (1984) Syntactic components of the FL reading process. In: **Reading in a Foreign Language**. Alderson, C.J. & Urquhart, A.H, (Eds) Longman.
- Bernstein, B. (1971) On the classification and forming of educational knowledge. In: **Knowledge and Control**. Young, F.F.D. (Ed) Collier-Macmillan.
- Blackquerie, A. (1987) **Junior Primary English Materials Evaluation Project for the Department of Education and Training**. Audio visual component, HSRC, Pretoria.
- Bloom, (1977) **Taxonomy of Educational Objectives Handbook 1: Cognitive Domain** (Comprehension application, analysis, synthesis & evaluation London: Longman pp.2-4 - 207.
- Bobrow, D.G. & Norman, D.A. (1975) Some principles of memory schemata. In: **Presentation and understanding: Studies in cognitive science**. D.G. Bobrow and A. M. Collins (Eds), New York: Academic Press. (Cited in Adams and Collins (1979))
- Borg, W.R. (1963) **Educational Research: An introduction** Longman, London (Cited in Cohen and Manion 1985)

- Botel, M. & Granowsky, A. (1972) A syntactic complexity formula. In: **Assessment Problems in Reading**, W.H. Macginite (Ed) Newark Delaware, International Reading Association. (Cited in Williams 1985)
- Bransford, J.D. (1979) **Human Cognition: Learning, Understanding and Remembering**. Belmont: Wadsworth 86-165
- Bransford, J.D., Stein, B.S. & Shelton, T. (1984) Learning from the perspective of the comprehender. In: **Reading in a Foreign Language**. Alderson, J.C. and Urquhart, A.H. (Eds) New York: Longman.
- Brown, J.D. (1988) **Understanding Research in Second Language Learning**. Cambridge University Press.
- Burroughs, L. (1987) HSRC Evaluation Workshop on Std 3 textbooks Document 8a (Unpublished).
- Campbell, N. (1987) Adapted Literary Texts and the EFL Reading Programme. **ELT Journal**. April. Vol.41, No.2. p.132-135.
- Carpenter, P.A. & Just, M.A. (1977) Integrative Processes in Comprehension; In: **Schooling and the Acquisition of Knowledge**. Aderson, Spiro and Montague (Eds) LEA.
- Carrell, P.L. (1981) Culture-specific schemata in L2 comprehension. In: **Selected papers from the ninth Illinois TESOL/BE annual convention, the first mid-west TESOL conference**, R. Orem and J. Haskell (Eds). 123-132. Chicago: Illinois TESOL/BE. (Cited in Carrell and Eisterhold 1988)
- Carrell, P.L. (1983) Some issues in studying the role of schemata, or background knowledge, in second language comprehension. **Reading in a Foreign Language**. Vol.1 No.2. p.81-92.

- Carrell, P.L. (1984) The Effects of Rhetorical Organization on ESL Readers. **TESOL Quarterly**. Vol.18, No.3. pp.441-469.
- Carrell, P.L. (1984) Schema Theory and ESL Reading: Classroom Implications and Applications, in: **The Modern Language Journal**. 68, iv.
- Carrell, P.L. (1985) Facilitating ESL Reading by Teaching Text Structure, **TESOL Quarterly**. Vol.19. No.4. pp.727-747.
- Carrell, P.L. (1987) Content and Formal Schemata in ESL Reading. In: **TESOL Quarterly**, Vol.21, No.3, p.461-481.
- Carrell, P.L. (1988) Some causes of text-boundedness and schema interference in ESL reading. In: **Interactive Approaches to Second Language Reading**. Carrell, P., Devine, J. and Eskey, D. (Eds) Cambridge University Press. pp.101-113.
- Carrell, P.L. (1988) Interactive text processing: implications for ESL/second language reading classrooms. In: **Interactive Approaches to Second Language Reading**. Carrell, P., Devine, J and Eskey, D.(Eds) Cambridge University Press.
- Carrell, P.L., Devine, J. & Eskey, D.E. (Eds) (1988) **Intro: Interactive Approaches to Second Language Reading**. Cambridge University Press.
- Carrell, P.L. & Eisterhold, (1988) Schema theory and ESL reading pedagogy. In: **Interactive Approaches to Second Language Reading**. Carrell, P.L., Devine, J., and Eskey, D.E. (Eds) Cambridge University Press.
- Carstens, P.D. & du Plessis, A. (1987) **Education and Manpower Development**. No.8 RIEP, UOFS.

- Chall, J.S. (1979) Readability: In Search of Improvement. **Publishers Weekly**. 19 October. p.40-41 (Cited in van Rooyen 1990).
- Cicaurel, A.V. (1957) **Method and Measurement in Sociology** The Free Press, New York.
- Clark, H & Clark, E. (1977) **The Psychology of Language**. New York: Harcourt, Brace, Jovanovich.
- Clarke, M.A. (1979) Reading in Spanish and English: Evidence from adult ESL students. **Language Learning**. Vol.29. No.1 pp.121-150.
- Clarke, M.A. (1980) The Short Circuit Hypothesis of ESL Reading - or When Language Competence Interferes with Reading Performance. In **Modern Language Journal**. Vol.64. No.2.
- Clarke, M.A. & Silberstein, S. (1977) Toward a realization of psycholinguistic principles in the ESL reading class. **Language Learning**. Vol.27 No.1 pp.35-154.
- Coady, J. (1979) A Psycholinguistic Model of the ESL Reader In: **Reading in a Second Language**. Mackay, R., Barkman, B., and Jordan, R.R.(Eds) Newbury House, In, Massachusetts.
- Colle, R. (1979/81) Pictorial conventions in development communications in developing countries. **Information Design Journal**. Vol.2 (Cited in Benjamin 1989).
- Conn, S. (1988) Textbooks: Defining the New Criteria. **Media and Methods**. Vol.24, No.4. p.30-31, 64.
- Cooper, M. (1984) Linguistic competence of practised and unpractised non-native readers of English In: **Reading in a Foreign Language**. J.C. Alderson and A.H. Urquhart. (Eds) New York, Longman.

- Coulthard, M. (1977) **An Introduction to Discourse Analysis**. Linguistics and Language Study Series. Candlin, C.N. (Ed) London, Longman.
- Cummins, J. (1979) Linguistic Interdependence and the Educational development of bilingual children. In: **Review of Educational Research**. Vol.49. p222-251.
- Davey, B. (1987) Relations between Word Knowledge and Comprehension: Generalization across Tasks and Readers. **Journal of Educational Research**. Vol.80, No.3. p.179-183.
- Davey, B & Kapinus, B.A. (1985) Prior Knowledge and Recall of Unfamiliar Information: Reader and Text Factors. In: **Journal of Educational Research**. Vol.78 No.3. pp.147-151.
- Davies, A & Widdowson, H. (1974) The Teaching of Reading and Writing In: **Techniques in Applied Linguistics**. J.P.B. Allen and S.P. Corder (Eds) Vol.3 Oxford University Press. (Cited in Anderson and Urquhart 1984)
- Davies, F & Green, T (1984) Analysing and using Text-Books in Geography. **Reading for Learning in the Sciences**. Oliver and Boyd.
- Davies, F. (1986) The Function of the Textbook in Science and the Humanities. In: **The Language of School Subjects**. Gillham, B (Ed) London: Heinemann Educational Books.
- Davies, F. (1986) Structure and Language of Textbooks Across the Curriculum. In: **Language in Learning**. Tickoo, M., SEAMEO, RELC.
- Davis, F. B. (1944) Fundamental factors in reading comprehension. **Psychometrika**. Vol.9 No.3. pp.185-197 (Cited in Pillay 1989).
- Davis, F.B. (1972) Psychometric research on comprehension in reading. **Reading Research Quarterly**. Vol.7. No.1 pp.628-678.

- Davison, A., Georgia, M. Green. (Eds) (1988) **Linguistic complexity and text comprehension: readability issues reconsidered.** Hillsdale, N.J.: L. Earlbaum Associates.
- Dawe, L. (1983) Bilingualism and Mathematical Reasoning in English as a Second Language. In: **Educational Studies in Mathematics.** No.14 p.325-353.
- De Beaugrande, R. (1980) **Text, Discourse and Process.** Longman.
- De Beaugrande, R. & Dressler, W. (1981) **Introduction to Text Linguistics** Longman.
- De Beaugrande, R. Le Ny, J.F. & Kintsch, W (Eds) (1982) General Constraints on Process Models of Language Comprehension. In: **Language and Comprehension.** North-Holland Publishing Company.
- Dedicott, W. (1987) The Value of Pictures in Encouraging Children's Thinking Strategies In: **Reading.** Vol.21 No.1 p.53-61.
- Deregowski, J.B. (1980) **Illustrations, Patterns: A cross cultural perspective.** Academic Press (Cited in Benjamin 1989).
- Devine, J. (1988) General Language Competence and Adult Second Language Reading. In: **Research in Reading in English as a Second Language.** Devine, J. Carrell, P.L. and Eskey, D.E (Eds) Cambridge University Press.
- Devine, J. (1988) The relationship between general language competence and second language reading proficiency: implications for teaching. In: **Interactive Approaches to Second Language Reading.** Carrell, P., Devine, J., and Eskey, D.(Eds), Cambridge University Press.

- Dillon, George L. (1981) **Constructing texts: elements of a theory of composition and style.** Bloomington: Indiana University Press.
- Donaldson, M.C. (1963) **A study of children's thinking.** Tavistock Publications, London.
- Donaldson, M.C. (1978) **Children's Minds.** Glasgow: Fontana.
- Downing, J. and Leong, C.K. (1982) **Psychology of Reading.** New York Macmillan.
- Drum, P.A. (1984) Children's Understanding of Passages. In: **Promoting Reading Comprehension**, J Flood (Ed) International Reading Association, Newark Delaware.
- Duncan, H.F., Gourlay, N. & Hudson, W.M. (1973) **A study of Pictorial perception among Bantu and White Primary school children in South Africa.** Witwatersrand University Press, Johannesburg, (Cited in Benjamin 1989).
- Du Plessis, A., Du Pisani, T. & Plekker, S.J. (1988) **Education and Manpower Development** No.9 RIEP, UOFS pp.6, 8, 17+18.
- Du Plessis, A., Du Pisani, T. & Plekker, S. (1989) **Education and Manpower Development** Vol 10, (RIEP), UOFS.
- Durojaiye, M. (1974) The Language of Textbooks. **Education in Eastern Africa.** Vol.14, No.2 p.207-213. (Cited in van Rooyen 1990).
- Earle, J. (1984) **Geography in Action Standard 3.** Cape Town: Juta & Co, Ltd.
- Educational Testing Service (1987) **Test of English as a Foreign Language.** Princeton, N.J.: Educational Testing Service.
- Elliot, D., Nagel, K & Woodward. A. (1986) Scientific Illiteracy in Elementary School Science Textbook Programmes. **Journal of Curriculum Studies.** Vol.9, No.1 p.77-76.

- Ellis, R. (1984) Report on a visit to the Institute for the study of English in Africa (The Molteno Project). Ealing College of Higher Education.
- Ellis, R. (1987) Using the English medium in African schools. In: **Bridging the Gap**. D. Young (Ed) Cape Town: Maskew Miller Longman pp.82-99.
- Entwistle, N.(Ed.) (1985) **New Directions in Educational Psychology 1. Learning and Teaching** London: The Falmer Press.
- Eskey, D.E. (1970) A new technique for the teaching of reading to advanced students. **TESOL Quarterly**. Vol.4, No.4 pp.315-321.
- Eskey, D.E. (1971) Advanced reading: The structural problem. **English Teaching Forum** Vol.9, No.5 pp.15-19.
- Eskey, D.E. (1973) A model program for teaching advanced reading to students of English as a second language. **Language Learning** Vol.23. No.2 pp.169-184.
- Eskey, D.E. (1988) Holding in the bottom: an interactive approach to the language of second language readers. In: **Interactive approaches to Second Language Reading** Carrell, P., Devine, J., and Eskey, D. (Eds) Cambridge University Press.
- Evans, J.D. (No date) Vocabulary Problems in Teaching Science. **School Science Review**, Vol.55, No.192. p.585-590 (Cited in van Rooyen 1990).
- Feathers, K. (1981) Text Unity: A semantic perspective on mapping cohesion and coherence. Unpublished paper, Indiana University. (Cited in Carrell 1982).
- Fitzgerald, J & Spiegel, D.L (1983) Enhancing children's Reading Comprehension through instruction in Narrative Structure. **Journal of Reading Behaviour**. Vol.15 p.1-17.

- Flesch, R.F. (1948) A new readability yardstick in **Journal of Applied Psychology**. Vol.32, pp221-223.
- Flood, J. (Ed) (1984) **Promoting Reading Comprehension** International Reading Association, Newark Delaware.
- Flood, J. & Lapp, D. (1988) Conceptual Mapping Strategies for understanding. Texts. In: **The Reading Teacher**, April, Vol.41, No.8 p.780-783.
- Florez, V. & Hadaway, N. (1987) Second Language Learners: Their Special Needs in Content Area Reading. In: **Reading Horizons**. Vol.27 No.4 p.269-275.
- Fourie, D.I., Kaske, C.E.M.E. and Msi, Z.I.M (1982) **General Science Can be Fun**. Via Afrika Goodwood, S.A.
- Fox, H.E., Horn, L., Opie, F.W.J, Pienaar, H.N., Voster, P.W. and Walters, S.W. (1982) **Understanding Science 3**. N'dabeni Maskew Miller.
- Fries, C.C. (1945) **Teaching and learning English as a foreign language**. Ann Arbor: University of Michigan Press. (Cited in Carrell 1988)
- Fries, C.C. (1962) **Linguistics and reading**. New York: Holt, Rinehart and Winston. (Cited in Silberstein 1987)
- Fry, E.A. (1968) A readability formula that saves time. In: **Journal of Reading**. Vol.2 No.7. pp.513-516.
- Fry, E.A. (1979) A Reappraisal of Formula Writing. **Publishers Weekly**. 19 October, p.41-42 (Cited in van Rooyen 1989)
- Fuglesang, A. (1978) **Applied Communication in Developing Countries: Ideas and Observations**. The Dag Hammarskjold Foundation, Sweden, (In Benjamin 1989).

- Gale, F. (1989) A preliminary examination of teacher development in farm schools through an illuminative evaluation of a teacher development course implemented by the 1820 Foundation Farm School Project. (Unpublished MA dissertation, Rhodes University)
- Gillham, B. (Ed) (1986) **The Language of school subjects** London: Heinemann Educational Books.
- Gilliland, J. (1972) **Readability**. University Press for UKRA. (Cited in Nuttall and Young 1990)
- Giordano, G. Determining Readability. **The Clearinghouse**. 1987. Vol.61 p.32-33.
- Goodman, K.S. (1970) Reading: a psycholinguistic guessing game. In: **Theoretical Models and Processes of Reading**. Singer, H., Ruddell, R.B. (Eds) Network Delaware International Reading Association.
- Goodman, K.S. (1971) Psycholinguistic universals in the reading process. In: **The psychology of second language learning**. P. Pimsleur and T. Quinn (Eds), pp135-142. Cambridge: Cambridge University Press.
- Goodman, K.S. (1974) Miscue Analysis : Theory and Reality in Reading. Paper presented at 5th World IRA Congress. In: **Proceedings, New Horizons in Reading**. Merrit, J. (Ed), International Reading Association, Vol 19 (Cited in Anderson and Urquhart 1985).
- Goodman, K.S. (1976) Approaches to Reading. Reading: A Psycholinguistic Guessing Game. **Journal of the Reading Specialist**. Vol.6, pp.126-135.
- Grabe, W. (1986) The transition from theory to practice in teaching reading. In: **Teaching second language reading for academic purposes**. Dubin, F., Eskey, D.E., and Grobe, W. (Eds) Reading, Mass: Addison Wesley.

- Grabe, W. (1988) Reassessing the term "interactive". In: **Interactive Approaches to Second Language Reading**. Carrell, P.L., Devine, J & Eskey, D.E. (Eds) Cambridge University Press.
- Graves, F.E. (1981) **History in Action** Cape Town: Juta & Co. Ltd.
- Graves, N.J. (Ed) (1975) **New Movements in the Study and Teaching of Geography**. Temple Smith. London.
- Graves, N.J. (1975) **Geography in Education**. Heinemann.
- Grellet, F. (1982) **Developing Reading skills**. Cambridge University Press
- Grossman, R. (1986) **A Finger on Mathematics** R.L. Esson & Co Ltd. SA.
- Gunning, J. (1952) **The technique of clear writing**. New York: McGraw-Hill (Cited in Nuttall and Young 1990).
- Guthrie, J.T. (1973) Models of reading and reading disability. **Journal of Educational Psychology**. Vol.65 pp.9-18 .
- Hague, S.A. (1987) Vocabulary Instruction: What L2 Can Learn from L1. **Foreign Language Annals**. Vol.20, No.3 p.217-225. (Cited in van Rooyen 1990)
- Hamilton, D. (1976) **Curriculum evaluation**. London. Open Books. (Cited in Gale (1989)
- Hamlyn, D.R., Rogan, E. and Rogan, J.M. (1982) **Science - an Investigation: Std 3**. Johannesburg: McGraw Hill Book Company.
- Halliday, M.A. & Hasan, R. (1976) **Cohesion in English** London, Longman.

- Haring, M.J & M.A. Fry (1979) Effect of pictures on children's comprehension of written text. **Educational Communication and Technology Journal**, vol. 27: 185-190.
- Harlen, W. (1985) **Teaching and Learning Primary Science**. London: Harper and Row.
- Harris, A.J & Sipay, E.R. (1979) **How to Teach Reading**. Longman. New York.
- Hatch, E. & Farhady, H. (1982) **Research Design and Statistics**. (for applied linguistics), Newbury House Publishers, Cambridge.
- Hattingh, L.L., Michell, S.D., Chambers, D.J., & Beck, J.D. (1981) **Our New World 3**. Maskew Miller.
- Hawes, H. (1979) **Curriculum and Reality in African Primary Schools**. Longman
- Hudson, W. (1982) Cultural problems in Pictorial Perception. **South African Journal of Science**. Vol.58. (Cited in Benjamin 1989)
- Hudson, T. (1988) The effects of induced schemata on the "short circuit" in L2 reading: non-decoding factors in L2 reading performance. In: **Interactive Approaches to Second Language Reading**. Carrell, P.L., Devine, J., and Eskey, D.E. (Eds) Cambridge University Press.
- Hurry, L.B. (1980) **Geography Can Be Fun Standard 3**. Pretoria: Via Afrika Ltd.
- Jarvis, J. (1987) Meeting the Reading Needs of Trainee Primary School Teachers of English. In: **Reading in a Foreign Language**. vol 3, No 2.
- Jeffs, R.B. (1980) Technical terms. In **Language Skills through the Secondary Curriculum**. Jeffs, R.B. and Gatherer, W.A. (Eds) Holmes MacDawgall (Cited in Pillay 1989)

- Johnson, P. (1981) Effects on Reading Comprehension of Language Complexity and Cultural Background of Text. **TESOL Quarterly**. Vol.15/2. pp.169-181
- Johnson, P. (1982) Effects on Reading Comprehension of Building Background Knowledge. **TESOL Quarterly**. Vol.16, No.4 pp.503-516.
- Joseph, K. (1985) Geography in the School Curriculum. In: **Geography**. Vol.70, pp.290-297.
- Kant, I. (1963) **Critique of pure reason**. (1st ed 1781, N. Kemp Smith, translator) London: Macmillan (Cited in Carrell and Eisterhold 1988).
- Kerlinger, F.N. (1970) **Foundations of Behavioural Research** Holt, Reinhart and Winston, NY. (Cited in Cohen and Manion 1985).
- Kilbridge, J. & Yarczawer, M. (1980) Recognition and Imitation of facial expressions. **Journal of Cross Cultural Psychology**. Vol.11. No.3, p.281-296, Western Washington University. (Cited in Benjamin 1989)
- Kinney, A. M. (1985) A language experience approach to teaching expository text structure. In: **The Reading Teacher**. Vol.38, No.9, pp.854-856.
- Kintsch, W. & Van Dyk, T.A. (1978) Toward a Model for Text Comprehension and Production. In: **Psychological Review**. Vol.85, pp.363-394.
- Kintsch, W & Yarborough J.C. Role of Rhetorical Structure in Text Comprehension. **Journal of Educational Psychology**. Vol.74, No.6 p.828-834.
- Kitwood, T.M. (1977) Values in adolescent life: towards a critical description. Unpublished PhD dissertation (School of Research in Education, University of Bradford.) (Cited in Cohen and Manion 1985)

- Klare, G.R. (1963) **The Measurement of Readability.** Arnes, Iowa: Iowa State University Press.
- Kolars, P.A. (1969) Reading is only incidentally visual In: **Psycholinguistics and the teaching of reading.** K.S. Goodman and J.T. Fleming (Eds), Newark Delaware, International Reading Association. (Cited in Silberstein 1987)
- Kroes, H. (1987) **Comparative evaluation of lower primary English courses in Black education.** Phase 1: Theoretical evaluation HSRC, Pretoria.
- Lado, R. (1964) **Language teaching: a scientific approach.** New York: McGraw-Hill pp.131.142.
- Lam, A. (1985) Vocabulary and other Considerations In: **Reading Comprehension: Implication Across the Curriculum.** SEAMEO Regional Language Centre. Twentieth Regional Seminar, Singapore.
- Lambrechts, H.A., van Schoor, J.A.M., Bester, C.L. & Potgieter, D. **History 3, Nasau, Ltd.**
- Langhan, D.P. (1988) Teaching and Learning in the Content Subjects in Std 3. In: **Styles of Teaching and Styles of Learning.** A. Weideman (Ed) Proceedings of the 6th SAALA Conference (UOFS).
- Langhan, D.P. (1989) The Language of Textbooks - A major cause of the failure to learn through the medium of English? **Journal for Language Teaching, SAALT.** Vol.23 No.2 July.
- Lanham, L. W. (1986) Another Dimension of Readiness to Learn in the Second Language. In: **The Role of Language in Black Education** HSRC Research Programme No.6 Pretoria HSRC.

- Lanham, L.W. (1987) Learning to Become a Good Reader - the Basic Skills of Reading. (Unpublished notes). Rhodes University.
- Lanham, L.W. (1987) Problem areas for the black child reading English. (Unpublished notes) Rhodes University
- Lanham, L.W. (1987) The effect of incoherent discourse of primary textbooks on learning. (Unpublished paper presented at SAALA Conference)
- Lanham, L.W. (1990) The Readability of Narrative Text for the Primary School ESL Reader. In: **Searching for Relevance**, Contextual Issues in Applied Linguistics in Southern Africa Chick, K. (Ed) SAALA, Durban.
- Lanham, L.W. (1990) **What's in the Picture?** Exercises which help children to "read" pictures, ISEA, Rhodes, Molteno Project.
- Leech, G. Deuchar, M & and Hoogenraad, R. (1982) **English Grammar for Today** Macmillan Press, Hong Kong.
- Lewis, G.E. (1982) Text Structure, Text Processing and Testing Reading. In: **MALS Journal** Vol.7 pp.43-69.
- Lunnan (1975) **The Understanding of Certain Geographical Concepts by Primary School Children.** M.Ed. Brimingham in: Graven N. **Geography in Education** Heinemann.
- Lunzer, E & Gardner, K (Eds) (1979) **The Effective Use of Reading.** Schools Council Production, London: Heinemann. (Cited in Alderson and Urquhart 1984).
- Lunzer, E; Waite, M & Dolan, T. (1979) Comprehension and Comprehension tests. In: Lunzer, E. & Gardner, K. (Eds) **The Effective Use of Reading.** Schools Council Production, London, Heinemann.

- Macdonald, C.A. (1986) Establishing Linguistic and Conceptual Threshold Levels for Black Primary School children: I HSRC Threshold Project Paper. (Unpublished paper)
- Macdonald, C.A (1987) Teaching primary science in a second language: Two teaching styles and their cognitive concomitants, from HSRC 'Threshold Project'. (Unpublished paper presented at SAALA Conference).
- Macdonald, C.A. (no date) Establishing Linguistic and Conceptual Threshold Levels for Black Primary School Children: III Cognitive Developmental Theories and Research in Education HSRC Report.(Unpublished paper)
- Macdonald, C.A. (1987) A developmental model for change in Black education: the transition to English in Std 3. HSRC (Unpublished paper.)
- Macdonald, C.A. (1987) Cultural Views of learning and their influence of Teaching Styles. HSRC. (Unpublished paper)
- Macdonald, C.A. (1989) Developing Primary Science Materials to Facilitate Language and Conceptual Development. In: **Southern African Studies in Applied Linguistics** van de Walt, J.L. (Ed) SAALA, Potchefstroom.
- Macdonald, M.A. (1980) SEP in Ciskei: Materials, Training, Context and Outcomes SEP, Wits, Jhbg. (Unpublished paper)
- Mackay, R. Barkman, B. & Jordan, R.R. (Eds) (1979) **Reading in a Second Language** Newbury House.
- Mandler J.M. & Johnson N.S. (1977) "Remembrance of Things Passed: Story Structure and Recall" In: **Cognitive Psychology**, Vol.9 p.111-151 (Cited in Kinney 1985).
- Mangubhai, F. (1986) The Literate Bias of Classrooms: Helping the ESL Learner. **TESL CANADA Journal**, Special issue November.

- Marshall, N. (1984) Discourse Analysis as a Guide for Informal Assessment of Comprehension. In: **Promoting Reading Comprehension**. Flood, J. (Ed) International Reading Association, Newark, Delaware.
- Metrowich, T.P, Hitchcock I, Basson N.J.S, Redelinghuys, R.B (1981) **General Science in Action 3**. (new syllabus) Juta & Co Ltd .
- Meyer, B.J.F. (1975) **The Organization of prose and its effects on memory**. Amsterdam: North Holland Publishing Co.
- Meyer, B.J.F. (1977) The structure of prose: effects on learning and memory and implications for educational practice' In: **Schooling and the Acquisition of Knowledge**. R.C. Anderson, R. Spiro and W.E. Montague, (Eds) pp.179-200 Hillsdale, N.J. Lawrence Earlbaum Associates.
- Meyer, B.J.F. (1981) Basic research on phrase comprehension: a critical review. In: **Comprehension and the competent reader: inter-speciality perspectives**. D.F. Fisher and C.W Peters (Eds) 8-35 New York: Praeger.
- Meyer, B.J.F. (1984) Organizational Aspects of Text: Effects on Reading Comprehension and Applications for the Classroom. In: **Promoting Reading Comprehension**. Flood, J. (Ed) pp.113-138.
- Meyer, B.J.F., Brandt, D.M. & Bluth, G.J. (1980) Use of top-level structure in text: key for reading comprehension of ninth-grade students. **Reading Research Quarterly** Vol.16 No.1 p.72-103.
- Meyer B.J.F., Haring M.J., Brandt D.M. and Walker C.H. (1980) Comprehension of Stories and Expository Text, **Poetics** 9 203-211.
- Meyer, D. (1989) Making Textbooks Readable: Some Linguistic Guidelines and their Pedagogical Implications for English Second Language Readers. (Unpublished paper) Rhodes University, Education Department.

- Mocke, H.A. & Wallis, H.C. (1988) **History Can Be Fun 3**. Pretoria: Via Africa Ltd.
- Molteno Project course materials: (1987) **Bridge Plus One** Teacher's Manual. De Jager Haum.
- (1989) **The World we Live In - A Fact Finder, Teacher's Manual**, A reading and writing programme introducing geography. Rhodes University.
- (1989) **The World we Live In - A Fact Finder, Pupil's Book** A reading and writing programme introducing geography. Rhodes University.
- (1990) **Bridge Plus Two, Teacher's Manuals** (Parts One and Two), Rhodes University.
- Moore D.W., Readence J.E & Pickelman, R.J. (1983) An historical exploration of content area reading instruction In: **Reading Research, Quarterly** Vol.xviii No.4 p.419-438.
- Moore, P.J. & Skinner, M.J. (1985) The Effects of Illustrations on Children's Comprehension of abstract and Concrete Passages. In: **Journal of Research in Reading**. Vol.8, No.1 p.45-56.
- Morgan J.L. & Sellner M.B. (1980) Discourse and linguistic theory. In: **Theoretical issues in reading comprehension**. Spiro, R.J., Bertram, B.C. and Brewer, W.F. (Eds) Hillside, N.J.: Lawrence Erlbaum Associates.
- Munby, J. (1978) **Communicative Sullabus Design**. Cambridge University Press.
- Murray, S. (1985) In Practice... Reading and Understanding: The Influence of Background Knowledge on Reading Comprehension. In: (Source unknown) August/September pp.4-10.

- McGee, L.M. (1982) Awareness of text structure: Effects on children's recall of expository text. In: **Reading Research Quarterly** Vol.xvii, No.4, pp.581-590.
- McLaughlin, B, Passman, J & Mcleod, B. (1983) Second Language Learning: An Information Processing Perspective. In: **Language Learning** Vol.33 No.2, p.135-158.
- McNeil, J.D. (1974) False prerequisites in the teaching of reading. **Journal of Reading Behaviour**. pp.421-427.
- Newby, M. (1987) **The Structure of English**. Cambridge University Press.
- Nuttall, C. (1982) **Teaching Reading Skills in a Foreign Language**. Heinemann Educational Books. London.
- Ohlhausen M.M. & Roller C.M. (1988) The Operation of Text Structure and Content Schemata in Isolation and in Interaction. **Reading Research Quarterly**, Winter. Vol.23, No.1, p.70-88.
- Olson, G.M. & Mack, R.L. (1984) Thinking-Out-Loud as a Method for Studying Real-Time Comprehension Processes. In: **New Methods in Reading Comprehension Research**, Kieras, D.E. and Just, M.A., (Eds) LEA, London.
- Parlett, M. & Hamilton, D. (1975) Evaluation as illumination. **Curriculum evaluation today: Trends and implications**. pp.84-101 (Cited in Gale 1989)
- Perera, K. (1986) Some linguistic difficulties in school textbooks. In: **The Language of School Subjects**, Gillham, B. (Ed) Heinemann Educational Books.
- Pierce, M.E. (1973) Sentence-level expectancy as an aid to advanced reading. **TESOL Quarterly** Vol.7, No.3, pp.269-277.

- Pillay, L.F. (1988) **Some Reading Problems Encountered By Ciskeian Second Language English Readers In Subject Content Areas With Special Reference to Geography at the Std Six Level.** M.Ed Thesis, Rhodes University
- Preston, R.C. & Herman, W.L. (1974) **Teaching social studies in the elementary school 4th ed.** New York: Holt Rumlhart and Winston. (Cited in Harris and Sipay 1979).
- Quirk, R., Greenbaum, S., Leech, G and Svartvik, J. (1972) **A Grammar of Contemporary English** Longman, London.
- Raphael T.E., Kirschner B.W. & Englert, C.S (1988) Expository Writing Program: Making Connections Between Reading and Writing. **The Reading Teacher**, April, Vol.41, No.8, p.790-795.
- Reid, D.K., & Hresko, W.P. (1981) **A Cognitive Approach to Learning Disabilities**, McGraw-Hill, Inc, (Cited in Grossman 1986).
- Reynolds, R.E. & Baker, D.R. (1987) The Utility of Graphical Representations in Text: Some Theoretical Empirical Issues. **Journal of Research in Science Teaching**. Vol.24, No.2, p.161-173.
- Robinson L.E. & Dugard J.H. (1984) **Health Education Can Be Fun.** Goodwood: Via Afrika, Ltd.
- Rodseth, V. (1978) **Mother-tongue Reading Instruction and English Language Teaching in African Primary Schools.** Evaluation and Recommendations, ISEA, Rhodes University.
- Rogan, J.M. and Macdonald, M.A. (1980) **Reasoning Ability and Junior Secondary School Science - Problem areas and Possible Solutions.** Science Education Project, Unpublished paper.
- Rosen, H. (1979) The Language of Textbooks. In: **Language in Education: A Source Book** London: Routledge and Kegan Paul, pp.119-125.

- Rumelhart, D.E. (1977) Toward an interactive model of reading. In: **Attention and Performance**. Vol.VI, Stanislaw DORNIC (Ed), p.573-603. New York: Academic Press. (Cited in Carrell P.L. 1984).
- Rumelhart, D.E. (1981) Schemata: The Building Blocks of Cognition. In: **Comprehension and Teaching** Guthrie, J T (Ed) Research Reviews (IRA)
- Rumelhart, R.E. & Ortory, A (1977) The representation of knowledge in memory. In: **Schooling and the acquisition of knowledge**. R.C. Anderson, R.J. Spiro, & W.E. Montague (Eds), Hillsdale, N.J.: Laurence Erlbaum Associates.
- Ryder, R.J. & Hughes, M. (1985) The Effect on Text Comprehension of Word Fluency. **Journal of Educational Research**, May/June. Vol.78, No.5 p.286-291.
- Rye, J. (1982) **Cloze Procedure and the Teaching of Reading**. London: Heinemann (Cited in Nuttall and Young 1990).
- Samuels, S.J. (1976) Hierarchical subskills in the reading acquisition process. In: **Aspects of Reading Acquisition**, Guthrie, J T (Ed), Baltimore John Hopkins University Press.
- Samuels, S.J. (1983) A Cognitive Approach to Factors Influencing Reading Comprehension. In: **Journal of Educational Research** Vol.76, No.5 pp.261-266.
- Saville-Troike, M. (1973) Reading in the audio-lingual method. **TESOL Quarterly** Vol.7. No.4, pp.395-405.
- Saville-Troike, M. (1984) What **really** matters in second language learning for academic achievement? **TESOL Quarterly**, June, Vol.18, No.2 pp.199-219.
- Scruggs, M.M. (1988) What Research says about Textbooks. **Science and Children**, Vol.25, No.4 p.24-25.

- Silberstein, S. (1987) Let's Take Another Look at Reading: Twenty-Five Years of Reading Instruction. **English Teaching Forum**, October, pp.28-35 Vol.xxv No.4.
- Smith, F. (Ed) (1973) **Psycholinguistics and reading**. New York: Holt, Rinehart and Winston.
- Smith, F. (1978) **Reading**. Cambridge University Press.
- Spearritt, D. (1972) Identification of subskills of reading comprehension by maximum likelihood factors analysis. **Reading Research Quarterly** Vol.viii, No.1 pp.92-111.
- Spiro, R.J. & Taylor, B. (No date) On investigating children's transition from narrative to expository discourse: The multidimensional nature of psychological text classification. In: **Understanding readers' understanding**. R. Tierny, J. Mitchell, and P. Anders (Eds) Hillsdale, N.J. Erlbaum.
- Spyridakis J.H. & Standal, T.C. (1987) Signals in Expository Prose: Effects on Reading. **Reading Research Quarterly**, Summer, 1987. Vol.22, No.3. p.285-298.
- Steffensen, M.S. (1981) Register, cohesion, and cross-cultural reading comprehension. **Technical report**, No.220, Center for the Study of Reading. Champaign, IL: University of Illinois. (Cited in Carrell 1982).
- Steffenson, M.S. (1988) Changes in cohesion in the recall of native and foreign texts. In: **Interactive Approaches to Second Language Reading** Carrell, P., Devine, J. and Eskey, D. (Eds) Cambridge University Press.
- Steffenson, M.S. (1988) The Effect of Context and Culture on children's L2 Reading: A Review. In: **Research in Reading in English as a Second Language** Devine, J., Carrell, P.L. & Eskey, P.E. (Eds). Cambridge University Press.

- Steffenson, M.S., Joag-dev, C. and Anderson, R.C. (1979) A cross-cultural perspective on reading comprehension. **Reading Research Quarterly** Vol.15. No.1 pp.10-29.
- Steffensen M S, & Joag-dev C. (1984) Cultural Knowledge and reading. In: **Reading in a Foreign Language**, Alderson J.C.and Urquhart A.H, Longman, London.
- Steinley, G.L. (1987) A Framework for Evaluating Textbooks. **The Clearing House**, Nov, Vol.61, No.3 p.114- 118.
- Stennett, R.G., Smythe,P.C. and Hardy, M. (1975) Hierarchical organization of reading subskills: Statistical approaches. **Journal of Reading Behaviour**. Vol.7 pp.223-228.
- Strother, J.B. & Uljin, J.M. (1988) Does Syntactic Rewriting Affect English for Science and Technology (EST) Text Comprehension? In: **Research in Reading in English as a Second Language** Devine, J. Carrell, P.L. & Eskey, D.E. (Eds), Cambridge University Press.
- Stubbs, M. (1983) **Discourse Analysis**. Basil Blackwell, Oxford.
- Taylor, B.M. (1980) Children's memory for expository text after reading. In: **Reading Research Quarterly**. Vol.xv. No.3, pp.399-411
- Taylor, B.M. (1982) Text Structure and Children's Comprehension and Memory for Expository Material. In: **Journal of Educational Psychology**, vol.74, No.3, 323-340.
- Taylor, C.V. (1983) Structure and theme in printed school text. In: **Text** Vol.3. No.2, pp.197-228 Mouton Publishers, Amsterdam.
- Thorndike, E.L. (1973) Reading as reasoning. **Reading Research Quarterly**. Vol.9 No.2. pp.135-147

- Tierney, R., Bridge, C. & Cera, M. (1978-79) The discourse processing operations of children. **Reading Research Quarterly**. Vol.14 p.539-573. (Cited in McGee 1982)
- Tierney, R.J., Mosenthal, J Kantor, R.N. (1984) Classroom Applications of Text Analysis & Toward Improving Text Selection and Use. In: **Promoting Reading Comprehension**. Flood, J (Ed), International Reading Association, Newark, Delaware
- Titone, R. (1985) Early Bilingual Reading. **Prospects: Quarterly Review of Education**, 1985. Vol.15, No.1. p.67-76. (Cited in van Rooyen 1990)
- Tomaselli, K. and R. (1983) **Media Graphics as an Investigationalist Strategy**. Rhodes University. (Cited in Benjamin 1989)
- Tonjes, M.J. (1986) Reading and Thinking Skills Required in the subject classroom. In: **The Language of School Subjects**. Gilham, B. (Ed) London: Heinemann.
- Tuckman, B.W. (1972) **Conducting Educational Research** Harcourt Brace, Javanovich, NY. (Cited in Cohen and Manion 1985).
- Uljin, J.M. (1984) Reading for professional purposes: Psycholinguistic evidence in a cross-linguistic perspective. In: **Reading for professional purposes. Studies and practices in native and foreign language** A.K. Pugh & J.M. Uljin (Eds), (pp66-81). London: Heinemann.
- Upshur, J.A.& Homburg T.J. (1983) Some relations among language tests at successive ability levels. In:**Issues in language testing**. Oller, J. (Ed) New York: Longman. (Cited in Silberstein 1987)
- Van Dyk, T.A. (1977) **Text and Context Explanations in the Semantics and Pragmatics of Discourse**. Longman, London.

- Van Dyk, T.A. (1977) Macrostructures and Cognition. In: **Cognitive processes in comprehension**. P. Carpenter & M. Just (Eds), Hillsdale, N.J.: Erlbaum
- Van Dyk, T.A. (1981) Discourse in Studies in education. In: **Applied Linguistics** Vol.2. No.1 p.1-26.
- van Rooyen, H. (1987) Last week our teacher was ill. This week she is still working: Testing Reference, Pro-Forms and Ellipsis. HSRC Report (Unpublished paper)
- van Rooyen, H. (1987) What did they learn? HSRC Threshold Project (Unpublished paper presented at SAALA Conference)
- van Rooyen, H. (1987) I see a tree with leaves - Error analysis of a productive vocabulary test. (HSRC, unpublished paper).
- van Rooyen, H. (1990) **A Study of the Disparity between English as a subject and English as the Medium of learning**. HSRC, Threshold Project.
- Webb, C M (No date) The Role of Language in Black Education, Teacher Education and Training Colleges of Education. Soweto College of Education. (Unpublished paper)
- Weimann, A. (1986) **An Analysis of Problems Arising out of English Medium Instruction of Pupils in Ten Ciskeian Schools, with Particular reference to Geography in Standard Eight**. Unpublished Master's Dissertation, Rhodes University.
- Welch, S.L. (1977) **Examination of Concept Acquisition in Geography. A Pioneer Study**. Unpublished B.A. Hons Dissertation, Rhodes University
- Whaley, J.F. (1981) Readers Expectations for Story Structure. In: **Reading Research Quarterly**, vol.17, No.1 pp.90-114.

- Widdowson, H.G. (1978) **Teaching Language as Communication**. OUP.
- Williams, M. (1981) **Language Teaching and Learning Geography**. Ward Lock Educational, London.
- Williams, R. (1985) **Readable Writing**: A manual for authors and editors of educational textbooks. Hong Kong: Longman.
- Wilson, L.I. (1973) Reading in the ESOL classroom: A technique for teaching syntactic meaning. **TESOL Quarterly** Vol.7, No.3, pp.259-267.
- Wood, C.T. (1974) **Processing Units in Reading**. Doctoral dissertation, Stanford University. (Cited in Berman 1984).
- Young, D. and Nuttall, C. (1989) Towards a Text-Analysis Model. In: **Southern African Studies in Applied Linguistics**. Van Der Walt, J.L.(Ed) SAALA, Potchefstroom.

(From Williams R. (1985), *Readable Writing*, pp.78-80.)

Summary of the rankings of syntactic structures in Botel and Granowsky's syntactic complexity formula

0-count structures

subject-verb-object

The judiciary upholds the law.

subject-verb

The voters decide.

subject-verb-adverbial

The Sioux disappeared into the plains.

subject-be-adjective

Copper sulphate is blue.

* subject-be-noun

Kenyatta became President.

subject to adverbial

The compass turned in an instant.

subject-verb-infinitive

The students want to work.

interrogative

Will it rain?

exclamatory

What a winter!

imperative

Light the bunsen burner.

co-ordinate clause

The engine burns petrol, and the exhaust emits carbon monoxide.

joined by and

1-count structures

subject-verb-indirect

Merere granted the German government more territory.

object-direct object

subject-verb-object-

The Chiefs made his life difficult.

object complement

subject-verb-object-
prepositional phrase

The judiciary upholds the law in every state.

subject-verb-
prepositional phrase

The voters decide via the ballot box.

subject-verb-adverbial-
prepositional phrase

The Sioux disappeared into the plains on their ponies.

subject-be-adjective/
noun/adverbial-
prepositional phrase

Kenyatta became President the following year.

subject-verb-infinitive-
prepositional phrase

The students want to work for their examinations.

noun modified by
adjective

The Shang people used an interesting form of writing

* Linking verbs such as seem, become, turn are included in the category of be verbs.

noun modified by noun	The <u>road</u> network was extended considerably in the following decade.
noun modified by predeterminer	<u>All of</u> the parties attended the Lancaster House conference.
noun modified by possessive	The <u>tugboat's</u> function is to guide the liner to the open sea.
noun modified by participle	The <u>extracted</u> juices are then sieved.
adverbial addition to a 0-count sentence	The voters decide <u>democratically</u> .
modals (<u>can, may, ought, must, should, need to, etc.</u>)	Sodium <u>must</u> be kept immersed in paraffin oil.
negatives (<u>no, not, never, neither, etc.</u>)	It is <u>not</u> always easy to decide whether a structure is a seed or a fruit.
infinitive separated from verb	The tribe <u>wanted</u> the Chief <u>to represent</u> them in Lusaka.
gerund as subject	<u>Swimming</u> is encouraged in all schools.
co-ordinate clause joined by <u>but, for, so, yet, or, etc.</u>	This was Nigeria's decision, for it had no other choice.
ellipsis in co-ordinate clause	The ovule was small but the ovule <u>was</u> healthy.
paired conjunction <u>both . . . and</u>	<u>Both</u> the teachers <u>and</u> the parents expressed strong reservations.
<i>2-count structures</i>	
passive	The British administration <u>was opposed</u> by the whole population.
paired conjunctions <u>either . . . or, neither . . . nor, etc.</u>	<u>Neither</u> the chairman <u>nor</u> the vice-chairman was prepared to comment.
comparatives <u>as . . . as, same . . . as, -er than, more . . . than</u>	The government, however, was <u>as feeble as</u> ever.
relative clause	Calcium oxide, <u>which is also known as quicklime</u> , is produced by . . .
adverbial clause	The leaves are collected <u>so that compost may be formed</u> .
nominal clause	The judge asked <u>where he lived</u> .

participle after its noun, or separated from it by comma(s)	The convict, <u>exhausted</u> , gave himself up to the police. (also: <u>Exhausted</u> , the convict . . . ; and: The police <u>approaching</u> , the convict gave himself up.)
infinitive as subject	To vote is a duty expected of every member of the electorate.
appositive	The Minister of Health, <u>well-known</u> for his incisive wit, opened the hospi- tal to the cheers of his audience.
discourse markers (<u>nevertheless</u> , <u>moreover</u> , <u>consequently</u> , etc.)	The left lung appeared to be clear. <u>Nevertheless</u> , a biopsy was still per- formed.
<i>3-count structures</i> clauses used as subjects absolutes	<u>The fact that the sea is still relatively unpolluted</u> is very surprising. <u>The election over</u> , the successful candidate usually gives a speech of thanks to his supporters.

As mentioned on page 39, the value of these sets of rankings to the writer does not lie in their use in the formulaic sense of assigning a score to a sentence. But they are helpful in assessing the contribution of a particular structure to (reduced) readability. In particular, the rankings are valuable in assessing the cumulative effect of structures that are difficult to process. For example:

The lime, purified, having been bagged, is transported to the docks, where it is shipped abroad to be used extensively in agriculture to reduce soil acidity, a factor retarding agricultural development in so many parts of the world. EI

Among other syntactic structures, this sentence contains an absolute (3-count), a post-noun participle (2), three passives (6), a relative clause (2), an appositive (2), etc. And these are only the *syntactic* aspect of the sentence's readability!



DPL/gj

4 November 1988

Mr R Ngoma
 Inspector
 Department of Education and Training
 Private Bag X1001
 GRAHAMSTOWN
 6140

Dear Mr Ngoma

PERMISSION TO CONDUCT RESEARCH IN THREE HIGHER PRIMARY SCHOOLS
 IN GRAHAMSTOWN DURING 1989

As part of my research for the Molteno Project I am working towards a Master's degree in which I will attempt to identify and explain some of the difficulties that Xhosa speaking pupils experience when studying Geography through the medium of English in Standard 3.

It is my aim to identify linguistic, conceptual and methodological factors which contribute to the difficulty of learning Geography through the medium of English in the pupils' first year of English medium instruction.

In order to conduct the above research I will need to spend time observing lessons, interviewing geography teachers and possibly conducting tests using groups of Std 3 geography pupils during 1989. Since my present Molteno work is confined to the Junior Primary level, I request permission to conduct the above research at the Higher Primary level. Should the Department approve my request, I would appreciate it if I could liase with Mr Hewana, the President of the Grahamstown Schools' Subject Committee, about co-ordinating my research in the Grahamstown schools.

Yours sincerely

D P LANGHANASSISTANT RESEARCH OFFICER: MOLTENO PROJECT

Institute for the Study of English in Africa

RHODES UNIVERSITY

P.O. Box 94, Grahamstown, 6140 South Africa

Telegrams 'Rhodescol' Telex 24 4211 SA Telephone (0461) 26093



Dr M M Kruger
 Department of Education and Training
 Private Bag X212
 Pretoria
 0001

7 June 1989

Dear Dr Kruger

**Permission to conduct research in two Higher Primary schools
 in Port Elizabeth during 1989**

I have been directed to you by Mr J H P Brand, Deputy Director, Education and Training in Port Elizabeth, to request permission to conduct research in two schools in his region.

As you may know, the Molteno Project has been involved in the research and development of language courses for the Junior Primary school since 1974. We are currently involved in experimental work with our Standard Two English course which, when completed, will make up the last of our language courses for the Junior Primary school. One of our main concerns in the development of all our courses has been to prepare children for the transition to English medium instruction in Standard Three. In order to do this, we now need to extend our field of research from the Junior Primary into the Higher Primary schools. As part of the Project's research in this direction, I am conducting research in which I will attempt to identify and explain some of the difficulties that Xhosa speaking teachers and pupils experience when studying geography through the medium of English in Standard Three. This research is firstly to contribute to the design of the English-across-the-curriculum components of our language courses. Later, I intend to use the research for a higher degree thesis.

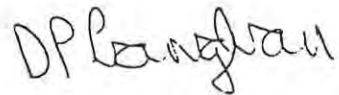
In order to conduct the above research I would like to conduct personal interviews with Standard Three teachers from the following schools in Port Elizabeth:

1. Johnson Magwana Higher Primary, New Brighton
2. John Masisa Higher Primary, Walmer.

With the teachers' permission I would also like to observe some geography lessons in action. I am aware of the numerous disruption that have plagued schools in Port Elizabeth in the past, and I will plan my research so as to avoid the disruption of the school programme as far as is possible.

Should you approve my request, I would appreciate it if I could liaise with Miss A Nama, the Regional Inspectress for Port Elizabeth, in order to co-ordinate my school visits.

Yours sincerely

A handwritten signature in cursive script that reads "D P Langan".

D P Langan
Administrative Officer: The Molteno Project



Institute for the Study of English in Africa

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Dr A Redelinghuys
Director General: Education & Training
Private Bag X212
Pretoria
0001

18 October 1989

Dear Dr Redelinghuys

Thank you for your Department's permission for me to conduct research in departmental Higher Primary schools in the Eastern Cape.

In compliance with Departmental requirements, I have enclosed a copy of the revised Structured Interview which will provide questions for the second round of interviews with the same teachers, using re-written versions of the sections from the Standard 3 geography textbook used in the first interviews. You will notice that only a few of the questions have been altered in order to accommodate the changes in the revised texts. Probably the most significant change is the re-ordering of the questions.

Yours sincerely

A handwritten signature in cursive script, appearing to read 'D P Langan'.

D P Langan
Administrative Officer: The Molteno Project



Institute for the Study of English in Afr

RHODES UNIVERSITY

P.O. Box 94, Grahamstown, 6140 South Africa

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Mr B Podesta
 Assistant Director
 Department of Education & Training
 Private Bag X1001
 Grahamstown 6140

18 October 1989

Dear Mr Podesta

Permission to conduct research in two local schools

Enclosed are copies of:

1. My application to Pretoria for permission to conduct research in Higher Primary schools and,
2. Dr Redelinghuys' letter granting permission.

The application contains the details of my research as required by the Department.

Mr Staude, Regional Director: Cape Region has also granted permission (telephonically), and has instructed me to get your approval before I proceed with the planned interviews. I would therefore be most grateful if you would consider the enclosed application and let me know whether I may proceed or not.

Yours sincerely

D P Langhan
 Administrative Officer: The Molteno Project



Institute for the Study of English in Africa

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Mr Staude
 Regional Chief Director
 Education & Training
 Private Bag X3903
 Port Elizabeth
 6056

7 November 1989

Dear Mr Staude

Proposed Research Programme 1990

I refer to your letter dated 30.10.89.

Thank you for granting permission for me to conduct research in four East Cape Higher Primary Schools.

As instructed, I obtained permission from the Assistant Directors to proceed with arrangements for the interviews in question. I have already conducted the two interviews in the Grahamstown schools with the permission of Mr B Podesta. Both interviews were conducted after 2.00pm, outside school hours.

I have contacted the principals of the two Port Elizabeth schools concerned and have arranged interviews on the following days:

Tuesday 14 November
 Thursday 16 November

For your information I have enclosed copies of my correspondence with the principals. You will notice from the letters that both interviews are to be conducted outside school hours.

Thank you for your cooperation.

Yours sincerely

D P Langham
 Administrative Officer: The Molteno Project

Institute for the Study of English in Africa

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Mr G Yoyo
Principal
John Masisa Higher Primary School
Walmer Township
Port Elizabeth
6065

18 October 1989

Dear Mr Yoyo

Interviews with Standard 3 Geography teachers

Enclosed is a copy of the letter from Dr Redelinghuys in Pretoria, granting me permission to conduct my research in Port Elizabeth schools. I have also been granted permission by Mr Staude, Regional Chief Director: Cape Region, who phoned me in this regard.

I wish to confirm the details for the interviews I discussed with you on 13.10.89, as follows:

I will come to your school between 1.0pm and 1.30pm on Tuesday, 14 November to collect your Standard Three geography teachers. I will provide light refreshments before interviewing them at the Centre for Continuing Education in the city. After the interview I will take the teachers back to the school. This procedure will be repeated on Thursday, 16 November.

Also enclosed are interview consent forms for your teachers. Please ask them to complete the forms and return them to me on 14 November.

Thank you for your willing co-operation. I appreciate it very much.

Yours sincerely

D P Langhan
Administrative Officer: The Molteno Project



Institute for the Study of English in Africa

RHODES UNIVERSITY

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Telegrams 'Rhodescol' Telex 24 4211 SA Telephone (0461) 2609

Mr R Tube
 Johnson Marwanqa Higher Primary School
 PO Box 163
 New Brighton
 Port Elizabeth

18 October 1989

Dear Mr Tube

Interviews with Standard 3 Geography teachers

Enclosed is a copy of the letter from Dr Redelinghuys in Pretoria, granting me permission to conduct my research in Port Elizabeth schools. I have also been granted permission by Mr Staude, Regional Chief Director: Cape Region, who phoned me in this regard.

I wish to confirm the details for the interviews I discussed with you on 13.10.89, as follows:

I will come to your school between 1.0pm and 1.30pm on Tuesday, 14 November to collect your Standard Three geography teachers. I will provide light refreshments before interviewing them at the Centre for Continuing Education in the city. After the interview I will take the teachers back to the school. This procedure will be repeated on Thursday, 16 November.

Also enclosed are interview consent forms for your teachers. Please ask them to complete the forms and return them to me on 14 November.

Thank you for your willing co-operation. I appreciate it very much.

Yours sincerely

DP Langhan

D P Langhan
 Administrative Officer: The Molteno Project



Institute for the Study of English in Africa

RHODES UNIVERSITY

P.O. Box 94, Grahamstown, 6140 South Africa

Telegrams 'Rhodescol' Telex 24 4211 SA Telephone (0461) 26093

Mr Tabata
 Secretary of Education
 Ciskei Department of Education
 Private Bag X0032
 Bisho

10 April 1989

Dear Mr Tabata

Permission to conduct research in two Higher Primary schools in
 Ciskei during 1989

As you may know, the Molteno Project is involved in a language teaching programme in a number of Junior Primary schools in the Ciskei under the supervision of the Hlaziya In-Service training staff. You will also know that one of the Molteno Project's aims is to prepare children for the transition to English medium instruction in Standard 3. As part of the Project's research in this direction, I am conducting research in which I will attempt to identify and explain some of the difficulties that Xhosa speaking teachers and pupils experience when studying geography through the medium of English in Standard 3. This research is firstly to contribute to recommendations to be made to textbook authors and syllabus designers at the Standard 3 level. Later I intend to use the research for a higher degree thesis.

In order to conduct the above research I would like to conduct personal interviews with Standard 3 teachers. This may involve them in completing a simple questionnaire. With their permission I would also like to observe some geography lessons in action. I therefore request permission to conduct this research in the Zwelitsha Higher Primary school and one other school, possibly in Mdantsane. Should you approve my request, I would appreciate it if I could liaise with Miss N Ndleleni of the Hlaziya In-Service training Centre, about co-ordinating my research in the schools.

Yours sincerely

D P Langhan
 Administrative Officer: The Molteno Project



Assistnat Director
Mdantsane Central
Ciskei Education Department
Private Bag X0032
Bisho

12 May 1989

Dear Sir

Research to be conducted at Funulwazi Higher Primary School,
Mdantsane Central during 1989

I have been instructed by Mr Tabata, Director-General of Education to inform you that I have been granted permission to conduct research in the above school during 1989. He has also approved of the fact that I work in co-operation with a staff member of the Hlaziya In-Service Training Centre, who will act primarily as a guide and interpreter if necessary.

I plan to visit the school a few times during the second and third quarters and will co-ordinate with the Principal so as to avoid disrupting the normal school programme.

I have attached copies of my correspondence with Mr Tabata so that you are fully informed about my research interests and the Department's approval thereof.

Yours sincerely

DP Langhan

D P Langhan
Administrative Officer: The Molteno Project



Institute for the Study of English in Africa

RHODES UNIVERSITY

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Assistant Director
Zwelitsha North Circuit
Ciskei Education Department
Private Bag X0032
Bisho

12 May 1989

Dear Sir

Research to be conducted at Zwelitsha Higher Primary School during 1989

I have been instructed by Mr Tabata, Director-General of Education to inform you that I have been granted permission to conduct research in the above school during 1989. He has also approved of the fact that I work in co-operation with a staff member of the Hlaziya In-Service Training Centre, who will act primarily as a guide and interpreter if necessary.

I plan to visit the school a few times during the second and third quarters and will co-ordinate with the Principal so as to avoid disrupting the normal school programme.

I have attached copies of my correspondence with Mr Tabata so that you are fully informed about my research interests and the Department's approval thereof.

Yours sincerely

DP Langhan

D P Langhan
Administrative Officer: The Molteno Project

Institute for the Study of English in Africa

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Follow-up on research interviews done in 1989

Thank you very much for your co-operation and support during 1989. The interviews I conducted with your Standard 3 geography teacher were most successful.

Unfortunately, I forgot to gather some important information during the interviews. I would therefore appreciate it very much if you could ensure that your teacher completes the attached, anonymous form and returns it to me as soon as possible. I have enclosed a stamped, addressed envelope for the return of the form.

Yours sincerely

A handwritten signature in dark ink, appearing to read 'D P Langhan'. The signature is written in a cursive, somewhat stylized script.

D P Langhan
Administrative Officer: The Molteno Project



11.1.1990

Dear Respondent

Thank you for your willing participation in my research interviews in 1989. I hope you will not mind if I ask you to provide me with a few more details which I require in order to complete the research.

Please complete this form and return it to me in the enclosed, stamped envelope as soon as possible.

PLEASE PRINT

Age:

Sex:

Position held at your school (e.g. teacher/HOD, etc):.....
.....

Highest school-leaving qualification (e.g. Std 8, Std 9, Std 10):
.....

Teaching qualifications (e.g. PTD, BA, etc):
.....

Number of years of geography teaching at Std 3/4 level:

Number of years of geography teaching at other levels:
.....

Number of years of general teaching experience (other subjects included):
.....

Teaching subjects for which you have received formal training at a
Training College:

6. Mining in South Africa

Study for yourself

- 1 Make a list of all the things that you can see around you. Include desks, pens, windows and other objects. Next to each word write down what each object is made of. For example, a desk is made of wood, iron nails, steel screws and brass hinges. A window is made of glass and wood or steel, and a pen is made from plastic.
- 2 The things that are needed to make the objects around you are called *raw materials*. Raw materials may be wood, water, coal, iron or other minerals.
- 3 In this chapter we will learn something about South Africa's minerals.
- 4 Figure 53 shows you where they are mined.
- 5 You need to study only ONE of the following: Gold, diamonds, coal, copper or iron ore.

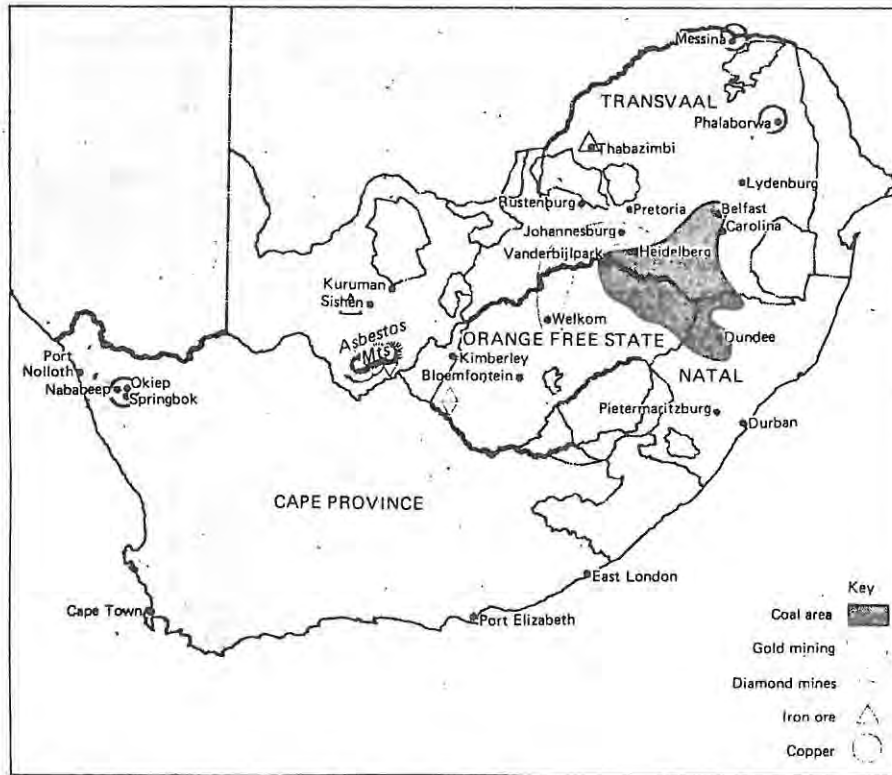


Figure 53. Important minerals.

(a) Gold

- 5 South Africa is the world's biggest producer of gold. Much of all the gold mined in the world comes from South Africa.
- 6 Figure 53 shows you where the gold is mined. The mines are found in an arc which begins in the Orange Free State and which ends at Heidelberg to the east of Johannesburg.

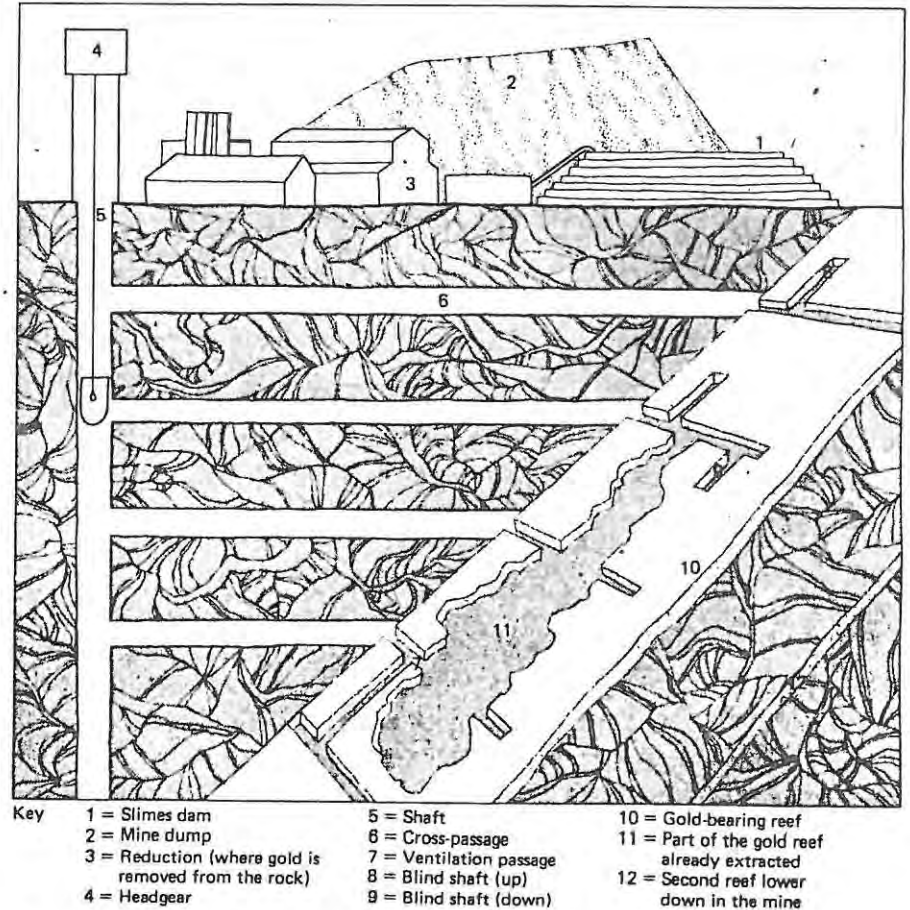


Figure 54. Inside a goldmine.

- 7 ^a Many of the towns and cities along this arc began as gold mining towns.
- ^b The most famous of these is *Johannesburg*.^c When gold was first discovered there was no town. Within a few years the town had grown out of the veld.
- ^e Today it is the biggest city in South Africa.
- 8 South Africa has some of the *deepest* gold mines in the world. A number of gold mines are over 3 000 metres deep into the ground. Mining so deep is dangerous and mining engineers have had to work out ways of protecting the miners from accidents.
- 9 Figure 54 shows you what a gold mine looks like. The rock with the gold in it is known as *a reef*.^y You can see how the gold reef slopes at an angle into the earth.^x This also makes mining a difficult task.^y South African mining engineers, who have to overcome these problems, are among the best in the world.
- 10 People come from all over Southern Africa to work in South African mines. They earn money which they can send back to their families.
- 11 South Africa *sells gold* to many other countries. The gold earns money for South Africa. This money can be used to buy things that the country needs, like machinery, ships, clothes, books and motor cars. Figure 55 shows you how important gold is to South Africa. Without gold South Africa would have far less money coming in.



Figure 55 The importance of gold and diamonds.

PASSAGE 2 from : Hurry L.B. (1980) *Geography Can be Fun, Std 3*, Via Afrika Ltd. pp. 24-27.

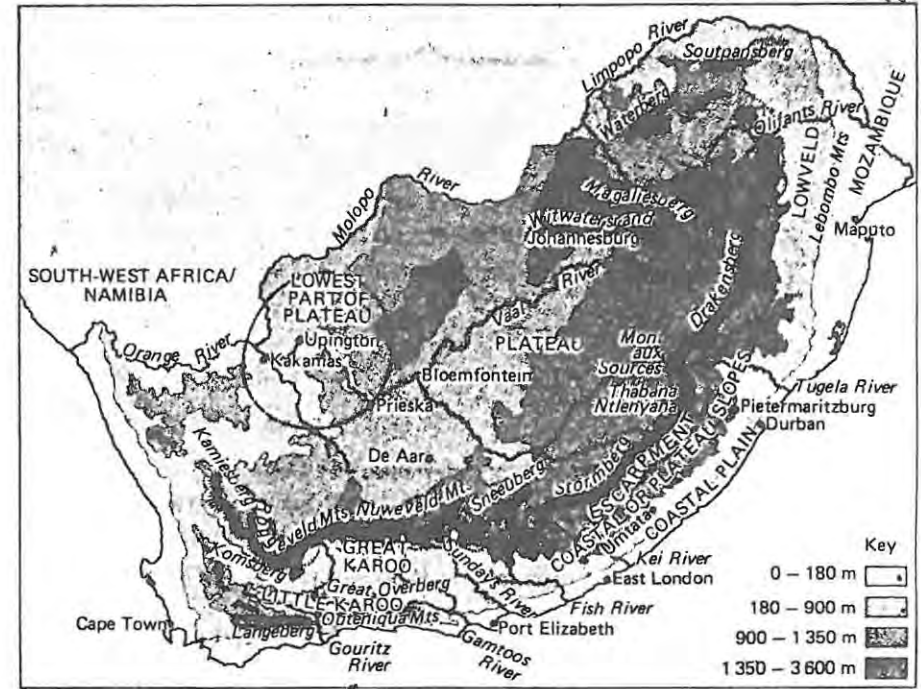


Figure 25 The relief of South Africa.

(a) General

- 2 South Africa's relief looks like a saucer that has been turned upside down.
- 3 The base of the saucer is the line of mountains stretching from the Kamiesberg in the South-western Cape to the Drakensberg in the Transvaal.

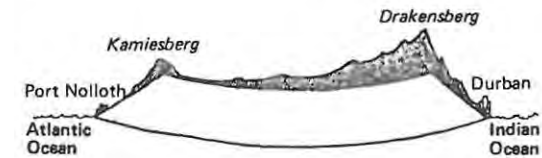


Figure 26 The relief of South Africa looks like an upturned saucer.

4. What South Africa looks like from space

- 1 If you could fly very high in a satellite, or a space-ship, you would be able to see the whole of South Africa far below you. You would be able to see the mountains and the rivers and all the land in between them. These things make up what is called the *relief* of South Africa. Figure 25 shows you the relief of South Africa on a map.

Look carefully at figure 25 and note the following points.

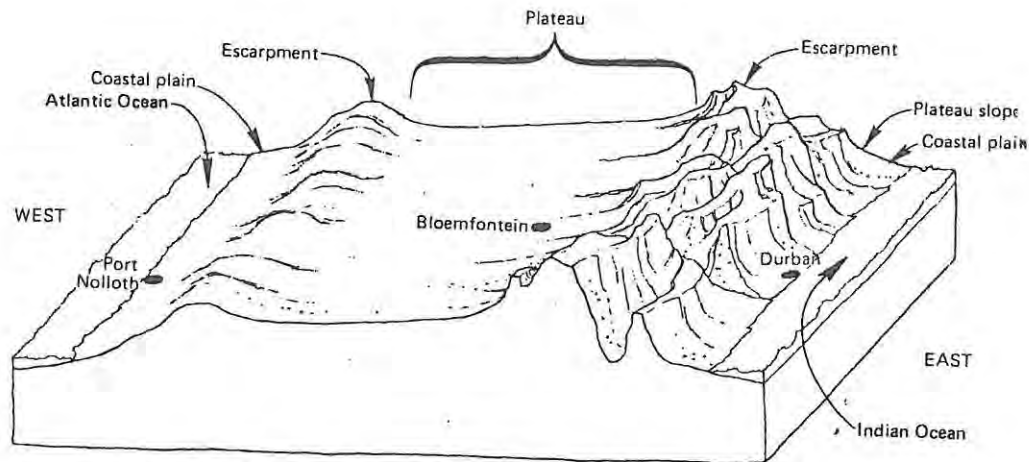


Figure 27

(b) The plateau

- 4^h The high flat part of South Africa is known as the *plateau*. (See figure 27).
The plateau is highest in the east and lowest in the west.
- 9 The plateau is very flat. Another word for plateau is "table-land".

(c) The escarpment

- 5^j The mountains that form the edge of the plateau are called the *escarpment*.
The highest point of the escarpment in South Africa is the top of Mont-aux-Sources in Natal. This is 3 480 metres above sea level.
- 6 Many mountain ranges go to make up the escarpment. The Nuweveld Mountains, the Sneeuberg, the Stormberg and the Drakensberg are only a few.

(d) The plateau slopes.

- 7 Between the escarpment and the sea the land is called the *plateau slopes*. These parts of South Africa are very hilly. Examples of the plateau slopes are the Transkei and the Tugela Valley.

(e) Other mountains

- 8 There are some mountains that do *not* form part of the escarpment. These are:
- the Magaliesberg near Pretoria
 - the Waterberg near Potgietersrust
 - the Zoutpansberg near Louis Trichardt.
- The Witwatersrand is not a mountain but a line of hills. This is the area where Johannesburg and other very important cities are found.

(f) The coastal areas

- 9 Look at figure 25 again. Would you say that the coastline (that is the line along the sea) was *smooth* or *rough*? Between the coastline and the plateau slopes the land is fairly flat. This is known as the *coastal plain*. The coastal plain is widest in northern Natal and narrowest along the southern Cape coast.
- 10 Is the coastal plain wider along the Transkei coast than it is along the coast in the western Cape?

The Climate of the RSA

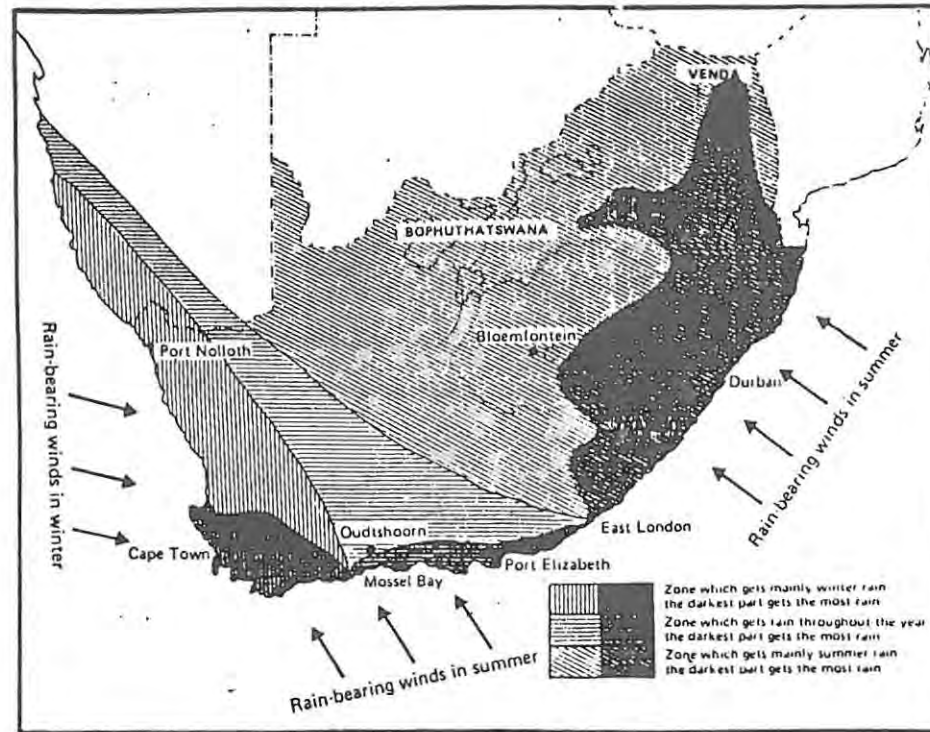
1 ¹ Climate is the weather pattern of a particular area.² For instance, in the south-western Cape Province the climate in winter is spells of cool, rainy weather followed by lovely sunny days. In chapter 2 you learned about the weather. You should by now have started making your own weather chart (see p. 10). Study it and say what the weather pattern in your area has been lately.

RAIN-BEARING WINDS

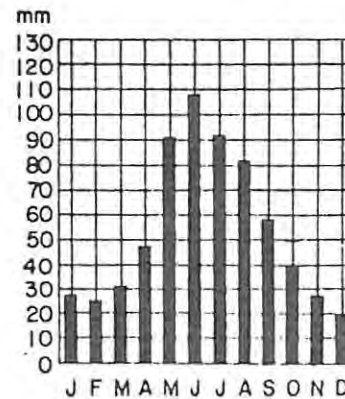
2 ¹ As you probably already know, wind brings moisture to the land.² As you remember from standard 2, hot air rises and cold air sinks.³ In the interior of the RSA the summers are hot, so the air rises.⁴ Warm, moist air from over the Indian Ocean flows in to take its place.⁵ This causes summer thunderstorms.⁶ When the moist air reaches the escarpment it is forced to rise and rain falls.⁷ There is also a lot of mist in this area.⁸ Thus, the air loses a lot of its moisture before crossing the mountains of the escarpment.⁹ This is why less rain falls on the western side of the mountains and the climate gets drier and drier the further a west one goes.¹⁰ It gets so dry that there is a desert along the west coast of southern Africa (mainly in Namibia).¹¹ Find out what this desert is called.

THE RAINFALL ZONES OF THE RSA

3 The following map (no. 1) indicates the

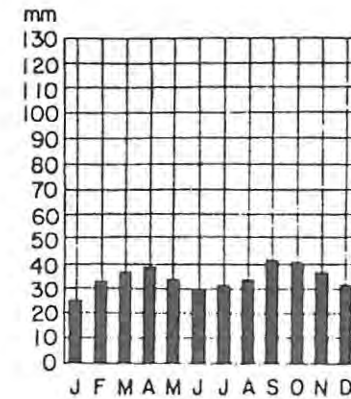


Map 1: The rainfall zones of the RSA



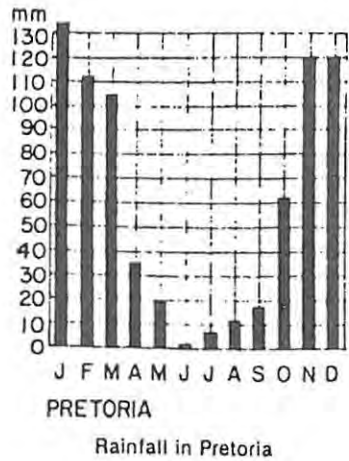
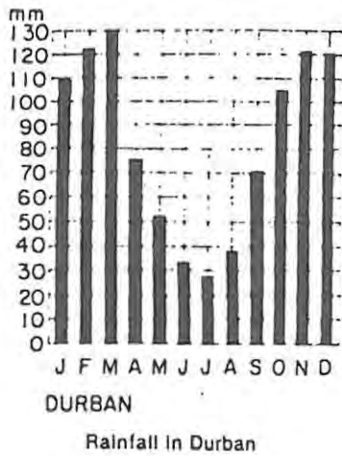
CAPE TOWN

Rainfall In Cape Town



MOSEL BAY

Rainfall in Mossel Bay



rain-bearing winds, the season when they blow and the rainfall zones of the RSA. Study it carefully and then answer these questions:

- (a) In which rainfall zone is your town or city situated?
- (b) When does Cape Town get most of its rain?
- (c) Does Cape Town or Port Nolloth get more rain?
- (d) When does Mossel Bay get its rain?
- (e) When do Durban and Bloemfontein get their rain?
- (f) Does Durban or Bloemfontein get more rain?

HOW MUCH RAIN FALLS IN THE RSA

6 Map no. 2 shows how much rain usually falls in the RSA every year. Study it carefully and then answer the following questions:

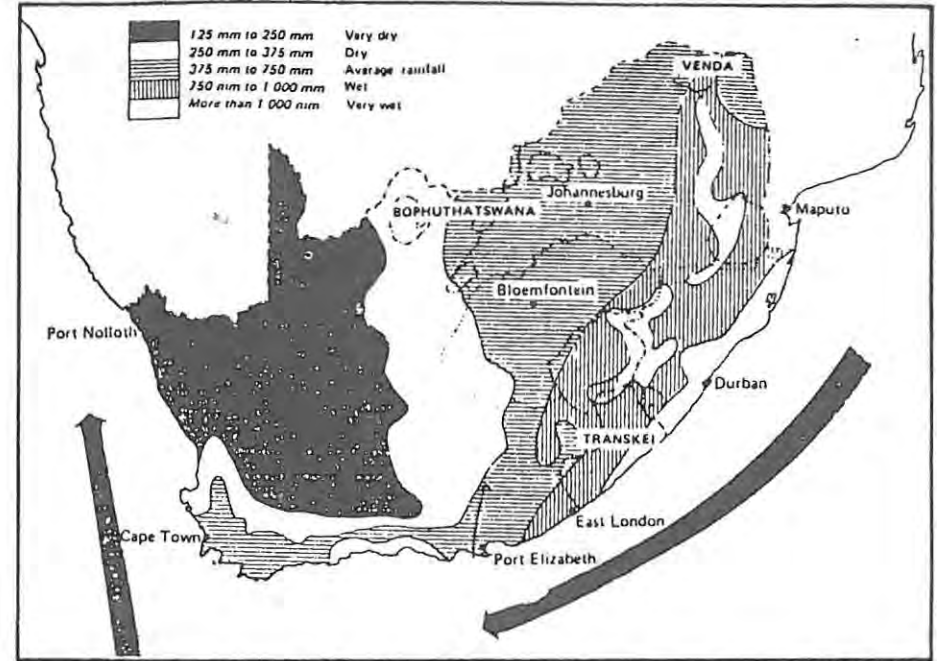
- (a) (i) Name three regions which have more than 1 000 mm rain per year.
- (ii) Think about what you learned about rain-bearing winds. Now try to explain why these areas have so much rain.
- (b) Which area of the RSA has the lowest rainfall per year? Why?
- (c) Does East London or Cape Town usually have more rain each year?
- (d) How much rain usually falls in Johannesburg each year?
- (e) Work out where your home town or city is on the map. Now say how much rain usually falls each year where you live.

4 The diagrams above show how much rain usually falls each year in Cape Town, Mossel Bay, Pretoria and Durban. Each black line stands for a month. The longer the black line, the more rain usually falls in that month. The numbers up the side show how many mm rain usually fall. So, 130 mm rain usually falls in Pretoria during the month of January and 30 mm rain usually falls in Mossel Bay during the month of June.

5 Study the diagrams and decide in which rainfall zone each town or city falls. Now find the places on the map and see whether you were right.

RELIABILITY OF THE RAINFALL

7 When we learnt about rain-bearing winds (p. 28) we saw that when the moist air from the Indian Ocean is forced to rise against the slopes of the escarpment, it loses most of its moisture, so the areas west of the



Map 2: Average annual rainfall

escarpment are dry. Look at a map and you will see that this means that most of the RSA is dry. In other words, it has a low rainfall which mostly falls in the form of scattered thunderstorms. These areas often suffer from drought. A drought is when far less rain than normal falls in an area. Often in these areas the rain falls in strips. This means that while one farm gets a good fall of rain during a thunderstorm, its neighbour gets none.

STRUCTURED INTERVIEW 1, PART 1, APRIL/MAY 1989

THE NATURE AND PURPOSE OF THIS INTERVIEW (as explained to the interviewees before the interview).

A) This interview involves two main stages, each with a different aim.

Stage 1 I will ask you questions about teaching geography through the medium of English in standard three. My questions will focus on:

- 1) Your **pupils'** experience of geography and how you feel they cope with learning it, and 2) on **your** experience of teaching geography and how you feel you cope with teaching it.

Stage 2 Since I have already researched the use children make of textbooks and the problems they have with them, the second stage will focus on **your** experience with prescribed geography textbooks. We will examine three passages selected from two geography textbooks. I will ask you questions about the passages. Your answers will help me to understand whether these textbooks are too easy or difficult (or just right), for teachers to use for the teaching of geography.

- Notes:
- 1) This is not a test of your intelligence. My aim is not to find out how much you don't know about the syllabus. I am mainly concerned with how easy or difficult it is for us to understand the passages we are going to read.
 - 2) When you answer the questions, I am not going to tell you if you are right or wrong. I am not looking for right or wrong answers. I want to know what you think or feel - what your response is. I will say "yes" to all your answers as a sign that I accept what you say, as the way you see it.
 - 3) I will be asking all the people I interview the same questions. If you can't answer a question - don't feel bad, it is not a reflection of your ability, it is an indication of how suitable the textbook is for you.

B) I will be recording the interview so that I do not have to keep stopping to write down your answers.

Do you object to this interview being recorded? If not, would you mind signing this form, (See Appendix F) giving your consent (permission) (1) for me to record the interview and (2) for me to use your responses for research purposes?

INTERVIEW CONSENT FORM

I _____ hereby agree to participate in tape-recorded interviews, to be conducted for research purposes, by Mr D.P.Langhan of the Molteno Project, Rhodes University.

I have no objection to the use of information provided by me during the course of such interviews, for his research purposes.

Signed:

Date:

STRUCTURED INTERVIEW 1, PART 1:

Geography teaching and learning in Std 3 - May 1989.

(Interview questions repeated from informal (semi-structured) interview, April - May 1987).

General Questions preceding textbook interview

1. How do you feel your pupils are coping with geography?
(Do they find it easy or difficult?)
- 2a. Can you say what they find difficult/easy?
 - b. Can your pupils read the geography textbook on their own?
 - c. Can they make notes from the textbook on their own?
 - d. Can they do the tasks in the textbook?
- 3a. Which parts of the syllabus would you say the pupils find most difficult?
 - b. Which parts of the syllabus would you say the pupils find most easy?
4. How do pupils cope with the English used in the textbook (vocabulary etc)?
5. Do they understand the maps and graphs in the textbook?
(Can they answer questions about maps and graphs?)
6. Do you find it easy to teach geography?
7. Can you say why?
What do you find difficult/easy about teaching geography?
8. How do you cope with the problems you experience?
(How do the difficulties influence the methods you use to teach geography?)
9. Do you find that you are able to teach pupils in English most of the time?
- 10a. Can you describe, briefly, the steps that you normally follow in geography lessons? (What happens in your geography lessons normally: the methods you use; how much of the time you have to help pupils by explaining etc; how much time they work on their own, and so on.)

- b. How does this compare with the way you would like to teach your lessons?
- 11. What are your feelings about the prescribed textbooks? Do you ever have any difficulties understanding the language, vocabulary, or any of the content in the textbooks?
- 12a. Do you have any difficulty understanding the maps, graphs, illustrations, etc in the textbooks?
 - b. Can you say what you find difficult about them?
- 13. Would you like to comment on the problems of teaching geography in Standard Three?

STRUCTURED INTERVIEW 1, PART 2 (LEVEL ONE)

Testing the interview schedule: The readability and comprehensibility of textbooks for Std 3 teachers.

Questions on Passage 1.

Questions to be answered before reading the passages:

Establishing background knowledge

1. Do you know what minerals are?
Tell me what you know about minerals.
2. Do you know what gold is?
Tell me what you know about gold.
3. Where does gold come from?
4. What is a mine?
Tell me what you know about a mine or mines.
5. Have you ever seen a mine?
What parts of a mine have you seen? (Did you see?)
Look at the picture on page 66.
Does this picture show the part of a mine that you have seen?
Can you show me the part in this picture?
6. Do you know where gold is mined in South Africa?
Can you give me any details on where it is mined in South Africa?

Questions to be asked after a thorough reading of the passage

1. Look at page 65. (Point out the word "minerals".)
Do you know what minerals are now?
Can you give me examples of minerals in this passage?
2. Look at page 66. (Point to the word "arc" in the text.)
Do you know what this word means?
Read the sentence and tell me what you think it means.
Can you show me what an arc looks like?
3. This passage says that Figure 53 shows you where the gold is mined.
Where is Figure 53?
Can you show me the place on the map, where gold is mined?
How did you find it? (What helped you to find it?)

4. Read the first paragraph on page 67. (After reading, point to the expression, "the town had grown out of the veld")
Do you know what this expression means?
Can you explain what you think happens when a town grows out of the veld?
5. Look at the picture on page 66. What is this a picture of?
What do you think this green part is? (Point to main gold reef)
What do you think this other green part is? (Point to secondary gold reef)
What do you think this is? (Point to the headgear)
What do you think these white parts are? (Point to passages/tunnels)
6. What did you do to find out what the things in the picture were?
7. Look at page 67. (Point to "these problems" in the last line of paragraph three)
What do you think these problems are? (You can read the page if you want to and then tell me)
8. Read the last paragraph on page 67.
Can you think of a title or a heading for this paragraph?
9. What does Figure 55 show us?
How does it show us this?

Readers now close their books and answer these questions

1. What are the important things the passage tells us?
2. What does it tell us about minerals?
3. Did the passage tell us what is made with plastic?
Did the passage tell us what is made with gold?
4. What did the passage tell about mines in South Africa?
5. What did the passage tell about Johannesburg?
6. What did the passage tell about mining engineers?

Questions on Passage 2.

Questions to be asked before reading the passage
(Background knowledge and vocabulary)

1. Do you know what a satellite or a spaceship is?
What can you tell me about a satellite or a spaceship?
2. Do you know what a plateau is?
What can you tell me about a plateau?

3. What is an escarpment?
What can you tell me about an escarpment?
4. What is a mountain range?
Can you tell me or show me what it looks like?
5. What is the relief of a country?

Questions to be asked after reading the text

1. Look at page 24. (Point to the word "space" in the heading)
What does this word mean in this sentence?
2. (Point to the word "relief" in the fourth line of the first paragraph) What does this word tell us about, in this paragraph?
3. Read the last sentence on page 24. What are the following points we are supposed to note?
Where will we find them?
4. Look at page 25. Read the paragraph. What is the "base" of a saucer?
5. Look at Figure 26. What is it a picture of?
Can you show me the line of mountains in this picture?
6. Can you say in your own words what the plateau is?
7. Can you say in your own words what the escarpment is?
8. Look at Figure 26. Show me where the escarpment is.
If this was a proper picture of South Africa, where do you think Cape Town would be?
9. Read the passage about the escarpment on page 26. What does this mean? (Point to "many mountain ranges go to make up the escarpment")
10. Look at Figure 26 again.
Show where the plateau is, where the escarpment is, and where the plateau slopes are.

Readers now close their books and answer these questions

1. What are the important things the passage tells us?
2. What does the passage tell about the relief of South Africa?
3. What does the passage tell about the coastal plain?
4. What does the passage tell about other mountains?
5. What does the passage tell about the Witwatersrand?

Questions on Passage 3

Questions to be answered before reading the passage (Background knowledge)

1. What is a climate?
2. What is a drought?
3. What is a climatic zone?
4. Do you know what causes thunderstorms?
Can you tell what you know?
5. Is there more rain near the coast of South Africa or in the inland areas?
Can you explain why?
6. What is a rain-bearing wind?
Tell what you know about rain-bearing winds in South Africa?

Questions to be asked after reading the passage

1. Look at page 28. (Point at "spells" (of cool, rainy weather) in first paragraph) Do you know what this word means?
Say in your own words what you think it means.
2. What are rain-bearing winds?
3. Why is there a desert along the west coast of southern Africa?
- 4a) Look at Map 1 on page 29. What does it show us? What is this dark part here showing? (Point to South Western Cape)
What is this dark part here? (Point to Natal area)
What is this light part here? (Point to Central Cape area)
What do these show? (Point to rain-bearing (winter) arrows)
- b) How did you work out your answers?
- 5a) Look at the pictures at the bottom of page 29.
What are they?
What do they show?
What are the thick black lines?
- b) Tell about what the picture on the left shows.
When does Cape Town get most of its rain?
In which month does Mossel Bay get the least rain?
How much rain falls in that month?
- 6a) Look at the pictures at the top of page 30.
When is the rainy season? (Summer or winter?)
- b) Which rainfall zone is Durban in?

- 7a) Look at the map on page 31.
What does it show?
- b) Name one area which has more than 1000 millimetres of rain per year.
- c) How much rain falls in this area per year? (Point to Bophuthatswana region)
- d) How much rain falls in East London per year?
- e) How much rain falls in Port Nolloth per year?

Readers now close their books and answer these questions

- 1. What are the important things this passage tells us?
- 2. What does the passage tell about thunderstorms?
- 3. What does the passage tell about the escarpment?
- 4. What does the passage tell about winds?
- 5. What does the passage tell about drought?
- 6. What does the passage tell about deserts?
- 7. What does the passage tell about the sea/oceans?
- 8. What does the passage tell about rainfall zones?

STRUCTURED INTERVIEW 1, PART 2 (LEVEL TWO)

Testing the interview schedule: The readability and comprehensibility of textbooks for Std 3 teachers.

Read Passage 1

1. Read the second paragraph on page 65.
Who needs raw materials like wood, water, coal and iron?
2. Read the first paragraph on page 67.
When was gold first discovered?
(Would you say 50, 100, 150 or 200 years ago?)
3. Read the last paragraph on page 67.
What does "money coming in" in the last sentence mean?
Where is it coming from?
4. Close your books and answer this question:
What are the two most important things the passage tells us?

Read Passage 2

1. Read the title and the first paragraph on page 24.
(What is space?)
 - a) Where does space begin and where does it end?
 - b) Are there people in space?
 - c) Have there ever been people in space?
 - d) How did they get there?
 - e) Who were they?
2.
 - a) Is a relief, a map?
 - b) What does a relief tell you, that a map does not tell you?
(If answer is: Where mountains are; then:
But an ordinary map tells you where mountains are. (Show a map with name, not gradation (p 33)).
So, what is the difference?
 - c) What happens to rain when it falls on:
 - the plateau
 - the escarpment
 - the plateau slopes
3. Read paragraph a) on page 25. It tells of the similarity between the relief of South Africa and a saucer. (Give interviewees a saucer) Can you place this saucer on the table to illustrate the similarity between it and the relief of South Africa? Where is the base of the saucer?

4. a) Read paragraph c, page 26.
If I stand at the bottom of Mont-aux-Sources and I want to climb to the top of the mountain, will I have to climb 3480 metres to get to the top?
- b) Read the last sentence of the second paragraph.
The Nuweveld, Stormberg, Sneeuberg and the Drakensberg are only a few what?
5. Read paragraph e) on page 27.
Are the Magaliesberg, Waterberg, Soutpansberg and the Witwatersrand part of the plateau?
6. Look at Figure 27 and read paragraphs d) and f) on pages 26 and 27. Now cover Figure 27 and read paragraphs d) and f) and point out (on model):
 - the plateau slopes (where they start and where they end)
 - the coastal plain (where it begins and ends)
 - the escarpment (where it begins and ends)
 - the plateau (where it begins and where it ends)as instructed by the text.
7. Close your books. What would you say are the two most important things the passage tells us?

Read Passage 3

1. What is the difference between a thunderstorm and a rainstorm?
2. What is the difference between a desert and a drought?
3. Look at the model of the relief of South Africa (provided).
(Point to positions of De Aar and East London)
Which town gets the most rain?
Can you say why?
4. Is this possible in areas where there are thunderstorms?
(Explain your answer)
There are two mealie farms next to each other. On one farm the mealies are green and growing well. On the other farm next door, the mealies are dry and some are dead.
5. Close your books.
What would you say are the two most important things the passage tells us?

STRUCTURED INTERVIEW 1, PART 2: FINAL VERSION

The readability and comprehensibility of geography textbooks for Std 3 teachers.

Questions on Passage 1.

Questions to be answered before reading the passage:

Pre-reading Questions

Establishing background knowledge

1. Do you know what minerals are?
Tell me what you know about minerals.
2. Do you know what gold is?
Tell me what you know about gold.
3. Where does gold come from?
4. What is a mine?
Tell me what you know about a mine or mines.
5. Have you ever seen a mine?
What part of a mine have you seen? (Did you see?)
Look at the picture on page 66.
Does this picture show the part of a mine that you have seen?
Can you show me the part in this picture?
What is it called?
6. Do you know where gold is mined in South Africa?
Can you give me any details on where it is mined in South Africa?

Text-Interaction Questions

Questions to be asked after a thorough reading of the passage

1. Look at page 65. (Point out the word "minerals")
Do you know what minerals are now?
Can you give me examples of minerals in this passage?
2. Read the second paragraph on page 65.
Who needs raw materials like wood, water, coal and iron?
3. Look at page 66. (Point to the word "arc" in text.)
Do you know what this word means?
Read the sentence and tell me what you think it means.
Can you show me what an arc looks like?

4. This passage says that Figure 53 shows you where the gold is mined.
Where is Figure 53?
Can you show me the place on the map where gold is mined?
How did you find it? (What helped you to find it?)
5. Read the first paragraph on page 67.
When was gold first discovered?
(Would you say 50, 100, 150, or 200 years ago?)
6. Read the first paragraph on page 67. (After reading, point to the expression - "the town had grown out of the veld")
Do you know what this expression means?
Can you explain what you think happens when a town grows out of the veld?
7. Look at the picture on page 66. What is this a picture of?
What do you think this green part is? (Point to main gold reef.)
What do you think this other green part is? (Point to secondary gold reef.)
What do you think this is? (Point to the headgear.)
What do you think these white parts are? (Point to passages/tunnels.)
8. What did you do to find out what the things in the picture were?
9. Look at page 67. (Point to "these problems" in the last line of paragraph three.)
What do you think these problems are? (You can read the page if you want to and then tell me.)
- 10a. Read the last paragraph on page 67.
Can you think of a title or a heading for this paragraph?
- b. Read the last paragraph on page 67.
What does "money coming in" in the last sentence mean?
Where is it coming from?
11. What does Figure 55 show us?
How does it show us this?

Post-Reading Questions

Readers now close their books and answer these questions

1. What are the two most important things the passage tells us?
2. What does it tell us about minerals.
3. Did the passage tell us what is made with gold?
4. What did the passage tell about mines in South Africa?
5. What are the most serious problems that South African mining engineers have to solve?

Questions on Passage 2

Pre-Reading Questions

Questions to be asked before reading the passage (Background knowledge and vocabulary)

1. Do you know what a satellite or a spaceship is?
What can you tell me about a satellite or a spaceship?
2. Do you know what a plateau is?
What can you tell me about a plateau?
3. Do you know what a slope is?
What can you tell me about a slope?
4. What is a mountain range?
Can you tell me or show me what it looks like?
5. What is the relief of a country?

Text-interaction questions

Questions to be asked after reading the text

1. Look at page 24. (Point to the word "space" in the heading.)
What does this word mean in this sentence?
2. Read the title and the first paragraph on page 24.
 - a) Where does space begin and where does it end?
 - b) Are there people in space?
 - c) Have there ever been people in space?
 - d) How did they get there?
 - e) Who were they?
3. (Point to the word "relief" in the fourth line of the first paragraph) What does this word tell us about in this paragraph?
4.
 - a) Is a relief, a map?
 - b) What does a relief tell you that a map does not tell you?
(If answer is:
Where mountains are; then: But an ordinary map tells you where mountains are (Show a map with name, not gradation (p 33)). So, what is the difference?
 - c) What happens to rain when it falls on:
 - the plateau
 - the escarpment
 - the plateau slopes
5. Read the last sentence on page 24. What are the following points we are supposed to note?
Where will we find them?

6. Read paragraph a) on page 25. It tells of the similarity between the relief of South Africa and a saucer. (Give interviewees a saucer) Can you place this saucer on the table to illustrate the similarity between it and the relief of South Africa? Where is the base of the saucer?
7. Look at Figure 26. What is it a picture of?
Can you show me the line of mountains in this picture?
- 8a. Read paragraph c, page 26.
If I stand at the bottom of Mont-aux-Sources and I want to climb to the top of the mountain, will I have to climb 3480 metres to get to the top?
- b. Read the last sentence of the second paragraph.
The Nuweveld, Stormberg, Sneeuberg and the Drakensberg are only a few what?
- c. Read the passage about the escarpment on page 26. What does this mean? (Point to "many mountain ranges go to make up the escarpment")
9. Read paragraph e) on page 27.
Are the Magaliesberg, Waterberg, Soutpansberg and the Witwatersrand part of the plateau?
10. Look at Figure 27 and read paragraphs d) and f) on pages 26 and 27. Now cover Figure 27 and read paragraph d) and f) and point out (on model):
 - the plateau slopes (where they start and where they end)
 - the coastal plain (where it begins and ends)
 - the escarpment (where it begins and ends)
 - the plateau (where it begins and where it ends)
 as instructed by the text.

Post-Reading Questions

Readers now close their books and answer these questions

1. What are the most important things that the passage tells about the relief of South Africa?
2. What does the passage tell about what South Africa looks like from space?
3. What does the passage tell about the Witwatersrand?

Questions on Passage 3.

Pre-reading questions

Questions to be answered before reading the passage (Background knowledge)

1. What is a climate?
2. What is a drought?
3. What is a climatic zone?
4. What is a rain-bearing wind?
Tell what you know about rain-bearing winds in South Africa?

Text-interaction questions

Questions to be asked after reading the passage

1. Look at page 28. (Point at "spells" (of cool, rainy weather) in first paragraph). Do you know what this word means?
Say in your own words what you think it means.
2. Can you say what rain-bearing winds are now?
3. What is the difference between a thunderstorm and a rainstorm?
4. Why is there a desert along the west coast of southern Africa?
5. What is the difference between a desert and a drought?
6. Look at the model of the relief of South Africa (provided).
(Point to positions of De Aar and East London)
Which town gets the most rain?
Can you say why?
7. Look at map 1 on page 29. What does it show us? What does this dark part here show? (Point to South Western Cape)
What is this dark part here? (Point to Natal area)
What is this light part here? (Point to Central Cape area)
What do these show? (Point to rain-bearing (winter) arrows)
- 8a. Look at the pictures at the bottom of page 29.
What are they?
What do they show?
What are the thick black lines?

b. Tell about what the picture on the left shows.
When does Cape Town get most of its rain?
In which month does Mossel Bay get the least rain?
How much rain falls in that month?
- 9a. Look at the pictures at the top of page 30.
When is the rainy season in each picture? (Summer or winter?)

- b. Which rainfall zone is Durban in?
How did you work out your answer?
- 10a. Look at the map on page 31.
What does it show?
- b. Name one area which has more than 1000 millimetres of rain per year.
- c. How much rain falls in this area per year? (Point to Bophuthatswana region)
- d. How much rain falls in East London per year?

Post-reading questions

Readers now close their books and answer the questions

1. What are the two most important things this passage tells us?
2. Is this possible in areas where there are thunderstorms?
(Explain your answer)
There are two mealie farms next to each other. On one farm the mealies are green and growing well. On the other farm next door, the mealies are dry and some are dead.
3. What do you think is the main difference between:
 - a map showing rainfall zones?
 - a map showing average annual rainfall?

TRANSCRIPT 1

STRUCTURED INTERVIEW 1, PART 1:

TEACHING AND LEARNING GEOGRAPHY IN STD3

Codes

Grahamstown interview: Two teachers	G1 and G2
Ciskei interview: Two teachers	C1 and C2
Transkei interview: Three teachers and one principal	TN TN1 TP TP1
Port Elizabeth: Two teachers	PE1 and PE2

Question 1:

How do you feel your pupils are coping with geography? (Do they find it easy or difficult?)

- G1 Pupils are finding a big jump from std 2 to std 3..... its a totally different world..... the language is too much for them..... its much advanced.
- G2 In std 2 they do local geography, something they know, something about Grahamstown and now in std 3 you start telling them about something new.
- G1 Very difficult, terms are a bit big for them. Writing is a problem, they cannot write down points from the board. All in all there is a big jump from std 2 to 3. There is a big gap which we don't know how to close it.
- PE1 They find it difficult because the medium of instruction is new to them.
- PE2 They find it difficult. If you are passing on a message to them, when you are conducting a lesson, you find that you have to translate it into Xhosa. And it takes quite a long time to teach a lesson eh in so much that you don't even finish eh that particular aspect in that 30 minutes. So it needs a lot of time and eh shortage of textbooks. You'll find another school using another textbook and another school is using another kind.

Question to PE1

Do you find the same problem - do you also have to teach your children in Xhosa?

- PE1 Yes. If I teach a lesson I must translate in in Xhosa because they do not understand English. Even if it is simple English. Since it is a transition class, it is too difficult for them. I may take only a few points at a time so that they may be clear because they may become confused. So it may take a week teaching only few things in a lesson.
- C1 For the first quarter that is something too difficult that is a transition stage. Even when you prepare the work, you have the layout work for so many weeks and you find that you take more than that time that you prepared for it. So you find that its delaying now because they are just confusing. Really that is difficult for the first two quarters. A lot of books.
- TN1 Children like it but we do not specialize, we teach eight subjects. If we could specialize the children could have more change for enjoying geography because geography has this practical side
- TP1 As the children are in std 3, there is a lot that is new, because the children have done a little in std 2
- They should know that what is geography it is the study of the earth, unlike history. Children have no problems in learning directions (the first lesson in std 3).
- TP I as a principal in going round the things I think are the most problems for teacher and pupil, you will find that the teacher is not a specialist of geography and she does not go well with the lesson provided.
- TP Apart from the fact that these subjects are all introduced in English, but the std 3 child is not yet ready because it was not much in std 2. We are missing both Xhosa and English in std 2. Still in std 3, I do feel there is a problem. That it must be done solely in English - aha - I don't feel that can be possible.
- TN It is difficult for children to understand when they have not seen things: a compass. It is only easy to some children who have travelled. In fact our schools are not real classes, we don't have the equipment.

Question 2a

Can you say what they find difficult/easy?

- G1 Textbooks we have now is not of any value to the children as a matter of fact Geography Can be Fun. I never gave them (the textbooks) to read because I find that

- G2 Newspaper geography. Never read newspaper so this is far advanced for them.
- G1&2 There is not really anything they find easy.
- G2 75% of the work they do is note copying ... maybe ...
- G1 10% cope and about 80% are not coping in the class.
- C1 Language, (new words), big new words, you have to try and simplify as much as you can in so much, that you take the mother-tongue, so that they can understand it. If you can't touch mother tongue, it seems they will open their eyes out, don't understand it and you have to repeat it time and again.
- C2 To add more from std 2 most of the time they use environment studies. So environment studies, things that they are familiar to them, so now its a new thing that they are talking about - South Africa, neighbouring states, Limpopo river they have got no idea of a river. So must start from telling them about a river, where does a river start, where it comes from all these sort of things.
- C1 More than the language, I'm sure its the way they that they have written the textbook, they must simplify it. In fact, that it is something that can be understandable, we can't even give the child to go and read at home. They won't know the word unless you start here in the class and say go and read again and check it. What we have said about it, maybe they won't even read, they just see the pictures only and then close their books.

So you say they don't read?

- C1 No. They don't move.
- TN1 Std 4 and 3 we will stick onto the syllabus. The first part of the syllabus. The physical geography is difficult, it means you, the teacher have to teach, sometimes you just pass over it - it is not thoroughly mastered.

Can you say anything about why you think they find it difficult?

- TN1&P Yes, its the language, the language of the book is too difficult for them.
- TP And I think the teachers have to make some notes, simplify the language in short form, point forms, so to make it easy for the child and not make as we are supposed to and not let these children to read textbooks. I don't think they can gain anything from these textbooks **on their own**, unless the teacher has her own simple notes.
- TN1 Yes, the textbooks are somewhat difficult - the language - but the danger is in their terminology, geography has its own terminology. If you are going to say it rotates you must give

the child "rotates" - the correct terminology as far as back as std 3 level, because in std 7 the child is told rotate mean; it means the teacher must have (teacher should be strong in English, improve my English and have) her own reference and dictionary and to drive the meaning home - rotation, precipitation - you must be exact, we ourselves must be exact.

Is some of the terminology a bit difficult for the teachers as well?

TN1P1 No, the children - it means you have to explain fully, you know our schools have no dictionaries. Everything depends upon the language, language, language.

Do you all agree with that?

TP Yes, the real problem is language, language, language terminologies - especially in std 3.

Anyone like to add to that?

TN Yes, the teacher must be sure of what she is teaching (these physical maps and climatological maps) she must be clear since it is confusing. It is a very wide subject, you have climates, builds of a country, rivers and its territories - so it is a very big work of teacher and pupil.

What did the pupils find easy?

TN1 They like map work and map reading.

TP1& Yes. It is not that the subject is difficult it is the language.

All: The content is not the problem. It is the language of at least these textbooks could write the textbooks in a simpler way, but for them in std 3 with those names, that rotates, that language, those terminologies to be there, but the sentences simple for the child, they would like it.

Question 2b

Can your pupils read the geography textbooks on their own?

G1&2 No, never, they can't read.

G2 They cannot even write and copy properly. A 35 minutes period is too short because even the 5 points on the board - they will not save time to copy them off the board.

PE1 They can't read it because the terminology used in that textbook is very difficult for them. There are words like relief,

hemisphere, rotation. They are very, very difficult even to explain.

PE2 Yes, they also experience the same.

C1&C2 No, they can't, no they can't.

Is there anything you'd like to say about that?

C1 Its because of the transition stage, I'm sure. They are not familiar with the language.

TP&N2 They can never in std 3. But they can read in std 4, but not with understanding. They can read those words because they are doing reading in English, but we must bear in mind that they are not reading with understanding.

TP When we say they cannot read its because they cannot **understand** - not that they cannot read the words written.

In the std 3 class can they read the books on their own?

TP1 If the teacher has first introduced the lesson the pupils can go to their textbooks.

TP But at the same time you cannot say turn to page so and so and read.

TN2 No, you cannot, we don't do that. They cannot at the std 2 stage.

Question 2c

Can they make notes from the textbooks on their own?

G1&2 No, oh never, never. Pupils have difficulty even copy a few points on the board.

PE1 No, they usually can't.

PE2 Except I give them notes they can't.

C1 No, I don't think - only they are on the board.

C1 Even the notes on the board, they just read not with understanding.

C2 Or copy the wrong words from the board.

C1 We don't even give them the textbooks back home unless its a drawing - but this is not easy. Maybe they are lazy, I don't know.

TP We are also upgrading English but we have a problem with kids from other schools, we've got a mixture, those from outside are much lower than others.

Question 2d

Can they do the tasks in the textbook?

G1 No, no they can't.

G2 Even if you have tried to show them.

Do you have any thoughts about why they can't do them?

G1 In std 2 its, what do you call it, parrot work. You know if you go there and observe them they just memorise, you think that they know, they just memorize, but they don't understand what they are memorizing in std 2. And they read except that they will memorize something.

G2 I'm sure they don't see the words - I don't know how to put it".

G1 Book is too formal, difficult terminology and the child cannot partake in the book, nothing is of interest.

G2 They don't even try to read it because they don't understand.

PE2 As homework or in the classroom?

PE1 You must first help them.

PE2 They are very much unable to do these. Another reason that makes them unable to do these tasks is that they are very much used to the written work that is done on the blackboard. They are not able to do exercises that are in the textbook.

PE1 Yes.

PE2 Except you write the questions in the blackboard.

C1 We usually do it in our classes, but they can't do it on their own. Even if you tell them to.

C2 Go and do it, you will find they are wrong.

C1 You have to do it first orally. If you didn't do it, they don't know.

All Yes, they can because that is revision.

Question 3a and b

Which parts of the syllabus would you say the pupils find most difficult/easy?

G1&2 For the child the whole syllabus is difficult if it is dealt with as the textbook does - but the teacher has to go and simplify everything, which takes time.

G1 You simplify using vernacular to explain and then when you have tests you have to do conduct it in English, now you have frustrations because you get zeros, ones and so on.

G2 Horrible spelling which you cannot read.

G1 Explaining direction ... you know, to say the world is round and then its in space and the water envelops the world globe ... its sort of a phenomena to them ... they can't perceive what is going on.

G2 Those Plateaus and the relief

G1 I don't know how to comment because, eh, I think its tantamount of the language problem there and they don't see it. If you make models they better understand it, but if you put it in language they don't see it.

G2 It is difficult for them to explain what you have been showing them.

G1 Day and night.

The concept I think its advanced to them what I'm trying to say is that their textbooks is no help to us, to help the children, so you have to be more specific about your lesson, practical - meaning that no follow up on their own.

G2 You've got to simplify this textbook in your own and they cannot get something out of this textbook.

PE1 The map reading and that part in day and night.

PE2 Natural vegetation. You know, eh, more of its part of natural vegetation should be done practically. You know, eh, excursions. We are unable to do that because of financial problems so they don't see these things. And the maps. They are not provided with Atlases. So you will get 1 or 2 of the children that have Atlases.

PE1 And they can't draw.

C1 Some lessons are not even familiar to them, weather charts, newspaper geography - so they don't know. If they are familiar with a cow you can teach it, but it depends if they are familiar.

Sugar, they don't know where it comes from, they are not familiar, but language is the problem.

- C1 Let's say if you are teaching the manufacturing industries, when they didn't even come across to that industry, so now you are fumbling, even the teacher, so you are taking just is written on the book. They didn't see it before, so you try by all means to take something, you talk about raw materials, electricity. Well some homes there are electricity but they don't know some of the things.
- C2 If you can get a class to take them to the factories and show them it would be better.
- C1 Even in the mapwork, the range of mountains they are even confusing, which one, when you draw maps and say which one is this one, they won't know because they are all in that line closer to that one. Confusing to take the Stonberg to the Nuweveld which is the first one and so on, if its something, too much in one map. In rivers we have got only 7, some we neglect them, I'm sure when they go to std 4 they know the 7 rivers, then they'll add on to what they have.
- C2 Even the time, only 2 periods for geography per week, you can't only take 30 minutes, it is too small.

Do you feel that the whole syllabus is difficult because of the language problem?

C1&2 Yes.

All Physical geography is the main problem area and if it is not properly mastered it weakens the whole geography.

What are the most easy parts of the syllabus?

PE1 Human activities, mining, fishing, transport and so on

PE2 Yes, the same and also motor industry and firms like Cadbury and Firestone, they know them.

N2 Map reading and weather charts.

Question 4

How do pupils cope with the English of the textbooks? (vocabulary etc)?

G1 It is a language problem, its a long process and the syllabus seems to be long, but its not long - because of problems you can't move fast, you are always behind, you can't finish the syllabus.

English in the textbooks

PE1&2 Yes, it is a problem - shapes, escarpment hemisphere - they struggle.

C1 Well, some parts are understandable, but other parts are difficult and you have to simplify it, that's why we can't give them the textbooks to go and read on their own.

So you don't give them the textbooks?

C1 No.

C2 Unless, they are doing drawings, but they struggle.

TN1 Language in textbooks needs some modification to drive the meanings home.

Question 5

Do they understand the maps and graphs in the textbook? (Can they answer questions about maps and graphs?)

G1 Not really from the textbook; but if you put it on the board, they will follow.

Graphs etc

PE2 They don't do them in std 3, in our textbooks.

PE1 No, they can't do them.

C1&2 Unless you are making a chart or a game where you can drill them. But if they look in the textbooks ...

C1 No. For example, this map of the relief of SA, many things are included there, so it must be separated. If river, it must be the rivers only, or the mountains only.

If you ask the children a question about this map in the book - the relief of SA, will they be able to answer?

C2 Well some, unless you have drilled it enough.

So you need to drill them first?

Yes.

C1 That's why we talk about time, is not enough.

C1 We work with them for 2 periods a week, when you come the next week, you have to teach again more than to revise it, because they didn't get enough chance because we are rushing to the other lesson so that you can balance the work.

TP1 They cannot interpret a graph, as it was said they find difficulty drawing maps, so they must use tracing paper. They must first know the colours of the map.

TN1 The scale drawing is one thing we (teachers) have been motivated. The scale, how to size a map that's why they don't know how to draw maps.

Question 6 and 7

Do you find it easy to teach geography? Can you say why? What do you find difficult/easy?

G2 Not easy for us to teach geography, because we haven't got the necessary apparatus. We haven't got instruments to show them.

G1 Lessons are not so much interesting through a lack of apparatus. And we have the language problem and then, you can't supplement the lessons from ...the textbook because the textbook is not there; the textbook we have is beyond the pupils understanding.

PE1 I find it difficult because I didn't specialize in geography. I left geography in std 8.

PE2 Well, no, I don't find it difficult, except that as I have mentioned we have got a shortage of textbooks, and these different textbooks... eg. I have been using **Action Geography** and I find that textbook hasn't got something, you know, its just a lot of exercises, there's not so much content there. Just a lot of exercises. They recommended **Geography Can be Fun** but I couldn't get it. So we have a shortage of textbooks. And another thing - I think schools should be provided with, eh, so called slide projectors and eh, transport should be available for excursions.

C2 If there is not this problem of kids - no difficulty, they mix the subjects with other subjects.
If we can get apparatus and extend the time.

C2 Or if not so, they must shorten the book because its too wide, we are rushing the syllabus up to September, then you can't finish up.

C2 And the work is being more advanced to them because its not geography itself.

C1 Even myself I can't say I can teach geography better than other subjects, because 8 subjects, they are with me. So that's why I say I must share the time. The periods for that day must be fixed up otherwise you will be against time, because the book is too wide.

C1 50 kiddies in a class.

C2 76 kiddies in a class.

C1&2 And you must check each child's books, some you can get them at September, you didn't get a chance to look at his/her book because of large number of the class.

So there are quite a lot of problems that you experience as teachers?

Yes.

C2 If this subject teaching can be done, at least.

C1 And a quarter for the work because the inspectors and the principals they can say you have only a quarter of the work, for a day or a week and you rush but they don't know the kiddies in the class, how they understand what you are teaching, so you repeat it. Time and again, so they can try by all methods to be clear, but they (inspectors) so many periods per week, so many things per this and that, but you don't have a chance for that - there are even many of them. Many children and the periods are few for the 8 subjects.

TP1 It is not difficult to teach geography, it depends on how you like it as a teacher. Otherwise there is nothing difficult in teaching it. You get difficulties in your children, how do they cope, but if you like geography there is nothing difficult in it.

TN1 I want to say geography can be difficult, it depends on your alertness, it means you've got to draw a lot eg: if I'm going to teach Africa - I must have a lot of maps - one map for physical Africa; map for states; map for climate; map for population; map for vegetation. It means the teacher must be able, by herself to drive the meaning home by drawing different types of maps - not just put everything in one map - a map for each step.

Depends on the attention of the teacher - some are not geographers!

TN2 I don't like geography, I only like science and history.

Is geography teaching difficult for you?

TN2 Yes, and here in this lesson of the build of SA, I don't understand this because they talk about the mountains and what else, rivers, coastal plains and...

So geography is not really your subject and you are teaching it and you find that confusing?

Yes.

Question 8

How do you cope with the problems you experience? How do the difficulties influence the methods you use to teach geography?

G1 It's better when you can use activities and objects, there is not too much language.

G2 Using activities, forming some activities involving the pupils to help them to understand.

G1 Day/ night, problem of the inclination of the earth is a really difficult one to explain.

PE2M I should think each and every school has got a head of each subject e.g. head of geography and his teacher. So if you do come across a certain problem you just come together with your head and consult him.

How do the problems affect your teaching methods?

PE1F If we had facilities etc, it would help. The problem is I like geography but I experience some problems because of the shortage of textbooks.

PE1F If I can get these facilities, yes. Well, I can't see (this happening) because it has been our problem of years - complaining about the facilities but we do not get.

C1 We try even to group them so they take part of you, so by the time the leaders are dealing with the others, the dull ones, and try by all means to help them.

C2 Or else you take the leaders to help the dull ones, maybe they will understand or by doing competitions to motivate them, but there is no time!

How does the time problem affect your methods?

TN1 Std 3 and 4 teachers at our school at the end of the year we usually have a hand over. The chapters that are not thoroughly mastered, she reports them to me so that, a certain chapter, I did not thoroughly master it, so that is my emphasis in std 4. I would first of all dwell on the chapter not thoroughly mastered and sometimes we communicate about how things are done.

Here is a teacher who doesn't like geography, how do you cope with that problem?

TN2 I make them have it.

How do you do that?

TN2 (No reply)

Question 9

Do you find that you are able to teach pupils in English most of the time?

G2 No, no, because they don't understand English, you have to use the mother tongue to explain.

How much of the time do you have to use the mother-tongue?

G1 I would say average percentage proportion of time. I would say 75% you use the vernacular. We have been told many times to reinforce the official language, say English so that they get used to it, but you find that you are speaking above their heads because they don't understand.

So when you use the vernacular what are you doing?

G1&2 Explaining, and if you explain in the vernacular and then try to explain it again in English, they still don't understand.

PE2 Both, Xhosa and English.

PE1 Both.

PE1 Explain a lot in Xhosa.

PE2 No, I explain in English or both.

C1 It depends on the language in the book, it is too difficult.

Do you find you have to use the mother-tongue?

C1&2 Yes, have to touch it to help them.

C1 Well, the syllabus says you must teach in English, mother tongue is not allowed to be taught in a class. That is why we try to simplify - because you can see children their eyes they just look out.

So you say you spend most of the time teaching in English and you do some explanation in mother tongue?

How much time do you spend using the mother-tongue to help them understand?

Introduction - explain in mother tongue, 30 minutes for lesson, 20 minutes to teach in English, 10 minutes mother tongue.

TN1 Yes, because the medium of instruction is English, they understand English.

TP Because here in Transkei they, start being taught in English in std 2, so they are used now.

So you all find that you can teach through the medium if English in std 3?

Yes.

What about in std 2? What happens in std 2? First year of English medium instruction is it any different there?

TP Not much, even in std 1 because of this Molteno Project & having plays in English from their books.

So even in std 2 you can actually teach them in English?

TN1 Yes. Especially if the teacher sticks onto English. What we usually talk. The teacher, speak English to your children, child are parrots.

Question 10a

Can you describe briefly the steps that you normally follow in geography lessons? (What happens in your geography lessons normally - the methods you use, how much of the time you have to help pupils by explaining etc, how much time they work on their own and so on.)

G2 I'm finding 30 minutes. I'm doing for a period it's not necessary (enough?). You've got to show them what you are telling them; have to take another period. Meaning that you have got to do 1 lesson for 3 to 4 days, doing pictures and making notes in my classroom. I leave the notes on the board for 1 to 2 weeks to be sure that all children get a chance.

G1 Lessons link up. Ask questions about the previous lesson - maybe 2 or 3. Start introducing the lesson in English - but you can't go through in 30 minutes, you have to cut the lesson. And when you ask questions high up you find they are just looking at you - then you try to explain now in vernacular, that takes another time, thats our problem.

Then what happens after that (after +- 20 minutes)?

G1 Then you have to give them a few lines on the board because they can't go to the textbook, that's where another struggle. In 30 minutes wont do to write. They copy them, but the time is up, so you have to carry on in the next lesson or next day. When they have to copy a map with the names of the provinces on it ... as they look at it there, they will write say, Transvaal; they will put it in Zambia.

G2 They can't, they can't, its just there on the board, we need a textbook with big maps for them to colour to get used to the position.

What do they do after they have copied the notes into their books?

G2 Go around and check them.

And when it comes to writing tests?

G2 Sort of revising, asking questions and when it comes to the test, some of them will be able to answer them.

Do the children understand the notes they have in their books?

G1 After a struggle. You have to read with them time and again.

So you read the notes over and over with them?

G2 Yes and then ask them orally and then they write the answers.

You said some of them can answer the questions, what about the others?

G1 This is one of our problems, the big numbers, we can't do individual teaching because we are faced with 60-65 in a class. You will find that about 9 of them get the answers, what about the rest? And they don't normally cope. Even with this grouping, you will find that there is this poor group which cannot do a thing.

PE2M To conduct a lesson, so first you, eh, introduction, presentation conclusion.

How do the problems discussed influence your plans?

PE2M Because of the explanation that you must do, trying to explain that particular aspect in Xhosa, eh, that takes quite a long time, so much that you'll find you don't even finish that lesson. So I can say it has got eh, it also affects plans. So now I better change this methods and use other one.

PE1 Yes.

C1&2 Introduction, 1) Story telling in mother tongue if it is a difficult lesson.
2) Explain difficult words.
3) Lesson in English teaching and explaining.
4) Classwork.

How much of the teaching time do you have to explain things to them?

30 minutes to 1 hour, I can do all the things in the lesson. Sometimes we don't follow the timetable, we take time from other subjects eg, lesson on Africa.

TP1 Introduce by referring to the known. First let them know their surrounding, their Transkei, then Africa, its build and so on. Teach the lesson, write the questions and question them to see that they understand.

TN1 The same. 5 minutes revision and find out how much can they contribute. 15 minutes introduction, last 5 minutes testing how much did they grasp.

How much time do they spend on their own in groups etc?

TP1 15 minutes they do their own.

TN1 Normally we even exceed that 30 minutes, because if they are going to do classwork, we even exceed that 30 minutes.

Question 10b

How does this compare with the way you would like to teach your lessons?

G1 Its very different. If pupils would sort of master the medium, that is English, 50% of your problems are gone. Now if the textbooks can be of interest, now our normal teaching can go on very smooth with understanding. So our main 2 problems are the language problems and the textbooks.

G1 Would your steps be different if you could solve these problems. Yes, after introducing the lesson without the textbook to take it home, give it the textbook to take it home, read it, eh, so sort of solid supplementary.

G2 If we can have the necessary equipment it will be easier for the children. It is difficult for us because we have to buy each and every equipment ourselves.

PE2M The steps I told you.

C1&2 We would carry on using the group method.

T This is the way, no changes.

Question 11

What are your feelings about the prescribed textbooks? Do you ever have any difficulty understanding the language, vocabulary, or any of the content in the textbooks?

G1 No, this **Geography Can be Fun**, is just simple for the teacher to use for his own preparation. Its good in every respect.

You find the language, vocabulary and content alright?

G1&2 Yes, no its okay.

PE2 Textbooks cause confusion because **Geography Can be Fun** and **Active Geography** and you want to teach something, you'll find there is just a lot of exercises. So that means you have to go out and look for it. You don't get it in the textbook so you have to find it for yourself. Its very much better if you get something to read and thereafter you get the exercises to see whether you have grasped that particular aspect. Thereafter you go out for an excursion.

PE1 No my textbook is not difficult for me, it is difficult for the children. The problem is the syllabus is too long for std 3.

PE2 Yes.

PE1 The last chapters we don't even touch them, so we don't cover the syllabus in std 3.

Is that because they don't understand the English and you have to take the lesson slowly?

PE1 You have to take the lesson slowly because you are going to explain it.

PE2 Yes. It is too long. You know when you are doing the second quarter's work you find out that you are not even - that they don't even understand the 1st quarter's work and you are going to the fourth quarter.

PE1 And they see no difference between history and geography. It is the same to them.

C2 If they can decrease the work.

C1 A quarter of the work, it is too much for a kid to know.

And is the vocabulary in the textbook difficult for you?

C1&2 Yes, sometimes you have to use the dictionary to simplify it.

The language?

C1&2 We as teachers can read it, that is why we make notes for them.

So you as teachers find that you can read it without any problem. Is simplifying it for the children the problem?

C1&2 Yes, its that work to simplify it for them.

TP1 These are made for the teacher, not the child. The teacher must compile notes for the children. So the teacher should have as many as she can.

Do you have any problems, with the vocabulary, language etc?

All No.

Question 12a and b

Do you have any difficulty understanding the maps, graphs, illustrations, etc in the textbooks?

Can you say what you find difficult about them?

G1 I think this aerial map on this ... where is it ... this one p10 is not, well, clear (air photograph of part of Barbeton) for the children you can't even give them this.

As far as you the teachers are concerned, are there any difficulties?

G1 The purpose for the books is not for the teacher, it is for the children, so it doesn't serve its own purpose.

C1&2 No, we can understand, it is fine.

You say you don't find anything difficult?

C1&2 Not at all.

TN&TP No.

Question 12c

Are maps, graphs etc difficult for teachers?

PE2 They are easy.

PE1 They are not easy. The placing of rivers and mountains. I don't know which way to place them so that they can understand them.

Do you have problems with some of the maps?

C1 Yes, even the teacher is confused, even yourself.

Give examples:

C2 There is too much information in maps. Sometimes we have difficulties with maps.

C1 Even the colouring show the colour it is, if it must be green, the book, must show green. If it is brown, it must show brown. If they have colours, the colours attract them.

Teachers, do you have any difficulties?

C2 We are being confused take for instance, if you are at the relief of SA, we don't know what to take first, rivers or mountains

C1 And even for these things, the escarpment, a flat areas and plateau, even to us it is just written ... this is a plateau... how? We don't know how.

Rest: No.

Question 13

Would you like to comment on the problems of teaching geography in standard three?

G2 There is this changing of subject teachers, teachers are moved around and teachers do not get sent on the right in-service courses. Sometimes HOD's go on the courses instead of the teachers. We want more courses.

What would you hope to get out of the courses?

G1 Approaches.

G2 On change - if I am a geography teacher I must not be moved to other subjects. Teachers are moved around indiscriminately. I specialized in geography, but taught Afrikaans for 7 years. I taught geography from 1989.

How does this affect teaching?

G1 This year I learn as I go along, next year I will be better, but I will be moved so it will happen again. I must also teach 3, 4 and 5 so I can get the flow of the whole thing.

PE No comments.

C1 We need an extension of time to be able to have excursions to see all over around the country, the low-lying parts, the coastal area. They must see it.

Do you get the opportunity to do this?

C2 No, we don't have that provision, unless it is around the school.

TN We need atlases and globes. We don't have them, perhaps there is one globe in the school which I did not get from the department.

TP There is a serious shortage of equipment, I'm sure even teachers who don't like geography would like it if they could have the equipment.

TRANSCRIPT 2

STRUCTURED INTERVIEW 1, PART 2

THE READABILITY AND COMPREHENSIBILITY OF GEOGRAPHY TEXTBOOKS FOR STD 3 TEACHERS.

Pre-reading questions - Passage 1.

1. Do you know what minerals are?
Tell me what you know about minerals.

G1&2 Yes.

G1 They are dug underground.

G2 They are precious stones dug underground and they are used for making a certain valuable ... money ...

G1 ... and other piping.

C2 Anything that can come from under the ground.

C1 Yes.

T1 Yes, minerals are things that are found under the ground or on the earth.

T2 Agreed.

PE1 Yes.

PE2 Is it not production of soil?

PE1 I'll say minerals are important because a country by having minerals, that means it is being recognized by other countries because it can expect some more of its minerals.

2. Do you know what gold is?
Tell me what you know about gold

G2 No, I've never seen gold. I know that gold worth more money.

G1 Jewels made from gold.

G2 Its dug out of mines.

G1 Refined in factories.

C1 You get it from under the ground and we get other articles out of it like rings and watches.

Anything else?

C2 The mines that have gold are in Johannesburg so we have never seen the real gold.

C1 As a stone.

T1 Yes, gold is used for jewellery - things like rings, earrings etc.

T1 Yes, gold is an expensive stone found underground, places like mines ... there are gold mines so gold is so expensive it is also a mineral.

PE1 Yes.

PE2 We make jewellery.

PE1 Paper money is made from gold. And as gold is important and SA is rich in gold so people from neighbouring states come and work in SA - so it provides employment.

3. Where does gold come from?

- G1&2 Already answered.
C1 Parts of Transvaal, not really sure of the town.
G2 From mines.
F1 Yes, under the ground.
T1&2 Mines under the ground.
PE1 Underground, Transvaal.
PE2 Yes.

**4. What is a mine?
Tell me what you know about a mine or mines.**

- G1 Place where all the earthwork is taking place of getting gold out of the ground.

Tell what you know

- G1 People start digging up until deep down, using some trolleys to get trolleys to get the crude out from underneath using some torches and lamps on their head.
C2 Where the minerals are digged up, so if you go to Transvaal, Johannesburg ... there are men here who go to look for work there ... they go under the ground.
C1 I'm sure when they go underground they use some vehicles to go there.
C2 And the clothes they wear are different from our clothes.
C1 I think its dark underground so they have some lights.
T2 A mine is a place where we get these minerals. We dig these minerals.
T1 Yes, it is where some of the expensive stones are dug from.

What do you know about a mine?

- T1 It is a place where people go down, using a shaft to dig the minerals. There are coal mines and gold mines.
T2 Agreed.
PE1 A place where the minerals are being dug from.
PE2 Yes.

5. Have you ever seen a mine?

- G1 No, I've never seen.
G2 From far away, something on top - I think the shaft.
C1&2 No, not yet, we just read through books about a mine.
T2 No.
T1 No, we don't know what a real mine looks like, we estimate from the books and pictures.
PE1&2 No.

What part of a mine have you seen?
Look at the picture on page 66
Does this picture show the part of a mine that you have seen?
Can you show me the part in this picture? What is it called?

G1 Roughly similar to this, the mine dumps and house structures are what I've seen.

6. Do you know where gold is mined in South Africa?
Can you give me any details on where it is mined in South Africa?

G2 Johannesburg is one.

G1 Only that around Johannesburg.

T1 (Long hesitation) In Transvaal.

T1 Springs, Klerksdorp, Johannesburg.

PE1&2 Transvaal.

PE2 OFS.

Text-Interaction questions (after reading the passage)

1. Look at page 65. (Point out the word "minerals").
Do you know what minerals are now?
Can you give me examples of minerals in this passage?

G2 Diamonds, coal, copper, iron-ore, wood.

C1 Raw materials.

C1 Yes, the things before, like wood you can make something from it.

Can you give some examples?

C1&2 Gold, diamonds, coal, copper and iron ore.

T2 Coal, iron, gold, wood.

T1 Agree.

PE1&2 Water, coal, diamonds, gold.

2. Read the second paragraph on page 65.
Who needs raw materials like wood, water, coal and iron?

G1 Factories, to supply the population.

G2 (Agrees)

C2 Everybody, because we use these raw materials, we use water we can't stay without water and wood.

C1 Even the factories, because we can't make our own things so we buy them to the factories.

T1 People are in need of them.

T2 Agreed.

PE2 South Africa.

PE1 By a country.

3. Look at page 66. (Point to the word "arc" in the text).
Do you know what this word means?
Read the sentence and tell me what you think it means. Can you show me what an arc looks like?

G2 Yes, I think its sort of a shape, a curved shape.

G1 Agreed.

Can you show me what an arc looks like?

Is there another word for it?

G1 Half circle.

G2 Not sure.

C1 Shape like a horseshoe (C-shape).

C2 Type of a mountainous place.

T2 It means the mines which we find from an arc.

What does the word mean?

T2 Golden arc.

T1 I don't know the meaning of this arc.

You are showing me a shape can you describe that shape?

T2 Its like C.

PE1 ... eh.... I don't know whether is this the arc that is in the bible. The bible says that Noah built an arc. But as it is written here, I can get its meaning.

PE2 Is it not a U-shape. It is confusing.

4. This passage says that Figure 53 shows you where the gold is mined. Where is Figure 53?

Can you show me the place on the map where gold is mined? How did you find it? (What helped you to find it?)

G1&2 Page 65.

Can you show me where gold is mined on the map?

G1 This darkish one (pointing to coal area, Heidelberg - Dundee).

G2 Yes.

Name of some of the towns there.

G2 Heidelberg, Vanderbijlpark, Dundee, Belfast.

G1 Carolina, Belfast.

How did you find that, how did you know that was the place to show me? What clues did you use?

G2 It said that it started from the OFS to the Heidelberg (refer to paragraph in text on P66).

G1 Looking at key for first time, doesn't this one show coal?

You feel it shows coal?

G1 This darkish one shows coal.

So what clues are you using now?

G1 The key.

G2 Oh, the key ne? Oh, (looking at the key for the first time) the gold mining is the greenish part. I see, I see now.

How did you get that?

G1 I see the key.

G2 The key, the key - now I'll said the arc is like curved just like a moon curved.

G1 So in other words the gold is Welkom, Vanderbijlpark, Johannesburg.

G2 Yes.

C1&2 Page 65.

Where is gold mined?

C1 Heidelberg.

C2 Vanderbijlpark (pointing to black and green parts) towns named Heidelberg, Vanderbijlpark, Johannesburg and Welkom.

How did you work it out?

C1&2 The indication of the gold mining area (pointing to the key).
(Paging around uncertainly)

T1 What's your question?

Can you show me where figure 53 is?

T2 Page 65, Page 65.

Where on the map is gold mined?

T1 In South Africa.

(Delay 2 minutes)

T2 You want the towns or what?

Just show me the place on the map

T1 Oh, the province.

T2 Here, point to the arc.

T1 Along OFS and in TVL and in South Africa, different places in SA

Okay, can you show me on the map where gold is mined?

T1 (Points and says), there is gold in TVL and there is gold in OFS

Okay, so how did you find it on the map?

What led you to say that?

T1 Since there are mines in SA, especially in TVL and OFS, I know that gold is mined in SA in OFS and in TVL.

What led you to T2?

T2 Because of this.

What is that?

T2 Eh, this symbol show the same thing on the map (pointing to the key).

PE2 On p65.
PE1 Orange Free State.

Can you point out the place?

PE2 Here at Welkom, at Heidelberg and others. Johannesburg and the TVL.
PE1 What about Rustenburg.
PE2 I used the key.

**5. Read the first paragraph on page 67.
When was gold first discovered in Johannesburg?
(Would you say 50, 100, 150 or 200 years ago?)**

G1 100 years, I think in the region of No 200 because it was 18 something.
G2 It was in 18 something.
G1 So it gives us 200 years.
G2 Yes.

Can you give a year?

C2 Before Johannesburg was built.
C1&2 No, can't be sure of a date.
C1 150 years.
C2 100 years I guess.
T1 No, there is no exact date.
T2 No.
T1 More than 200 years.
T2 Agreed.
PE1 Paragraph doesn't tell.

Can you guess?

PE1 It takes off when it was discovered but it doesn't give us a time.
PE1 I'm going to say it was many years ago. I'm not sure about that.
PE2 About eh ...200.

**6. Read the first paragraph on page 67. (After reading, point to the expression - "the town had grown out of the veld")
Do you know what this expression means?
Can you explain what you think happens when a town grows out of the veld?**

G2 Yes, there started to be houses on the veld.
G1 It means before there was just a thicket, there was no house, nothing, the people flowed in to dig gold. So people hear of gold and come and dig so they won't go away, so all the permanent structures.
C1 There were no buildings or people staying there, it was an open space. When they did their mining it started creating towns around the open space.
C2 Yes, Johannesburg became famous.
C1 People stayed there to get work there.
T2 It became popular.
T1 The town developed.

Can you give more details on what you think actually happened?

TP Well there were so many places, so many buildings, so many factories and all that, so it developed in every area.

TN Agreed.

PE1 Biggest city in SA is Johannesburg, so I'm sure it is the town that grew up after a few years after gold was discovered.

PE2 There were few people in Johannesburg, but when gold was discovered, the people went there.

What happened when gold was discovered?

PE2 In a few years, the town grew that was Johannesburg.

7. Look at the picture on page 66. What is this a picture of?

What do you think this green part is? (Reef)
" " " " " other part is? (small reef)
" " " " " this is? (headgear)
" " " " " (shafts)

G1 Cross-section of ...

G2 ... a gold mine.

What is the green part?

(Long pause)

G1 I think its where the minerals are found.

G2 I'm sure its the entrance of the ... its where the people enter.

G1 Its where the mineral is, so people have to come here and dig.

Other green part?

G1 Its another reef.

G2 Its where people take out this green part, where they work.

Headgear?

G2 Its a long building, I don't know.

G2 Inlet and outlet, its a shaft.

White parts?

G2 Crossing entrances to the working centre.

G1 Passages.

C1&2 Inside of a gold mine.

Green part?

C1 It is gold.

C2 They show us how gold is in the mine.

The indication of the gold (pointing to map key on page 65) show the colour, it is green colour.

So that means that the key on page 65 shows that gold is a green colour, so that means that the green part on p66 is gold?

C1&2 Yes.

Other green part?

C1 It is another part for gold.
C2 Yes.

How did you know that?

C1 The key shows that gold is the green (referring to key on p65).
C2 Its written number 12 (pointing to key on p66).
C1 So there is a layer of other gold.

Headgear?

C1 They said its a headgear on p66.
C2 It is headgear.

White parts?

C1&2 Passages and shafts.
C1 When they get into number 4 you go down in a lift to the passage.
T1&2 Inside of a gold mine
T2 Gold bearing reef? I don't know.

You say its a gold bearing reef, but you don't know?

T2 I think so but I'm not sure.

What do you think it is P?

T1 It is the path to the shaft or the mine.
T2 It is the reef, oh this (pointing to main reef (a)), is the biggest reef and this is the second, small reef (pointing to (b)).
T1 (Agrees)
T2 Headgear, this is the headgear.
T1 (Agrees)

What is head gear?

T2 I'm sure this is the hole.
T1 Hole?
T2 This is the mouth to the hole of the mine.
T1 (Agrees)
T2 These are the crossings, crossing parts of the different angles of the mine.
T1 (Agrees)

**What do you think they are used for?
What happens in those places?**

T2 I don't know.
T1 I'm sure, since there are workers here, they go to different departments in the mine, they are the ways to different places.
PE2 Inside the gold mine.
PE1 Mining shafts.

Green parts?

PE2 Gold bearing reef.
PE1 (long delay) Eh.... shafts, gold bearing reefs and blind shafts.

All three?

PE1 Yes.

Other green part?

PE2 A reef that is deep down.
PE1 Yes.

Headgear?

PE2 Shaft.
PE1 Yes, shafts.

Tunnels?

PE1 Passages.
PE2 Shafts.

8. What did you do to find out what the things in the picture were?

G1 By reading the passage.
G2 There is a key for that, telling us what part is that.
C1&2 Used the keys.
T1 I get these from keys there at the bottom.
T2 The keys have the information.

How did you find out?

PE1 I looked on the numbers.
PE2 Yes.

**9. Look at page 67. (Point to "these problems" in the last line of paragraph three)
What do you think "these problems" are? (You can read the page if you want to and then tell me).**

G2 These problems are to get to this.
G1 To the reef because its sloping, and it needs some specialist to get there.
(Both agree)
C2 It was the way how the mines

C1 ... its difficult to go down there, so there are difficulties where people are overcrowded by rock and they can't go out.

C2 Yes.

T1 (Uncertain paging and re-reading) Problem number 1 is the reef.

The reef?

T1 Yes.

And the other?

T1 Well I'm still looking.
So this reef makes a problem in mining, when mining, in mining. since this reef is a rock that is found in the mine - so now, these men find it difficult to dig up this rock, so it takes time to come straight to the gold because there is this reef over. I think that is the problem because it takes time for them to get real gold because there is this reef on top so they must first remove the rock and then get to the proper rock.

Do you agree with that T2?

T2 Yes.

Are there any other problems?

T1 And eh, so the engineers are working hard and getting a tough job in removing that reef, so before these men come to dig up gold, the engineers ought to be there to remove the reef.

So you'd say that is what we are talking about when we are talking about these problems?

T1&2 Yes.

Those two problems, you agree with that?

T2 Yes.

PE1 The reef.

Anything about the reef?

PE1 No.

PE2 Sloping of the reef.

PE1 Except eh, take the shortage of engineers in SA. So engineers are needed that's why there are so many people dying in the mines. Because of the shortage of engineers.

**10a. Read the last paragraph on page 67
Can you think of a title or a heading for this paragraph?**

G2 Industrial Development.

G1 The importance of gold.

C1 Learning money in South Africa.

C2 SA is the best in gold and diamonds.

T1 South Africa manufactures gold or SA manufacturing.

How about you, T2?

T2 SA is important because of gold (it means SA has a lot of money because it produces now this gold).

T1 SA manufactures gold.

PE1 Exports of SA.

PE2 Imports and Exports of SA.

10b. Read the last paragraph on page 67.
What does "money coming in" in the last sentence mean? Where is it coming from?

G1 You see when people buy gold that is in coming money for use in their own countries so that is the exchange of buying. It makes the country richer. If you have got nothing to give you will be sitting without money.

Where is the money coming from?

G2 From other countries.

G1 Yes, I agree.

C1 They sell out gold and they get money, to export it to other countries.

C2 Gold is the main way of getting money because of gold they can buy thing from other countries. They get money from other countries.

T1 Yes, since SA is having gold, so it sells gold to other outside countries, so these countries to SA and SA exports this gold to overseas countries.

T1&2 The money comes from outside countries.

PE1 Imports.

PE2 Yes.

PE1 Other countries.

PE2 Yes.

11. What does Figure 55 show us?
How does it show us this?

G2 Compare the value of gold and diamonds.

G1 Ja, it shows the supreme value of gold.

How does it show us this?

G1 Graphically, its proportion is big, its got more value.

G2 Agree.

So what would you say is next in value?

G2 Volume of other goods.

C2&1 It shows us how much gold we have in SA and how much diamonds and other goods there are in SA.

How?

C1&2 There are more gold and less other goods.

T2 The role of gold.

T1 The graph, how SA gets gold - it is rich in gold and it gets much money.

T2 Yes, I agree, but eh, it also shows us that gold is more valuable than diamond, I think so.

Okay, how does it show us this?

T1 Well, the value of gold is much important. More than any mineral in SA.

How does the diagram show that?

T1 By the diagram.

How?

T2 It is bigger.

PE2 The importance of gold and diamonds. The value of gold and the value of diamonds.

PE1 The importance of SA's exports. Firstly to my children I'll explain the meaning of exports and imports. And I'll also explain that here in PE we've got eh... companies just like Ford motor company, VW, so eh... those are - cars are taken away from SA to countries like Botswana, Mozambique, Ghana and those are examples of exports.

Post-Reading questions

1. What are the two most important things the passage tells us?

G1 First one I would say, the value of gold to SA, because it entirely depends on gold.

The second one?

G2 How Johannesburg grew up because of the presence of gold there.

G1 I have a different one. Eh, it is exchange with other amenities like cars, which we don't have - so we are able to buy things that we don't have.

G2 The first is the same as G1's first one.

C1 How the town was built by having gold there.

C2 The one who observes that there is a gold there - so Johannesburg is most important because of gold. We can't suffer and be hungry because of gold. It tells us Johannesburg feeds us, its our mother.

C1 Its a famous country and we respect Johannesburg.

T1 Tells us about gold and mining.

T2 It also tells us that, eh, people get these things from minerals - these things like earring, everything - so we get these things from a diamond and gold. So these things are important to us.

PE1 The importance of gold.

PE2 The importance of exports.

2. What does it tell us about minerals?

G1 Its dug underground.

G2 Minerals value in SA.

G1 They are dug raw as raw materials.

C1 Raw materials such as ...

C2 ... wood, even water.

C1 And out of that material you get something. Its raw when it has not been used, but after it has been used it is useful - eg desks, paper.

T1 Minerals are so important to us, because we are getting money and things that are done from the minerals.

T2 Because it tells us that desks are made of wood and screws and other thing we get from minerals.

PE2 Minerals are raw materials.

3. Did the passage tell us what is made with gold?

G2 Yes.

G1 I can't remember ... yes, oh maybe we know it and take it for granted.

C1 I didn't read it, no.

C1 Agree.

C1&2 No, just by selling gold to other countries and we get other things.

T1&2 No.

PE1&2 No.

4. What did the passage tell about mines in South Africa?

G1 Mines in SA have a problem of sloping.

G2 The different mines like coal, gold, diamond, copper, iron-ore mines. So SA has the deepest gold mines.

G1 And the places where these mines are found.

C1 SA is the biggest in gold mining.

C2 So less in diamonds.

C1 It also comes out of an open veld and people and buildings and people get work and its how gold comes from an arc.

T1 Passage tells us the importance of mines in SA and it also tells us about the biggest mines, gold mines, gold mines are so important in SA and there are also some diamond mines and all that. So and that SA earns much money because of gold.

T2 Yes, and that SA became popular because of this gold.

(Tape distortion)

5. What are the most serious problems that South African mining engineers have to solve?

G1 They have to solve the problem of how to get the slope of the reef valley as to how to get the raw materials of gold.

C1 There are some difficulties - mining engineers break out. I'm sure ... its one of the problems.

C2 The problem of - it may be that a few people having this course - because I never heard there is a school for people before they go down.

T1 Yes, since in the mines there are reefs or rocks, so the engineers must first remove or must first crack the rocks before these people are getting to the real gold - so the engineers must use their machines to remove the reef.

PE2 The reef.. can't remember.

Passage 2

Pre-Reading questions

1. Do you know what a satellite or a spaceship is?
What can you tell me about a satellite or a spaceship?
- G1 I know a little about - its a, its a moving body in the air in the space.
- G2 Yes that's what I know about a spaceship, its something a moving something in space.
- C1&2 Not sure.
- T2 No I don't know.
- T1 I've got the idea of the ...satellite...but I don't know how to explain it, er - what other name?

Spaceship

- T1 I'm sure its something to do with the stars or in the TV or in the film. Maybe in the film you see something which was done in overseas -you see it happening here by the SATELLITE. That means it was taken a picture long ago and now we are shown here presently in the TV's.

So if something happened overseas long ago, we can see the picture here by satellite?

- T1 Yes.

Is that what you think?

- T1 Well, I think.

Okay, so, a spaceship is it a different thing or the same thing or something else? Have you any ideas?

- T1 It is a different thing, since it is a ship, I don't think it has something to do with a STATELLITE.

What would you say it has to do with?

- T1 Well, with ship in the sea.
I'm not sure.

PE2 Not quite clear.

PE1 Not sure.

2. Do you know what a plateau is?
What can you tell me about a plateau?

- G1 Yes.

Can you tell me about a plateau?

- G1 A plateau - before you have plateau you must have high land like mountains, then the area level there we call it a plateau.
G2 Yes the sloping or flat land.
C1&2 Yes, a high flat part of SA.
T1&2 Yes
T1 A plateau is an escarpment or a hillock.
T2 A level area of land.

So what did you say T2?

- T2 A plateau is a large high, like a mountain and its got slopes pointing down.

So a plateau is a high area. Which has got slopes which go down?

- T1&2 Yes.
PE1 Yes, it is a flat land above sea water.
PE2 Flat area.

**3. Do you know what a slope is?
What can you tell me about a slope?**

- G&C No answers to this question.
T1 Slope is something, if you are from above, now you go down, it is like a slope of this from high to low (gesture correct).
T2 Yes.
PE2 (Long pause)Showing bumps (up and down).
PE1 Yes.

What is an escarpment? (not asked of PE and Transkei - Interviewer's mistake)

- G2 An escarpment is a range of mountains.

More than that?

- G1 It is higher than the sea level, its a continuous mountain ranges which can be broken there and there (showing end of a range and beginning of next) but they show continuity of some kind.
G2 Yes.
C1 Escarpment are the mountains that form the edge of the plateau.
C2 Yes.

**4. What is a mountain range?
Can you tell me or show me what it looks like?**

- G1 Is a high land wich sort of stands in a line, more or less a line, it might as well differ in length.
G2 I think so.
C1 Its a line of mountains that come from the Kamiesberg to the Drakensberg.
C2 Yes.
T1 I cannot explain what a mountain range is.

You are not sure?

T1&2 Not sure.
PE1&2 A chain of mountains.

5. What is the relief of a country?

G1 Its how its built, Mountains, rivers, lying low areas, highlands.
G2 I agree.
C2 When we are talking about mountains and rivers.
C1 Its a map that show the mountains.
T1 The kind of rain in the country.
T2 I don't know the word relief.
PE2 The rivers, mountains, rainfall of a country.

Text-Interaction questions (to be asked after reading the text).

**1. Look at page 24. (Point to the word "space" in the heading.)
What does this word mean in this sentence?**

G1 Means up in the space.
G2 Space means up (pointing to sky).

Can you describe in a little more detail what you mean by up?

G1 Above the surface of the earth.
G2 Up in the sky.
C1 I understand there is an ocean this part and ocean this part and SA is in between and other countries are a little bit far.
C2 SA is mountainous. There are rivers, also land, mountains, there. Rivers, also space for country (unclear).
T1 The space between the sky and the earth, the part between the sky and the earth.

Would agree with that T2?

T2 Yes.
PE2 High above.
PE1 If you are flying high above you will be able to see the whole of SA.

2. Read the title and the first paragraph on page 24.

- a) Where does space begin and where does it end?
- b) Are there people in space?
- c) Have there ever been people in space?
- d) How did they get there?
- e) Who were they?

a)G1 I think that is supernatural, we can't answer, its questions we always ask ourselves.
G2 No.
b)G1 No, I don't feel there any there.
G2 I feel there are not people there because I never see or hear of anyone from there visiting us.
G1 I think, no life supporting things in space like oxygen, food and that.

- c)G1&2 Yes.
- d)G1&2 They use these spacecrafts an spaceships.
- e)G1&2 Armstrong.
- G1 Aldrin.

Any others?

- G1 I forget their names.

Where do they come from?

- G1 Russia and America.
- a)C1 Between the mountains and the rivers and the escarpment.
- C 2 So, between the sea and the river, there is a space between them. Even between the mountains and the river there is a space. But the more space, it is between the sea and the mountains.
- a)T1 Begins up and down to the earth.
- T2 Yes, end up on the sky.
- b)N/A
- c)N/A
- d)N/A
- e)N/A
- a)PE1 Starts on the ground an goes up as far as you can go.
- PE2 Not sure.
- b)PE2 No there are no people in space.

c) Have people been there?

- PE2 Yes, Apollo, Neil Armstrong.
- d)PE1 By flying very high in a satellite or a spaceship.

3. (Point to the word "relief" in the fourth line of the first paragraph.) What does this word tell us about in this paragraph?

- G1 The build, the build.
- G2 The mountains and the rivers.
- C1&2 Mountains and rivers.
- T1 The sketch of SA.
- T2 Yes I agree, of how SA looks like.
- PE2 The mountains and the rivers and all the land between them.
- PE1 Yes.

4. a) Is a relief a map?

- G1 A relief is not a map but we are trying to show the relief by means of a map.
- C2 Yes, a relief is a map.
- C1 Yes.
- T1 Yes, because the map show you the sketch of the map so it is the same as the relief.
- T2 Yes.
- PE1 It should be a map relief.

The same thing?

PE1 No, not the same thing.

PE2 They are not the same thing. There are relief maps physical maps. There are many types of maps.

b) What does a relief tell you that a map does not tell you? (If answer is: Where mountains are; then: But an ordinary map tells you where mountains are (Show a map with name, not gradation (p33)). So, what is the difference?

G2 Relief tells us about the building of the country, the mountains, the rivers inside.

G1 Its not the vegetation? I don't get the question clearly.

Question again and page 33. What is the difference?

G1 Its reality. The map shows you a small size. The really relief its somewhat big and somewhat got life.

G2 I don't understand.

(Explained again)

G1 Also the map shows imaginary lines like a border. With the relief if I stand here, I can't say in the mouth of the Orange river.

G2 To me it seems as if the map shows us the parts where we are. Those places we are concerning about. The relief shows us the country a whole.

C2 The relief tells about the mountains and the rivers, it does not tell us about the land.

C1 A map shows you where the relief is and how it is built.

Page 33? Differences?

C2 In a relief the map specify how mountains are built and rivers. We don't get anything in a relief map.

There is a difference between a relief and a map? Or are you not sure?

PE1&2 (No reply)

c) What happens to rain when it falls on:

- the plateau
- the escarpment
- the plateau slopes

Rain and plateau?

G1 The water is soaked into the earth, if it can get away of going into a river, because it is a flatland.

G2 Yes.

Escarpment?

- G2 It just runs down to the sea.
G2 Yes.

Plateau slopes?

- G1 It also runs down to the sea.
G2 To the sea.

C) Plateau

- C1 Since it is a high flat part, maybe it will form some canyons and it is easy to run down to the river.
C2 There can be small dams because water does not move on a table land.

Escarpment?

- C2&1 It goes down to make rivers.

Plateau slopes?

- C1 It goes to the sea.
C2 It may widen up the river and go to the sea.

C) Plateau?

- T1 It goes down because a plateau is always slopey.
T2 Slopey, yes.
T1 No, it goes down to the river.

Escarpment?

- T2 Well, yes still the rain goes down still.
T1 Agrees.

Plateau slopes?

- T2 Well it releases because the plateau is like a table.
T1 Yes.

So the plateau slopes are like a table?

- T1&2 Yes.

And what happens to the rain there?

- T2 It remains there, it doesn't go down it remains there since we are having dams and rivers.
T1 Yes.

- PE1 It stays there.
PE2 It can stay there because that area is flat.
PE1 It will go down to the river or sea.
PE2 Also go down.

5. Read the last sentence on page 24. What are the following points we are supposed to note?
Where will we find them?

G2 Fig 25.

G1 On the map Figure 25.

What are some of the points we are supposed to note?

G1 Eh, the escarpment.

Which is? What are you looking at there?

G1 Figure 25.

What else?

G2 The plateau, the plateau slopes, other mountains.

G1 That don't belong to the escarpment.

G2 The general build of SA.

G1 The highest point revealed by the key there (point to fig 25).

Are there any more?

G2 The coastal areas, the low lying parts, the Karoo deserts, rivers

G1 Yes, mmm.

C1 On page 25, General, Plateau, escarpment.

C2 What SA looks like and what you can get.

We'll find them on page 25?

T2 Yes.

T1 About the relief of SA, eh, that is the first point, second point is the plateau, 3rd point is the escarpment, and 4th point is the plateau slopes and the mountains and we find them in the paragraphs.

T2 Agreed.

PE2 General, the Plateau, Escarpment and other main headings.

PE1 Yes.

6. Read paragraph a) on page 25. It tells of the similarity between the relief of South Africa and a saucer. (Give interviewees a saucer). Can you place this saucer on the table to illustrate the similarity between it and the relief of South Africa? Where is the base of the saucer?

G1&2 (Placed it correctly.)

G1 Down here, the sea level, coastal plain and you go further deeper into the country you'll find it sort of slopes up until you find the top edge which is the escarpment comparing with the saucer, its base, representing the escarpment, the chain of mountains. While standing there you will see a flat land which can be representing the plateau.

Do you agree G1 and G2?

- G2 I'm just trying to think about this. (pointing to raised section in middle of bottom of saucer) (confused about what the raised middle represented, but generally agreed with I1). Saucer should be flat.
- G1 The book also can confuse the child because the escarpment on the west is lower and the saucer doesn't show this. Also the saucer is round but the relief of SA is not round, so the kinds will be confused, it is not a good example.
- C2 The relief is like an upturned saucer. So this line seems as if the mountains
- C1 This is the sea, line of mountains, Durban, Port Nolloth. (correct)

Can you show me the base?

- C2 Wrong way up.
- C1 Upsidedown bottom (correct).
- C2 No, this is the base - the line of mountains (correct)
- T1&2 (Uncertainly) I can't understand it, I'm not sure.
- T1 Placed saucer upside down and pointed out slopes and tableland (correctly).
- T2 Oh, I see.

Can you tell me where the base of the saucer is T2?

- T2 Here (pointing to slope of the upturned saucer).

This sort of slopy side?

- T2 Yes.

What would you say T1?

- T1 This is the base (pointing to rim around top of upturned saucer - correct).

This little rim around the top?

- T1 Yes.
- PE2 If the saucer is turned upside down it forms that U-shape.
- PE1 Yes (seemed uncertain).

**Look at Figure 26. What is it a picture of?
Can you show me the line of mountains in this picture?**

- G1 A cross-section of eastern part of SA.
- G2 Its a relief of SA.

Line of mountains?

- G1 Its here where the (unclear) are.

Can you show me where it is, from where to where?

- G2 From the Kamiesberg to the Drakensberg.
G1 I would say from the Drakensberg to Kamiesberg, from the sea to the inland.
C2 The relief of SA.
C1 Yes, start from Kamiesberg across to Drakensberg (across from West to East)

T1&2 It is a picture of the saucer (T1) turned like this.

Would you agree?

T2 I disagree, it is like this.

Its the saucer with the base upwards?

T2 Yes.

What else is it a picture of?

- T2 It shows us the oceans.
T1 Mmmmmm I see now, the oceans here.
T2 Indian ocean, Atlantic ocean.

Anything else?

- T1 Mmmmmm, it show how the mountains...
T2 The mountains, towns, eh...

Can you show me the line of mountains on the picture?

T2 Yes, from Port Nolloth up to Kamiesberg, up to Drakensberg and down to Durban. So that I think that is the line of mountains (line from East to West across).

T1 Yes.

- PE2 The relief of SA looks like an upturned saucer .
PE1&2 From Kamiesberg to Drakensberg.

8a. Read paragraph c, page 26.

If I stand at the bottom of Mont-aux-Sources and I want to climb to the top of the mountain, will I have to climb 3480 metres to get to the top?

- G1&2 3480m, yes.
C1 Its above sea level.
C2 I don't think so because the land and the sea measurements is not the same, so I'm sure it will be more than that.

So you will have to climb more than 3480m?

- C2 Yes, it will be more.
C1 I'm not sure.
T1 Come again....
Yes, because it is above sea level.

So I would have to climb 3480?

T1 Yes.

Do you agree T2?

T2 I think so.

PE1 If you are on top...

(Explained again)

PE1&2 Yes.

b. Read the last sentence of the second paragraph. The Nuweveld, Stormberg, Sneeuberg and the Drakensberg are only a few what?

G1 A few mountains making this.

G2 They were talking about the heights, a few now we don't know a few metres up or a few mountains. It is rather confusing.

C1 Of the mountains that form that escarpment.

C2 Agree.

T1&2 Mountains.

PE1&2 Mountains.

c. Read the passage about the escarpment on page 26. What does this mean? (Point to "many mountain ranges go to make up the escarpment".)

G2 They make up an escarpment.

G1 Mountains that form the escarpment.

How do they do that?

G2 They form the edge of the plateau.

What does the sentence tell you?

G1 The escarpment is made out of mountains.

C1 The line of mountains, follow that line.

C2 How the mountains are as they are going up and they are going down in a zig-zag.

T1 Many mountains make up the escarpment like Stormberg etc, are the only mountains that can make up the escarpment.

What does "go to make up" mean?

T1 They are making the edges of the plateau.

T2 Yes, the escarpment is the edge of the plateau.

PE2 There are many mountains that form an escarpment.

PE1 (Uncertain, but agreed)

9. Read paragraph e) on page 27.
Are the Magaliesberg, Soutpansberg and the Witwatersrand part of the plateau?

G2 No.

G1 Should be, yes.

Would you like to give reasons?

G2 They do not form part of the plateau.

Do they form part of the plateau?

G2 (No reply)

G1 To me they do, they are within the plateau.

G2 They should be.

G1 Because we don't know from where the plateau stretched so we take it that the whole area of the Transvaal with the escarpment is the plateau with the exception of some hills and mountains.

C1 They ought to be part of the plateau, since they do not form part of the escarpment.

C2 Yes.

T1 I disagree, these do not form part of the plateau.

They do not form part of the plateau?

T1 Yes.

T2 Yes.

You both agree?

T1&2 Yes.

PE1&2 No.

10. Look at Figure 27 and read paragraphs d) and f) on pages 26 and 27. Now cover Figure 27 and read paragraphs d) and f) and point out (on model):

- the plateau slopes (where they start and where they end)
 - the coastal plain (where it begins and ends)
 - the escarpment (where it begins and ends)
 - the plateau (where it begins and where it ends)
- as instructed by the text.

Plateau slopes

G2 Here (point to slope area on eastern side of Drakensberg) between the escarpment and the sea (on the east coast only).

G1 Yes, but the whole part, right around, from the escarpment down to the sea right round (from N Natal to SWA).

Coastal plain

G1 Coastal plain is from the sea, just right up but just before you get to the escarpment, there is no boundary, say half way up to the escarpment, all the way around (N Natal to SWA). Its a low lying area after the mountains.

- G2 Its a low lying area from the mountains to the sea.
 G2 Yes, from here (coast) up to here (midway up the side of the Drakensberg).
 G1 Yes, the coastal plain is part of the plateau slopes.
 G2 Mmmmmm (unsure).
 G1 Some parts are coastal plain, but it is still sloping down from the escarpment, some parts are the same.
 G2 Yes, the coastal plain must end, I'm sure it starts where the plateau slopes end.

Escarpment

- G1 Is from just near the Limpopo river right round to the West to SWA somewhere.

As far as going from the East to West across, where does it start and end?

- G2 Its a range of mountains.
 G1 Yes, from the east to the west.
 G1 On top of the drakensberg mountains. (Line along the top)
 G2 Yes.
 G2 You also find plateau slopes down to the plateau.

Plateau

- G2 Starts where, at the foot of the mountain (Drakensberg) to ...(delay) to the foot of the Kamiesberg.

Okay, point out the whole area

- G2 (Points out a line East to West and unsure about North/South)
 G1 (Whole area within escarpment)
 G2 Now what about these mountains? (Magaliesberg etc) Are they part of the ...

plateau?

- I'm sure they are not, because the plateau is a flat part and these are mountains.
 G1 No, they can be part of it, they are the exception to the rule. They just popping out.

Plateau slopes

- C1 The Transkei, Tugela valley here (pointing correctly) start Transkei and end Tugela valley.
 C2 I'm sure its really what she says as the plateau slope is between the sea and the land. The example is the Transkei - so the plateau slopes are this part - Eastern slopes of Drakensberg between Transkei and Tugela valley.
 C1 I'm not sure if there are plateau slopes anywhere else?
 C2 Its the only part that shows us the plateau slopes, they are not the same as these on the eastern slopes.
 C1 I'm not sure if there are any on the West side, I'm sure there must be but it (book) doesn't show us where.

C2 Even the Karoo does have them. (they are not the really plateau slopes, they are slopes. (the same plateau slopes belong to the East coast, not to the other slopes)

Coastal plain

C2 So this place, between the sea and the land can be the coastal plain as it is flat and next to the plateau slopes.

C1 Coastal plain is in the East part next to Natal and the SW cape there is a coastal plain there. It goes from Natal to SW cape.

If it begins at the sea where does it end?

C2 Immediately it touches the plateau slopes.
Plateau slopes down to Durban and down to Port Nolloth from Kamiesberg.

C1 We are used to the book words - there is no other explanation - the mountains that forms the edge of the plateau.

C2 Yes.

Plateau

C1&2 It is the highest in the east and lowest in the west.

C1 It is this part (inside escarpment).

C2 Same.

Plateau slopes

T1&2 (Pointed to mountains on the plateau)

T2 Yes, I agree.

Coastal plain

T1&2 Flat low lying area along the coast (correct).

The escarpment

T1 (Pointed to line running along the top of the mountain ranges from NE Transvaal to West Coast)

So the escarpment you say is along the top of the mountains here?

T1&2 Yes.

Plateau

T1 The plateau is also the escarpment.

What would you say T2?

T2 Yes.

You say the plateau is the escarpment?

T2 Yes.

So you both agree that the plateau is along here (pointing line along top of mountains they pointed to earlier.)

T1&2 Yes.

The plateau is along the top of the escarpment?

T1&2 Yes.

Plateau slopes

PE1 (Pointed to E and S sides, correct, and the mountains on the plateau)

PE2 (Pointed to the Langeberg and Outeniqua mountains along their tops)

Coastal plain

PE1&2 (Both correct)

Escarpment

PE1&2 (Both correct)

Plateau

PE1&2 (Both correct)

Post-Reading questions

1. **What are the most important things that the passage tells about the relief of South Africa?**

G2 The mountains and the plateau.

Anything else?

G1 The relief of SA, rivers, mountains low lying areas.

C1 How SA looks like and the relief of SA.

T1 The mountains in SA and the plateau in SA and also the seas in SA, Ja, the mountains in SA and all that.

Okay and you T2?

T2 Yes, and it also show us about the slopes.

So, the mountains and the slopes?

T2 Yes.

PE1&2 Relief of SA.

What does the passage tell about what South Africa looks like from space?

- G1 Its shape, its like a saucer turned upside down.
- G2 Yes.
- C1 About mountains and rivers.
- C2 Plateau slopes.
- T2 A saucer, it looks like a saucer turned downwards.

Do you agree T1?

- T1 Yes, I agree.
- PE2 Looks like a saucer which has been turned upside down.
- PE1 Yes.

3. What does the passage tell about the Witwatersrand?

- G1 It doesn't fall under the escarpment.
- G2 Yes.
- C1 The mountains in the Witwatersrand area.
- C2 Forgotten.
- T1 I didn't see Witwatersrand here.
- T2 No.

So it doesn't tell us about it?

- T1 No, I didn't hear anything.
- T2 No.
- PE2 It is a line.
- PE1 It doesn't fall under the chain of mountains.

Passage 3

Pre-Reading questions

1. What is a climate?

- G1 Climate is, er, weather taken over a long period.
- G2 Tells us about a weather of a place.
- C2 Climate is the temperature.
- C1 And rainfall.
- T1 The climate is when rain falls in that particular place and how about winters and summers in that particular place.

Do you agree T2?

- T2 Yes.

Would you like to add anything?

- T2 No.
- PE2 A climate is rainfall, how hot or cold the area is and its rainfall.
- PE1 Yes.

2. What is a drought?

- G1 Drought is a rapid change to a specific area - no rain for a certain period.
G2 Yes.
C2 Where there is no rain.
C1 No food.
T1&2 It is when there is no rain.
PE1 Drought occurs when there is no rainfall.

3. What is a climatic zone?

- G1 Its a region with a particular type of climate - hot or cold climate.
G2 Or summer or winter rains.
C2 Climate of that part.
T2 No, I don't know.
T1 It is the climate of that particular area, I think so.
PE1&2 Not sure.

4. What is a rain-bearing wind?

Tell me what you know about rain-bearing winds in South Africa.

- G1 I would say the flow of the direction of the winds causing changes some other places you get rains at certain times eg Easterly winds bring rain in summer.

So the easterly wind brings rain to the coastal and inland areas in more or less the same amounts?

- G1 Mmm, whereas in the western it gets different times. Its the type of wind that is moist or blowing across the sea with a warm current. You'll find that the wind is damp.
G2 It is the wind that brings the rain to a certain place.

In SA?

- G1 The easterly winds blowing across the Indian ocean into the E part of SA and travelling up the E slope. So that it gets cold the Natal or E slope gets more rain in summer.
C1 Near the coast.
C2 Yes.
C1 It is to do with temperature and the weather.
C2 Along the coast it is always drizzling because of the weather.
C1 If its windy you expect that there will be rain.
C2 It must drizzle if there is wind because of the moist air.
T1 No idea.
T2 I've got the idea, but it is faint. It is rain with much more wind.
PE1 It should be a rain that comes from a certain direction eg, rain from east to west.
PE2 It is a type of wind which brought rain.

In SA?

- PE1&2 Not sure.

Text-Interaction Questions

1. Look at page 28. (Point at "spells" (of cool, rainy weather) in first paragraph). Do you know what this word means? Say in your own words what you think it means.

G1 Composition or segmented.
G2 The climate is always, er, rainy in winter.
C1 How the climate weather is hot or cold.
C1 How or which areas it is hot or cold.
T1 Cold.

You think it means cold?

T1 Yes.
T2 Winter.
T1 Cold rainy weather.
PE1 In winter is usually cool and its always rainy.
PE2 Yes.

2. **Can you say what rain-bearing winds are now?**

G1 Moisture-laden winds.
G2 Winds that bring the rain - moisture rain that brings the rain in the escarpment.
C2 Before it rains there is wind that means rain comes from the moist air.
C1 Especially near the ocean, the rising of the air causes the rain bearing winds.
T1 Are the winds that bring rain .
T2 Yes.
PE2 It is still vague.

The passage hasn't helped you understand that?

PE2 No.
PE1 Still unclear.

3. **What is the difference between a thunderstorm and a rainstorm?**

G1 A rainstorm is when a lot of water falling on earth but a thunderstorm is when you hear noises in the sky.
G2 Rainstorm - I'm sure there is a lot of pouring rain. Thunderstorm is just when you hear those noises.
G1 There is also rain in a thunderstorm ... I don't know deeply, but its rapid changes in the sky of temperature. Breaking of ice and hitting of clouds causing differing polarities.
G2 Yes.
C2 In a thunderstorm there is a lot of wind, there are thunders, small rain. In a rainstorm there is wind, but strong rain that overpowers this rain er...
C1 Small stones.
C2 Small white stones as if they are ice-blocks and strong rain. So in that rainstorm everything can be damaged as compared to a thunderstorm.
C1 Yes, same.
C1 High temperature.

- C2 When its too hot I expect a thunderstorm. We don't know what happens. There are more thunderstorms in summer.
T2 I'm not sure. I think thunderstorms have got some strong winds.
T1 Rainstorm is the rain with a cold, windy rain with stones, those small stone - hailstones. A thunderstorm there are lightnings accompanied by a sound in thundering? There is less rain than thundering.

What is the sound?

- T1 When there is a friction, I don't know what friction, but when it is thundering there is wind, there is a sound and there are lightnings too.

T2 Mmmmm

- PE1 A thunderstorm occurs when the day was very, very hot. Thereafter or just during the day when it is too hot, the thunderstorm occurs. And it is accompanied by the lightnings and GRR. A rainstorm, I can say ... eh ... is just eh ... soft rain.

PE2 Yes, I agree.

4. Why is there a desert along the west coast of southern Africa?

- G1 I think its because of the relief, secondly when the easterly winds blow across the ocean, they find the escarpment, it get colder, it rains, so the more less (less) rain they can get, so as the wind travelling to the west it becomes drier and drier. So the people far west, they go to the extend of getting a desert because of dry wind blowing.

C1 It is a desert it is dry, so as you go along the coast its become warm, not drier like inland since there's too much rain falls along the coast than the middle part. Maybe the mountains can cause the rain, but the desert its open veld.

C2 Its too hot and there is no rain.

So the reason why there is a desert along the west coast is for the reason you've told me?

C1 We are not sure, we can't say the right answer, there's no desert as such since its along the west coast, there's rain all the time, it ought to rain all the time.

T1 Yes, along the coast of SA it is dry, so that is why we are having deserts.

Would you agree T2?

T2 Yes.

PE1 Because there is less rain on the west coast.

PE2 Yes, I agree.

5. What is the difference between a desert and a drought?

G1 Desert is permanently dry, the vegetation is just that type - But a drought is a normal area but all of a sudden it dries, no water and its a drought.

G2 Yes.

- G1 It doesn't stay that way, where you have drought this year, the following year it rains and the region picks up again.
- C1 There is no rain for that certain period, for a particular period, 3 months, 6 months.
- C2 But in a desert its dry for life, throughout.
- C1 Seem to be similar.
- C2 Deserts are just a dry, hot place. There are mountain places around this desert so though there is less rain it is not too dry....
- C1 The influence of the moist areas around it...
- C2 Because there are mountains around this desert so obviously where there is a mountain there is a rain.
- C1 I feel a bit confused about it. The questions (drought and desert) look alike.

T2 would you like to try first, you have been very quiet

- T2 Its because I don't know geography so I'm not sure so I don't contribute.

Would you like to try?

- T2 I think the drought is the place where there is no rain and also the desert there is no rain there, but I can't differentiate.
- T1 Well a drought is not a permanent issue, and a permanent event, but in a desert it is always dry. The climate does not change if a desert and then the drought can change - it can be rain sometimes and it can be no rain.
- PE1 On a drought there is totally no rain, but in a desert there is rain sometimes.
- PE2 Yes, I agree.

**Look at the model of the relief of South Africa (provided.)
(Point to positions of De Aar and East London).
Which town gets the most rain?
Can you say why?**

- G2 East London, now, well, De Aar is in the dry part here - there is less rain falling - I'm sure the rain bearing wind just catches in the escarpment so there is less rain.
- G1 Yes, I agree.
- C1&2 East London.
- C1 It's near the sea.
- C2 De Aar is very hot and far from sea and no moist air comes there, but moist air comes to East London.

Any other reasons?

- C1 So De Aar is not near to a desert area?
- C2 It is.
- T1&2 East London.
- T2 Because its along the coast.
- T1 And De Aar is in the Karoo, so there are no rains in the Karoo, it is a desert. There are deserts in the middle, Ja, there are deserts - the Little Karoo, or Great Karoo are near there. There are deserts.

T2 Yes.
PE1&2 East London.

Why?

PE1 It is near by the sea and De Aar is far away.
PE2 And it is near the desert and it is far from the sea.

7. Look at map 1 on page 29. What does it show us? What is this dark part here showing? (Point to South Western Cape.) What is this dark part here? (Point to Natal area.) What is this light part here? (Point to Central Cape area.) What do these show? (Point to rain-bearing (winter) arrows.)

G1 Climatic zones or rainfall zones.
G2 The areas where rain falls.

SW Cape - G1 Shows us winter rains - more winter rains there.
G2 Yes, this part show the places which get winter rains.
Natal area - G1 Many summer rains
G2 It shows us where these rain bearing winds, the places where they rain in summer.
Cent Cape - G2 Must be a dry place.
G1 Rain throughout the year.
Arrows - G1 Wind direction.
G2 Rain-bearing winds.
G1 Yes.

C1 Places that get rain in winter, summer and all the year round.
C2 And how much rain they get.

SW Cape - C1 The winter rains.
- C2 Yes.
- C1 Since its cold in winter for the sake of the rain - its along the coast also.
Natal - C2 Throughout the year we get rain.
- C1 Why, summer rains?
- C2 Summer, summer rains, yes.
Cent Cape - C1 Rain throughout the year.
- C2 Yes.
Arrows - C2 The winds.
- C1 The rain bearing winds in summer and winter.

T1 Rainfall zones of the RSA.
T2 Agreed.

SW Cape parts - T1 It shows us the quantity of rain that falls.
- T2 It shows us that this country gets its rain in winter.
Natal (dark) heavily, it shows us that rain falls in summer and how
- T2 Yes.
Central Cape - T1 It shows that this part does not get much rain.
- T2 Yes, I agree.

- Arrows - T1&2 Rain-bearing winds.
- PE1&2 Rainfall zones of SA.
- SW Cape - PE2 Zone which gets mainly winter rainfall.
- PE1 Yes.
- Natal - PE1 Zone which gets mainly summer rain.
- Central Cape - PE2 Zone which gets rains throughout the year.
- Arrows - PE1 Rain bearing winds.

8a. Look at the pictures at the bottom of page 29.
What are they?
What do they show?
What are the thick black lines?

G1 Its a graphic representation of rainfall.
 G2 Yes.

What do they show?

G1 The amount of rainfall per month.
 G2 Isn't it rainfall per season, lets say its winter?

Thick black lines?

G2 They show us the amount of rain.
 G1 In millimetres.
 C1 Shows how much rain, millimetres of rain...
 C2 And when we get the rain.
 C1 Its a graph.

Black lines?

C2 Months.
 C1 Rain.
 C2 How much rain in months.
 T2 Show how rain fall in a particular town.

But what are they - they have a name?

T1&2 Uncertain.

What would you call them if you were teaching your children in a class?

T1 The rain chart.

Would you also call them a rain chart T2?

T2 Yes.

Thick black lines?

T1&2 How heavy the rain falls in a month.
 PE1 They show rainfall zones in SA.
 PE2 No, rainfall in Cape Town and Mossel Bay.
 PE1&2 Show rainfall.

Thick black lines?

- PE2 Zones.
PE1 The measurement of rain.

- b. Tell about what the picture on the left shows.
When does Cape Town get most of its rain?
In which month does Mossel Bay get the least rain?
How much rain falls in that month?

Left

- G2 It shows the amount of rain per month in Cape Town.
G1 Yes.
G1&2 In June, in winter.

Mossel Bay

- G1 January.

How much?

- G1&2 25mm.
C1 The Mossel Bay rainfall in which month.

Least rain?

- C1&2 January.

How much rain falls in that month?

- C1&2 25mm in January.
C1&2 Cape Town - June.
T1 Cape Town.
T2 More rain in June.
T1&2 January.
T1&2 About 25mm.
PE1 June.

Why do you say that?

- PE1 Because the gap indicates that in June Cape Town gets the highest rainfall - its 110mm.

Mossel Bay?

- PE1&2 January.
PE1 25mm.

- 9a. Look at the picture at the top of page 30.
When is the rainy season in each picture? (Summer or winter?)

- G2 Summer.
G1 Generally summer.

Why?

- G1 Because you find more rain January up to March, October, November to December. Something goes there - more or less summer months.
C2 Summer because of January, February, March, April also summer September, October, November and December.
C1 Yes.
T1&2 In March, Summer P&N.

Why?

- T1&2 In January, there is too much rain in Pretoria in January and in Durban there is too much rain in March (P&N).
T1&2 From January to March is the summer season.

Durban PE1 Summer.
Pretoria PE1 Also summer.

What makes you say that?

- PE1 January, February, March and October, November and December are the summer months when the rain falls.

**b. Which rainfall zone is Durban in?
How did you work out for your answer?**

- G2 Summer rainfall zone.
C2 Agree.
C1 Is zone the place or the area? I'm not sure.
C2 Not sure.
T1 Rain falls in summer.

Yes, so which rainfall zone is Durban in then?

- T1 Durban gets mainly rain in summer, so the zone is the
the rain bearing winds in summer.

How did you work out your answer?

- T1 (No answer)

- PE1 It shows that Durban gets more rain. I don't know how whether I am asking or answering the question.

- PE2 Summer rainfall zone.

**10a. Look at the map on page 31.
What does it show?**

- b. Name one area which has more than 1000 millimetres of rain per year.**
c. How much rain falls in this area per year? (Point to Bophuthatswana region)

d. How much rain falls in East London per year?

G1 Shows average annual rainfall generally speaking to that particular area over a year.
(Long delay, appeared to be studying key) ... Durban.

G2 Yes.

G1&2 250-375mm.
750-1000mm.

a) Our annual rainfall.

b)C1 East coast.

C2 Durban.

C)C1&2 250-375mm.

d)C1&2 750-1000mm.

T1&2 Average annual rainfall.

T2 (Long delay) Durban.

T1 Yes, Durban.

c)T1&2 250-375mm.

d)T1&2 750-1000mm.

How did you work it out your answers?

T1&2 I used the scale .

T1&2N The scale, yes.

PE1&2 Average annual rainfall.

PE1 The eastern side.

Name of a town?

PE1 Transkei, Durban.

PE2 Yes.

PE2 250-375mm.

PE1 Yes.

PE2 750-1000mm.

Post-Reading questions

1. What are the two most important things this passage tells us?

G1 The rainfall at different places at different times. The causes thereof.

G2 Yes.

C1 The climate is the temperature and the rainfall.

C2 Yes.

T1 Rainfall.

T2 How much rain do we find in each place each year.

PE1 Currents.

PE2 The bearing winds ... the drought.

2. Is this possible in areas where there are thunderstorms? (Explain your answer.)

There are two mealie farms next to each other. On one farm the mealies are green and growing well. On the other farm next door, the mealies are dry and some are dead.

G2 Yes, I'm sure there can be a thunderstorm here in by town and the rain is falling and there is none in Peddie. And you find that where the thunderstorms fall - the crops die afterwards - they get rust and so on.

G1 Yes.

But that is far apart. What about in the same area?

G2 Yes it is possible.

C1 Yes, its similar to that - its raining to this part but not to that part.

C2 It also depends to the type of soil, clay soil, sandy soil - it maybe doesn't keep the water.

C1 It can be warm and dry.

C2 It depends to the build.

Lets say all things are the same. Is it still possible?

C2 It depends to those people who plough, how they care for the plants...

C1&2 Yes it is possible.

Why is it possible?

C2 The direction of the thunderstorm and the winds are blowing so if it comes this direction (East) the plants can stand - from that side (West) they will fall.

T1&2 No, it is not possible.

PE1 How far are these farms, just divided with a fence?

Yes

PE1 I think its possible. There is air that comes mature so maybe when that air may lose a lot of its moisture before crossing to another farm.

PE2 (No reply)

3. **What do you think is the main difference between:**

- a map showing rainfall zones?

- a map showing average annual rainfall?

(G1&2 and C1&2 only discussed the zone map)

G1 It tells about the amount of rain per month.

G2 The amount of rain falling in that particular area.

C1 So that area yields that type of climate.

C2 It tells us how much rain each zone gets and when it get rain.

C1 Areas like Durban get more rain and some areas get 250mm.

T1 Average will be the possible rainfall in that time and the rainfall zone is known or constant - a particular area gets so much rain -

the rainfall is permanent - if it is getting rain in winter if it is winter.

PE1 I should think on this map (annual average rainfall) there is plenty of rain on this (zones). I think the rain is scarce. As it has got the rain bearing winds, there are certain places that do not get rain.

PE2 The rainfall zone map tells us when do a certain area get rain. Does it get rain in winter or summer or all year round. And then this one, the average annual rainfall, is a measurement of rain in a certain area. How much rain.



REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF EDUCATION AND TRAINING

SYLLABUS

FOR

ENVIRONMENT STUDY

STANDARD 2

1983

STANDARD 2

ENVIRONMENT STUDY

A. AIMS

1. The pupil should realise that he is a member of a particular community and that he is bound by various ties to particular groups of people in that community, as they are represented, for example, in his home, his school, his church, his residential area and his tribe. These groups serve him directly or indirectly and he in turn owes them loyalty and co-operation. At a later stage larger loyalties can be developed.

It is educationally sound that the pupil in the primary school should develop a knowledge and understanding of his environment on the basis of actual experience. At this stage the pupil's experience of life is determined largely by social and economic influences to which he is subjected within the community in which he lives and moves. The experience which he has within his community should serve as a basis for an understanding of any other experiences which he may have and which are not connected directly with the life of his community.

2. The pupil should accept, in an intelligent manner, the fact that the welfare and progress of his community depends on the contribution made towards it by each of its members. He should, therefore, know how his own people and others earn a living; he should realise the value of the work which they do for the community and he should be convinced that he must work, if he wishes to lead a useful and contented life. He should realise that the welfare of the individual depends on the welfare of the community.
3. The knowledge which he gains should encourage him to take into consideration constantly the interests of other people. He must realise that his behaviour towards them will determine whether society will accept him as a dependable and useful person or not. He should be convinced that he cannot live and act as a detached individual in society, but that he is dependent on other people, and they in turn are dependent on him. The maintenance of good relations will depend on his attitude, and the good habits of conduct that he has developed in association with people of his own group, as well as with the people of other sections of the population.

Furthermore, he must realise that laws are necessary to the people of any community for harmonious living together. Consequently teaching should lead the child to do naturally, and therefore willingly, what society has prescribed as correct, good and commendable.

4. In the various study themes the following points should be borne in mind:
 - (a) The pupils must be made aware of the majesty, beauty and order in God's creation, and their sense of wonder must be stimulated.
 - (b) They must be led to a thankful and personal appreciation and acceptance of the gifts of God and the responsibilities of man towards these gifts.
 - (c) Similarly, the pupils must be made aware of the wonderful things created by man, and a sense of responsibility with regard to the preservation and further advancement of these must be developed.
 - (d) The pupils must be helped through their critical observations and thought to classify their world, to express themselves in language and to think purposefully.
 - (e) They must develop such skills as speech, reading, writing and drawing so that they are able through these to come close to reality and acquire and exercise an intelligent control over their world.
 - (f) Respect and tolerance for others must be aroused. Pupils must be taught to respect their own property and that of others, and to extend that respect to animals and plants.
 - (g) The pupils must be led to a high ethical standard by practising co-operation, courtesy, personal neatness, helpfulness, consideration, faithfulness, steadfastness and responsibility.
 - (h) Good working and study habits must be acquired and cultivated.

B. INTRODUCTION

1. Scope of the subject

In Standards 1 and 2 Environment Study incorporates in one subject the content of an initial, elementary study of the subjects Geography, History and Nature Study. Because it is informal and is firmly based on the principles of proceeding from the known to the unknown, it forms the best introduction to the formal study of these subjects.

For this reason no attempt is made in this syllabus to differentiate the subject-matter according to these formal subjects and to classify it as such, but the teacher should bear in mind that one of the chief aims is to lay the foundation for the more formal study of these subjects in later standards. For instance changes in the weather are observed, recorded, discussed and later classified carefully. This gradually leads to an understanding of the abstract idea of weather and eventually to that of climate.

The stages of observing, systematising or classifying should be quietly but consistently followed by the teacher, who must bear in mind constantly that she is gradually leading her pupils to develop their powers of thinking, reasoning and expression as well as of observation and appreciation.

Later this natural mental tendency to classify and systematise will induce pupils to become aware of, and to appreciate cause and effect, and it will train them to reason.

The scope and content of Environment Study is determined by the point of view that it is the young pupil who must learn to know and understand his environment in its widest sense. The scope of his study is therefore his social, economic, natural and physical environment, since these aspects make up the "world" in which he lives and moves.

2. General method

- (a) Because the teacher should make use of the current interests of the pupils and the special resources of the locality, it will necessarily follow that the type of work done will vary from school to school.
- (b) While the general scope of the work and the kinds of activities which should be common to all schools have been laid down, teachers are expected to pay more attention to those topics which are closely connected with the pupils' particular environment.
- (c) The subject should be marked by activity on the part of the pupils. Whenever possible they should be encouraged to find out things for themselves, to go and see how things are done or made, and where things are found, and to make collections of samples and illustrations for class museums and personal albums.
- (d) Much of the work suggested can be done during lessons in other subjects, e.g. during lessons in oral work in the languages, handwork, Health Education, gardening, etc. The possibility of such correlation should be kept in mind constantly by the teacher in the lower primary school. Attention is drawn particularly to the safety rules that appear in the Health Education syllabus.

- (e) Normally the pupil has a keen desire to know how and why things happen. The wise teacher will encourage her pupils to ask questions and will use many of these questions to indicate interesting activities. Some of these questions will suggest simple experiments and demonstrations which can be conducted in the classroom or on the school grounds.
- (f) Teachers in single-teacher schools and those responsible for grouped classes should note the slight modifications of the syllabus which are contained in footnotes at the end of the Standard 2 syllabus.

3. Time and period allotment

Four periods of 30 minutes each per week are allocated to Environment Study in Standard 1.

C. CONTENT

1. The environment of the pupil

This study should not go beyond that of the district and should be adapted to the pupils' environment. The term "district" should not necessarily be interpreted merely as the magisterial area but as the environment of a town, which is served by the town and which serve the town.

(a) Employment : Types of work in the environment

The different types of work done by the people in the area surrounding the school, the places where they work, and the contributions they make to the happiness and progress of the community.

Select any SIX of the following:

- (i) The chief and his councillors.
- (ii) The farmer.
- (iii) The minister of religion.
- (iv) The shopkeeper.
- (v) The builder.
- (vi) The teacher.

- (vii) Officers of the South African Development Trust.
- (ix) The doctor.
- (x) The nurse.
- (xi) The housewife.
- (xii) The railway worker.
- (xiii) The post-office worker.
- (xiv) The factory worker.
- (xv) The mine worker.
- (xvi) The traffic officer.

(b) Transport and communications

- (i) How the pupil, whether urban or rural, can move about easily in his area; urban transport services.
- (ii) Road safety: the pupil should distinguish between left and right; know the safest way to school and back; walk on the pavement or on the right side of the road (but giving way to traffic) if there is no pavement and understand the reason; dangers of playing in the street; danger points in roads in daily use; pedestrian crossings; traffic lights; traffic officers, scholar patrols and policemen, and how to ask for their help where necessary; the danger of railway and main road crossings; the necessary hand signals; rules governing the correct use of a bicycle or tricycle; dangers of livestock on the road. (Deal with aspects applicable to the pupil's environment).
- (iii) How the pupil can travel in the district; railways and road motor services; other means of travel.
- (iv) How goods are sent to and from our town. A visit to a station or bus halt and observation of the various activities there, the loading and unloading of goods and luggage, buying tickets, arriving and departing.

(v) Safety rules: Dangers of walking on railway lines; hanging out of carriage windows and over balconies; leaning against carriage or balcony doors; carelessness on the station platform and in the train.

(c) Introduction to maps

Simple model of imaginary school or home. (Use boxes or clay models for buildings, string for fence, etc.); map drawn on blackboard placed on the ground beside the model; smaller maps of the same model drawn on slates or in books. Plan or map of classroom. Map of the school and its immediate surroundings, showing roads or streets and neighbouring buildings. Simple map-drawing practice by pupils. Map, later, of the district. Use atlas colours for rivers, dams, hills, etc.

(d) Climate

Normal local weather conditions, rainy periods, the seasons (scientific explanation not required), direction (north, south, east, west), observation of clouds, mist, rain, frost, dew and winds. Length of day and night. Observation of the movement of the sun and changes in the length of shadows.

(e) Links with the places

Stories about two outstanding local Black personalities of the past; national holidays and celebrations, customs, legends and folklore, e.g. "The Lightning Bird", interesting place names (their origin in history and their meaning).

(f) Links with other places

(i) Where our roads and railways lead to.

(ii) Where the rivers in our district begin and end.

(iii) Neighbouring towns and our links with them. For rural pupils special attention must be given to the place which is their nearest business centre.

(g) Flora and Fauna (plant and animal life) of our district

General observational work, collections, etc., should be continued. The scope of the interests and activities should now cover a wider field.

- (i) Animals (other than domestic) found in the district, e.g. hares, meercats, monkeys, baboons, rock rabbits, jackals; where and how they live; why some are our enemies and some our friends; why some are protected by law; wild animals which have been exterminated in our district.
 - (ii) Birds in our district: where and how they live; those which are only visitors to our district; where they go when they leave us; why some birds are our enemies and some our friends; birds protected by law.
 - (iii) Kindness to animals: the work of the Society for the Prevention of Cruelty to Animals (S.P.C.A.). The laws prohibiting the collectin of birds' eggs and the catching of birds.
 - (iv) Seeds (mealies, beans, peas) and bulbs should be planted to enable pupils to observe what happens during the process of germination and during the subsequent growth of the plant. (A detailed study of germination is not required).
 - (v) Plants which are typical of the veld of our district: the names and recognition of a few of the best known plants such as aloes, euphorbia, thorn trees, khaki-bos, burrweed, thistle, grasses, etc.
 - (vi) Safety rules: poisonous wild fruits and plants.
- (h) The district as part of the province

Very brief treatment of the position of the district in relation to the province.

Recognition of signs on a simple map of our province: towns, rivers, railways, mountains and boundaries.

Point out such important mountains, towns and rivers as the pupils may have heard of.

The study of the province will be undertaken in Standard 3.

D. EVALUATION

Maximum marks 50.

Minimum pass mark 25.



REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF EDUCATION AND TRAINING

SYLLABUS

FOR

GEOGRAPHY

STANDARD 3

REPRINTED

1983

365

INTRODUCTION

SYLLABUSES FOR STANDARDS 3 AND 4

These syllabuses take effect as from the beginning of 1982.

1. The structure for both classes is as follows:

<u>Subjects</u>	<u>Standards 3 and 4</u>
Assembly	10 min. per day
Religious Education	5 periods per week
Music	2 periods per week
Physical Training	2 periods per week
Vernacular	7 periods per week
First Official Language	7 periods per week
Second Official Language	7 periods per week
Mathematics	7 periods per week
Health Education	2 periods per week
Geography	2 periods per week
History	2 periods per week
General Science	3 periods per week
First Optional Subject	2 periods per week
Second Optional Subject	2 periods per week
TOTAL PERIODS PER WEEK	50 periods per week

Assembly may at times be conducted for all classes of the school simultaneously, or for each class separately as decided by the principal.

Book Education/Library should receive attention after school hours or during the study periods.

Optional Subjects

Standard 3 Two of the following:

Arts and Crafts
Gardening
Needlework

Standard 4 Two of the following:

Arts and Crafts
Needlework
Gardening
Woodwork (only if facilities are available)

2. The Examination

<u>Subject</u>	<u>Marks</u>	<u>Time</u>
(a) <u>Vernacular</u>		
First paper	60	45 min.
Second paper	60	45 min.
Oral	30	
(b) <u>First Official Language</u>		
First paper	60	45 min.
Second paper	60	45 min.
Oral	30	
(c) <u>Second Official Language</u>		
First paper	60	45 min.
Second paper	60	45 min.
Oral	30	
(d) <u>Mathematics</u>		
First paper	50	30 min.
Second paper	100	60 min.
(e) Geography	50	30 min.
(f) History	50	30 min.
(g) General Science	100	45 min.
(h) Religious Education	100	45 min.
(i) Health Education	100	45 min.
(j) Arts and Crafts	Year mark out of 100	
(k) Gardening/Needlework	Year mark out of 100	
TOTAL	<hr/> 1 200 marks <hr/>	

3. Examination marks for both Standards

<u>SUBJECT</u>	<u>TOTAL MARK</u>	<u>PASS MARK</u>
Religious Education	100	40
Music	Not an examination subject	
Physical Training	Not an examination subject	
Black Language	150	60
First Official Language	150	60
Second Official Language	150	60
Mathematics	150	60
Health Education	100	40
Geography	50	20
History	50	20
General Science	100	40
Arts and Crafts	100 marks may be a Year Mark	40
Needle work	100 marks may be a Year Mark	40
Gardening	100 marks may be a Year Mark	40
Woodwork	100 marks may be a Year Mark	40
TOTAL	<u>1 200</u>	<u>480</u>

4. Minimum requirements for a pass

A candidate -

- (a) must obtain a minimum of 480 out of the total of 1 200;
- (b) must pass the Black Language and English or Afrikaans with a minimum of 40%;
- (c) may not have less than 40% in more than two subjects.

SYLLABUS

FOR

GEOGRAPHY

STANDARD 3

(FROM 1982)

A. AIMS

1. To lead the pupil to a closer acquaintance with:
 - (a) his own country and its people
 - (b) other lands and peoples of the world, and
 - (c) the natural phenomena of the earth in so far as he is able to understand them.
2. To enable the pupil to acquire some facility in the use of geographical aids such as posters, pictures, graphs, maps, the atlas and the globe.
3. To develop in the pupil the power to reason and make simple deductions based on geographical knowledge previously acquired.
4. To help the pupil to become aware of the definite relationship which exists between man and his environment and to understand that man's activities and ways of living are really his efforts to adjust himself to his surroundings and to use to advantage the resources available to him.
5. To develop in the pupil a concept of common humanity by:
 - (a) leading him to take an interest in national problems of his own country
 - (b) encouraging a sympathetic attitude towards other races and their problems and
 - (c) creating a clearer understanding of the interdependence of the peoples of the world.
6. To stimulate an active interest in daily occurrences as depicted in newspapers, magazines, radio reports and television broadcasts.

7. To cultivate in the pupil a sense of appreciation of, and reverence for, the beauty and wonders of nature, consequently making his visits to other parts of his own country and to other countries richer and more purposeful experiences. The need for conserving the natural environment and guarding against pollution should be continually emphasised.

B. INTRODUCTION

1. Geography is the study of the relationship between man and his environment; and it is absolutely essential to have a knowledge of the subject if man desires to adapt to the changing world he lives in and to have an intelligent grasp of daily occurrences.
2. MAN with his God given ability should always be the focal point of study and the relationship between man and his environment should continually be emphasised.
3. The teacher should continually question himself why he is teaching the pupils a specific section of the syllabus. Above all, the pupils should enjoy Geography.
4. It is essential for the teacher in each standard to study the syllabus for the previous and the following standards in order to avoid overlapping and to determine the depth of the instruction.
5. The subject matter may be dealt with either systematically or thematically.
6. Short assignments and written tasks which encourage the pupils to do reference work should regularly be done in connection with any aspect of the syllabus and planned excursions to promote observation are essential.

C. CONTENT

1. Newspaper Geography

This should be started at the beginning of the year. Interesting news items should be cut from newspapers and pinned onto a board. The items should be of geographical interest and if possible related to the syllabus and should be easily understood by the Standard 3 pupil.

A map of Southern Africa outline should be pinned onto the board and the cuttings pinned around the map. A length of coloured cotton or wool should be pinned from the cutting to the place on the world map to which the cutting refers.

Pupils should be encouraged to provide newspaper cuttings. Cuttings should be replaced as often as possible. Ensure that all pupils read the cuttings by occasionally setting simple test questions on them, or by discussing them briefly in class from time to time.

Tape recordings of newsbroadcasts or actual newsbroadcasts can be played to the class for discussion. In many cases magazine articles may also be used in place of newspaper articles.

2. Mapwork and Practical work

(a) Direction

- (i) 8 Main directions: North, South, East, West, North-east, North-west, South-east, South-west. (2)
 - (ii) directions with the school as the central point, of hills, buildings and roads. (2)
- (b) Weather observations. (2 periods - 1 for drawing of chart, 1 for discussion). (2)
- (i) The class constructs with the help of the teacher, a chart on which observations on the weather must be recorded;
 - (ii) observations are made for two months of the year, namely February and August. These have been chosen as being as close to mid-summer and mid-winter as is possible;
 - (iii) observations are recorded at the start of each Geography period during February and August;
 - (iv) the following observations are to be made:
 - (1) Temperature - hot, cold or mild (stress day temperatures).
 - (2) Wind - summarise the various wind directions and represent them in a wind-rose.
 - (3) Cloud cover - many clouds, few clouds, no clouds.
 - (4) Rainfall - Heavy rain, light rain, no rain.

- Lightning and thunder, no lightning and thunder.

(5) Frost, dew and mist - Record when it occurs.

N.B. Any discussion on the observations must be limited to description only. Pupils should be encouraged to describe what they have observed with regard to the weather. No attempt should be made to explain any of the observations.

(c) Day and Night - Simple experiment showing day and night using a torch and a circular object e.g. tennis ball, orange, globe. (1)

(d) Map reading. (2)

3. Republic of South Africa

(a) Position

Use a map of the Republic of South Africa to teach the following:

(i) Position in relation to the equator and the poles. (1)

(ii) Position in the continent of Africa. (1)

(iii) Position in relation to the most important continents and oceans of the world. (1)

(iv) The size of the Republic of South Africa in relation to other known countries (use the globe). (1)

(b) Build

(i) Use simple diagrams and or models to teach the following concepts:
coastline, plateau, escarpment, plain. (2)

(ii) Use a map of the Republic of South Africa to show the following:

(1) The coastline and coastal plain. (1)

(2) The Little Karoo and the Great Karoo. (1)

(3) The Plateau. (1)

(4) Mountain Ranges. (1)

(5) The eastern low-lying part. (1)

(6) Most important rivers. (1)

(c) Climate

- (i) The main rainfall regions all year round, summer and winter rainfall regions; regions of high rainfall and regions of low rainfall. (2)
- (ii) Temperature - two simple maps showing summer and winter temperatures. (1)

(d) Natural vegetation

- (i) Study only the situation of the main vegetation regions giving an example of each vegetation type e.g. Savanna - grass. (2)

(e) Water resources and the preservation thereof

- (i) Main rivers and dams. (2)
- (ii) Preservation of water resources through:
- (1) Non-pollution. (1)
- (2) Careful use of water. (1)

(f) Human activities and products (emphasise distribution, types and uses).

- (i) Stock farming - choose one of the following: beef, dairy, mutton, wool, karakul, angora goats and pigs. (3)
- (ii) Arable farming: choose one of the following: wheat, maize, sugar cane, vegetables (one type), fruit (one type), coffee and tea. (3)
- (iii) Forestry. (2)
- (iv) Mining: choose one of the following: gold, diamonds, coal, copper and iron ore. (3)
- (v) Fishing. (2)
- (vi) Manufacturing industries
- (1) Show on a map the five most important areas of concentration of manufacturing industries; (1)

- (2) study one of the following industries in one of the above areas: motor, textiles, paper and printing, leather and cement. (3)

(g) Transport

Methods of transport and the most important traffic routes. (3)

(h) Population

(i) The different population groups; (1)

(ii) distribution of population outline and simple explanation. (2)

(i) The beauty and preservation of:

(i) Plant life; (1)

(ii) animal life. (1)

4. Independent states and self-governing territories

Use a map to teach the following about each independent state and self-governing territory: Name, Ethnic group, Position, Capital. (5)

TOTAL PERIODS = (60)

D. EVALUATION

One examination paper (thirty minutes)

In this examination short type questions must be set in all sections of the syllabus (listed below) in order to cover as much of the syllabus as possible.

1. Mapwork and Practical work (10 marks)

2. The Republic of South Africa: Questions must be set on each of the sub-sections in the syllabus. At least one map questions must be included. (40 marks)

TOTAL 50 marks

MINING IN SOUTH AFRICA

We need raw materials

What do we need to make the desks in the classroom? We need wood and iron nails or screws. What do we need to build your school? We need wood and bricks which are made with soil and water. We need iron and glass for the windows. Water, wood and iron are raw materials. Some raw materials like iron come from mines which miners dig in the ground. Raw materials which come from mines are called minerals.

Remember: We need raw materials to make things.


Some raw materials are minerals which come from mines.


Mines give minerals.


Minerals and Mines


When you walk on the ground in some places in South Africa you are walking on coal. Deep in the ground under your feet there is coal. In other places there is iron or copper or there are diamonds. In other places there is gold. Gold, iron, coal and diamonds are called minerals and they come from under the ground. They come from mines which men have dug into the ground to get these minerals.


On the map of South Africa below:

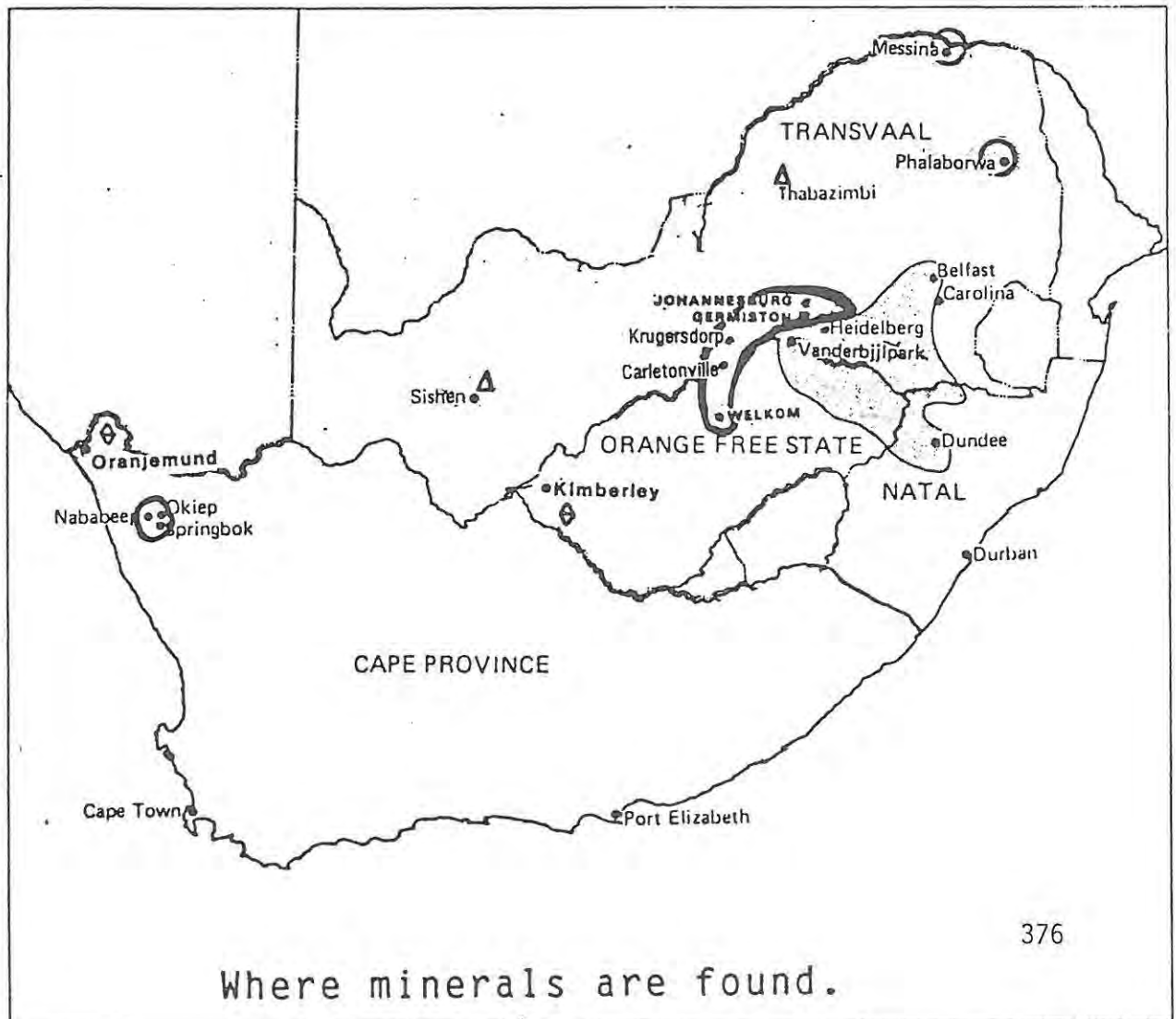
This arc  shows where there is gold.

This shape  shows where there is coal.

This diamond shape  shows where there are diamonds.

This triangle  shows where there is iron.

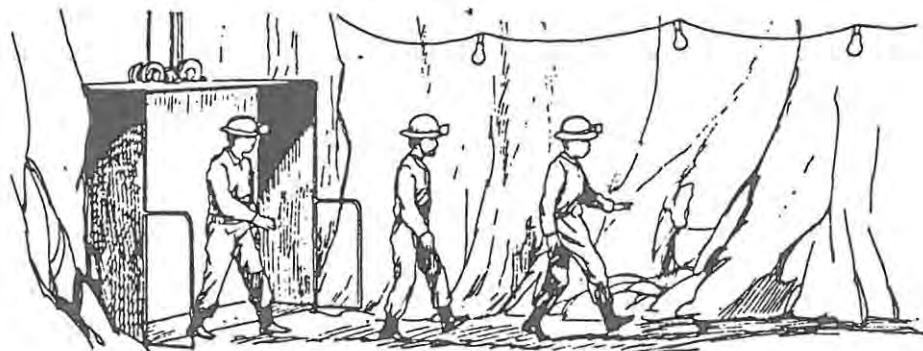
This circle  shows where there is copper.



Gold

Which towns and cities are in places where there is gold? Look at the shape of the arc on the map on page 2 and read the names inside the arc. They are Johannesburg, Germiston, Krugersdorp, Carletonville and Welkom. These are all gold mining towns and cities. Johannesburg is the biggest city in South Africa. People all over the world know about Johannesburg. Before men knew about the gold under the ground there were no towns or cities in these places. After gold was found people came to dig the mines and the towns grew up very quickly.

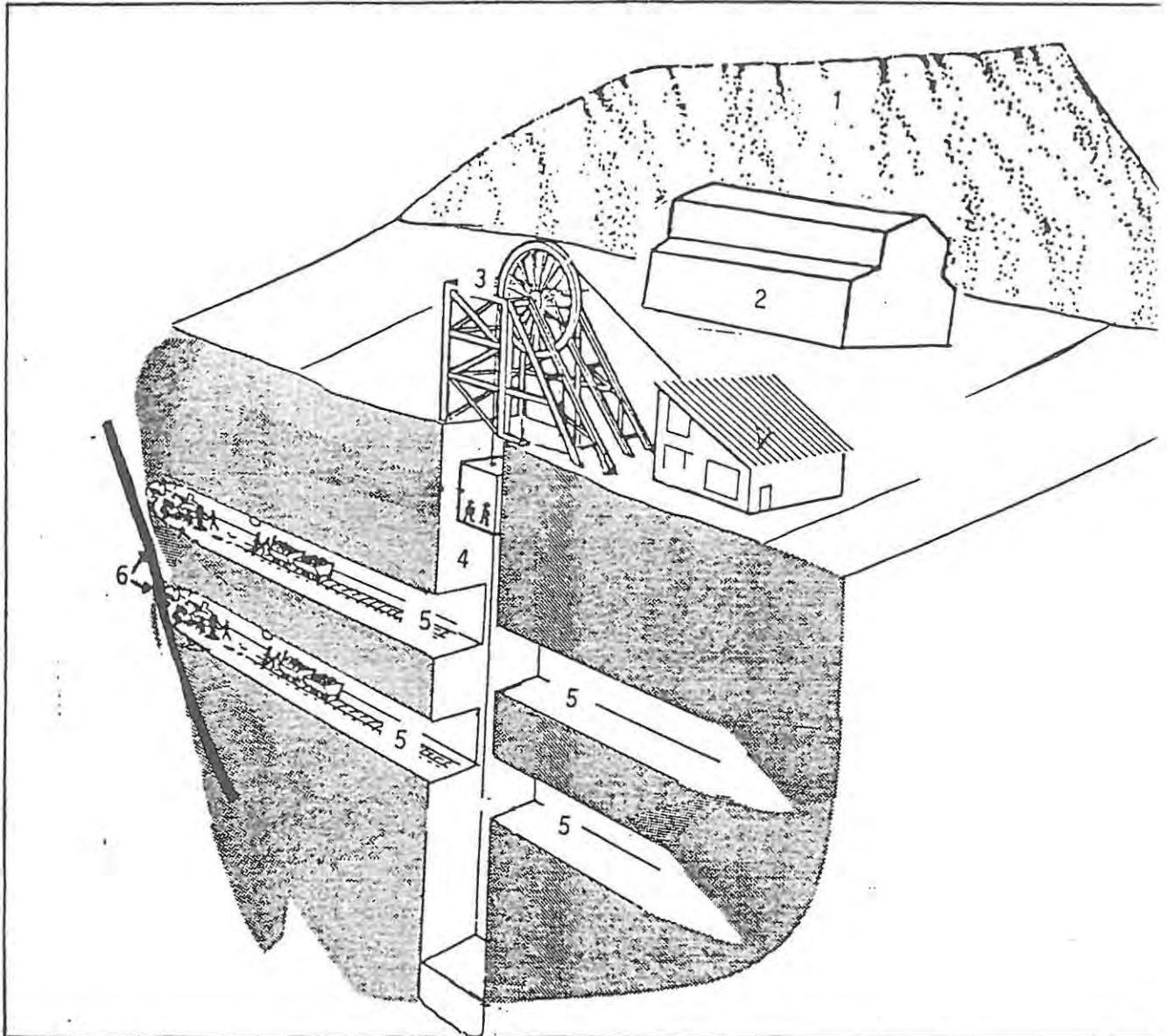
Some gold mines in South Africa are the biggest and the deepest mines in the world. In some mines men go down 3000 metres into the ground. (3000 metres is 3 kilometres.) When men go down so deep into the ground then it is very difficult to get the gold and it is very dangerous. The men work in tunnels and great rocks can come loose and fall on them. The men go down a shaft into the mine in a box which is called a skip. The rope which holds the skip can break and then the skip falls to the bottom of the shaft. Sometimes the miners who are in the skip die when this happens. The engineers who work on the mines do many things to protect the miners and stop accidents. For example, they check the ropes that hold the skip so that they do not break. They also help the miners to find the best way to dig rocks out of the tunnels. Another thing the engineers do is to make sure that all the miners wear a thick, hard hat which protects their head when rocks fall.



These miners are going out of the skip to the place where they will work under the ground. You can see their hard hats.

What does a mine look like?

Here is a picture of what a mine looks like.



1. is the mine dump.
2. is the reduction works where they crush the rocks.
3. is the headgear which lifts and lowers the skip.
4. is the shaft which goes down into the mine.
5. shows the tunnels where the miners dig for gold.
6. is the line of gold. It is called a gold reef.

The picture on page 4 shows the mine on top of the ground and also the mine under the ground. Look at number 4 in the picture and see the men going down in the shaft in a skip. They get out of the skip and go into the tunnels which have the number 5 in the picture. They walk to the end of the tunnel to where there are rocks which have thin lines of gold in them. The men dig out the rocks and put them into the skip which goes up the shaft to the top of the mine.

The thin, flat line of gold which is in the rock is called the reef. Look at number 6 in the picture on page 4. The arrows point at the gold reef in the picture. The reef goes down deep into the ground. It does not go straight down. It goes at an angle like this:



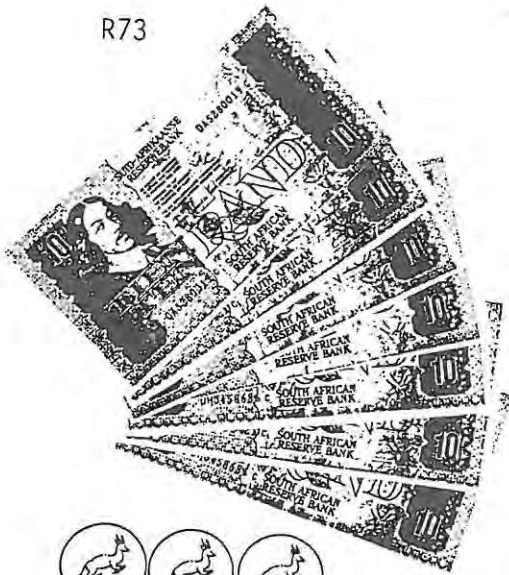
That is why there is one tunnel underneath another tunnel. The tunnels go deeper and deeper so that miners can get the gold.

On top of the ground you can see the buildings and the high heap of sand called a mine dump. When the rocks with the gold are crushed into small pieces there is much sand left over and this makes the mine dumps.

Gold brings much money to South Africa

People in South Africa take gold from the mines over the sea to people in other countries who buy gold. South Africa sells the gold and also diamonds and other goods. With the money from the gold, diamonds and other goods, South Africa buys ships, machinery, books, motor cars and other things which we need. South Africa must have this money which is many hundreds of rand every year. If you take just R100 of that money (think of one lot of R100 in that money) then this picture shows that gold brings much more money than selling diamonds or other goods. So gold is important for all of us.

R73



This money comes from selling gold.

R24



This money comes from selling goods.

R3



This money comes from selling diamonds.

Many men who work on the mines live in South Africa. Others come from Lesotho, Transkei and other countries. They earn money which they send to their families to buy food and clothes.

Things to do

1. Here is a list of things which we use:

Write this list in your book.

tables

jerseys

door

tyres

shirts

bricks

Here is a list of raw materials:

cotton

water

wool

soil

rubber

wood

The things we use are made from raw materials. Choose the right raw material for each thing in the list you have written in your writing book. Write the raw material next to the thing that is made from it.

2. Write this list of names of towns in your book. Next to each one write the name of the mineral which is mined there.

Welkom

Phalaborwa

Dundee

Johannesburg

Vanderbylpark

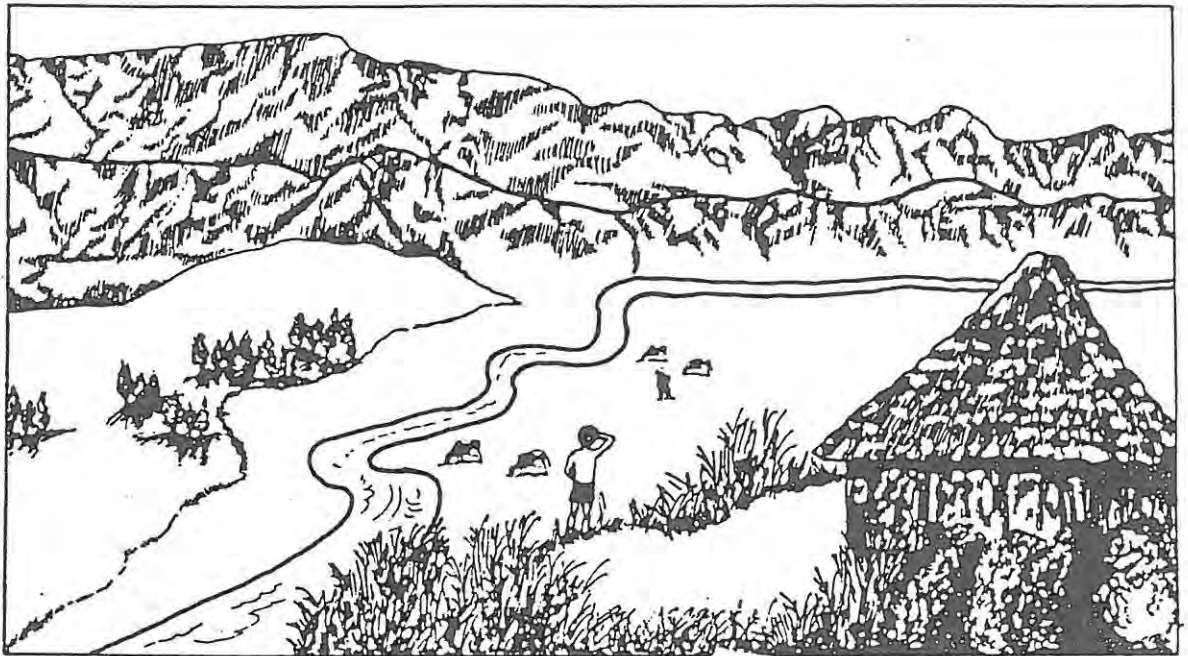
Belfast

Germiston

THE LAND OF SOUTH AFRICA

1. What the land looks like

Look at this picture of a boy standing outside his father's house.



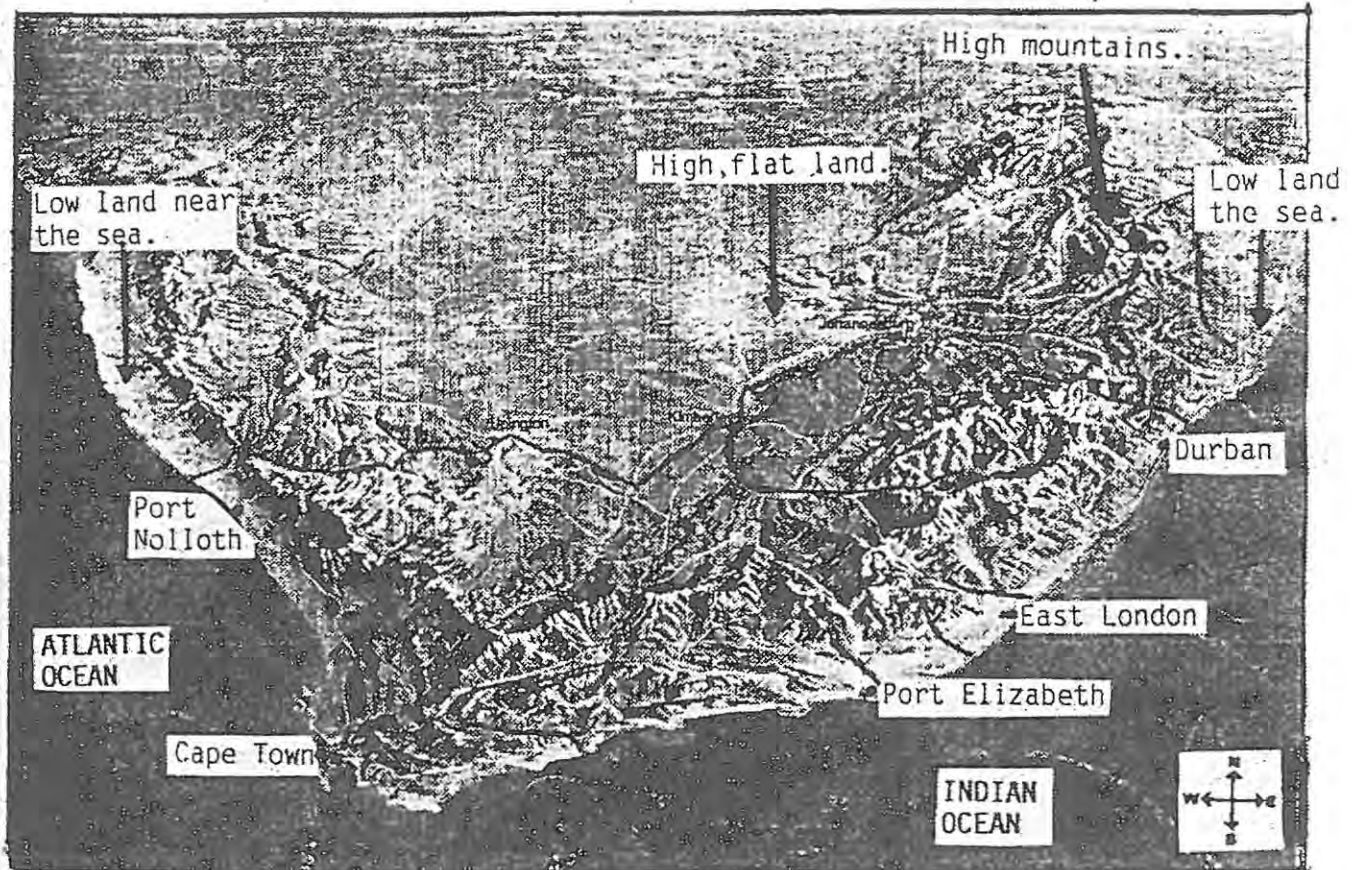
This boy lives in KwaZulu. His house is on a hill. When he stands outside he can see hills, valleys and mountains. There is a river at the bottom of the valley. There are also cattle eating grass on the flat land near the river. In KwaZulu there are many hills and high mountains.

In Bophuthatswana the land is flat in many parts. There are not many mountains and they are not high. So the land is different in different parts of South Africa.

When you stand outside your house, what do you see?

2. What the land of South Africa looks like from high up in the sky

A man who goes high up in the sky in a space rocket can look down and see the whole of South Africa. Here is a picture of what he can see when he looks down at the land of South Africa.



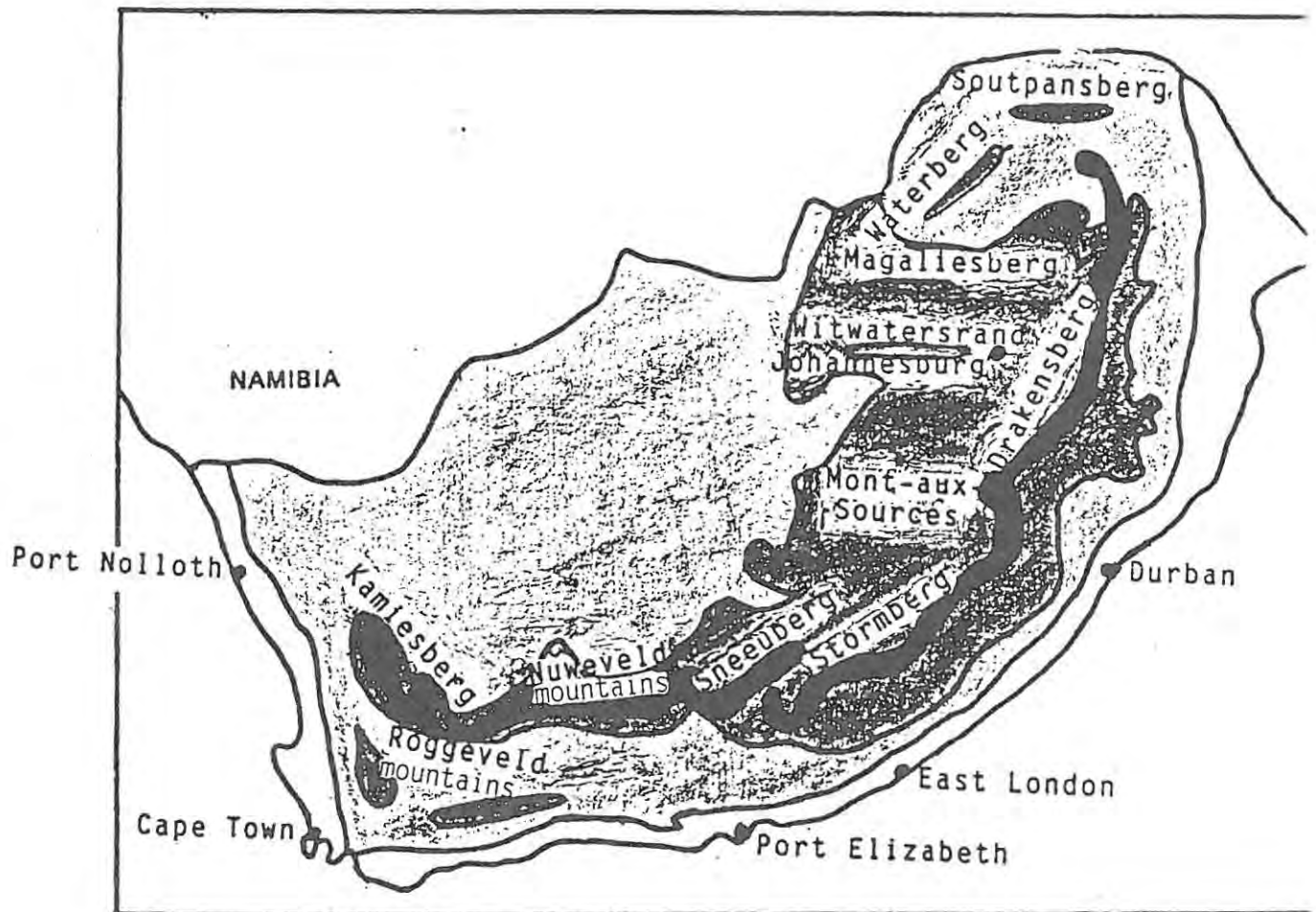
What the land of South Africa looks like.

He can see the high mountains in the east and the south and the flat land in the middle. He can see the rivers in the south, the east and the west. This picture shows the land, the rivers and the oceans of South Africa. But it also shows where there are high parts and low parts on the land. It is a picture of the relief of South Africa.

Remember: A picture of the relief of South Africa is a picture which shows the high and low parts of the land of South Africa.


3. A relief map shows the relief of South Africa


Look at this relief map of South Africa. It shows the same land that is in the picture of the relief on page 2.



Look at the next page and see how this relief map shows the high parts and the low parts of South Africa.


The high parts


 This shows that there are very high mountains. Look at the long line of high mountains in the east and the south.

 This shows two things:

- 1) On the east side of the high mountains there are steep slopes and lower mountains which go down to the land near the sea.
- 2) On the other side of the high mountains the land is high but it is flat.

The low parts

 This shows that there are low mountains and hills with flat land between them.

 This shows that the land is low and it is mostly flat. You can see that it is near the sea.

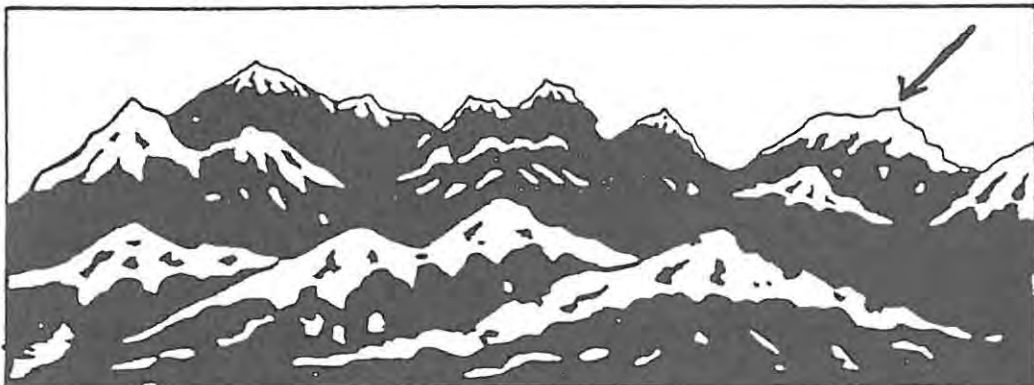
Remember: On the relief map on page 3, the black parts are high and the white parts are low.

4. The names of the four main parts of the relief of South Africa

The very high mountains

Look at the line of the high Drakensberg mountains on the map on page 3. A line of mountains like the Drakensberg mountains is called a **range** of mountains. The Drakensberg and the Stormberg are the two main mountain ranges in the east. In the south these are the main mountain ranges: Sneeuberg, Nuweveld mountains, Roggeveld mountains and Kamiesberg.

The line along the top of the mountain ranges in the east and the south is the **escarpment**. Here is a picture of a part of the escarpment. The arrow shows the line of the escarpment along the top of the high mountains.



The highest mountain on the escarpment is Mont-aux-Sources in Natal. We find out how high the top of a mountain is by measuring how high it is above the level of the sea. The lowest land is next to the sea. Mont-aux-Sources is 3480 metres above the lowest land at sea-level.

Remember: The escarpment is the line along the top of the highest mountains.

The high flat land

The high flat land on the other side of the escarpment away from the sea is the **plateau**. Another name for the high flat land of the plateau is the "table-land".

There are some low mountains on the plateau. Look for these mountains on the relief map on page 3:

The Witwatersrand near Johannesburg

The Magaliesberg

The Waterberg

The Soutpansberg

These mountains are not on the escarpment.

Remember: The plateau is high flat land in the middle part of South Africa.

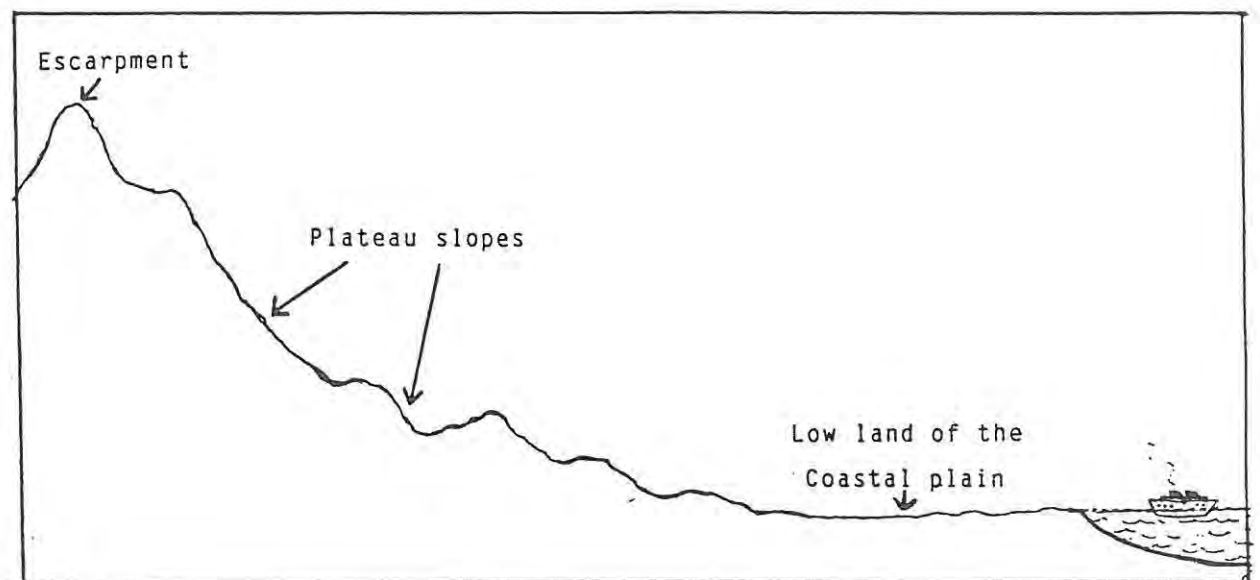
The low land near the sea

Look at the low land near the sea in the picture on page 2. The **coast** is the edge of the land where the land meets the sea. These places are on the coast of South Africa: Durban, East London, Port Elizabeth, Cape Town and Port Nolloth. The low land near the sea is called the **coastal plain**.

Remember: The coastal plain is the low land near the sea.

The land between the escarpment and the coastal plain

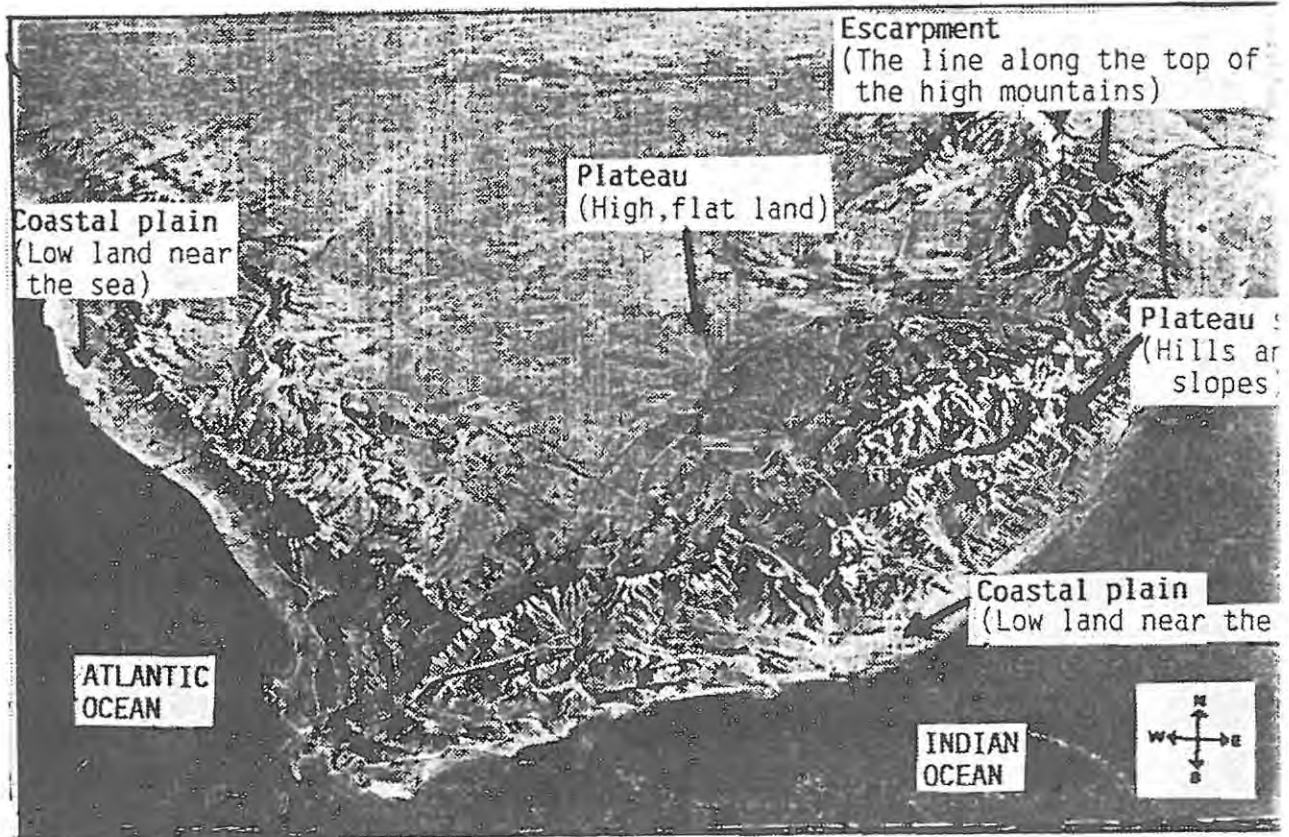
Here is a picture of the land between the escarpment and the coastal plain. It is called the plateau slopes.



The land of the plateau slopes goes up from the coastal plain to the high mountains. If you climb up from the coastal plain to the escarpment, then you are climbing up the plateau slopes.

Remember: The plateau slopes are where the land goes up from the coastal plain to the escarpment.

Now you know the four main parts of the relief of South Africa. Here is the picture of the relief of South Africa again. But now it has the names of the parts of the relief on it:



The RELIEF of South Africa.

Task:

Fill in the missing words.

When you are walking on the land near the sea you are walking on the _____ . When you climb up to the high mountains you are climbing up the _____ . When you get to the top of the high mountains, you are standing on the _____ . When you look at the land on the other side of the high mountains, you are looking at the _____ .

THE WEATHER IN SOUTH AFRICA

1. The weather changes

What is the weather like today? Look outside and see. What was the weather like yesterday? If the weather has changed then today is not like yesterday. Perhaps the weather today is rainy and wet and yesterday it was dry and there was no rain. When the weather is rainy then people wear raincoats to keep their clothes dry. When the weather is dry then people don't need raincoats.

We change our clothes when the weather changes. When it is cold we wear warm clothes. When it is hot we don't need to wear warm clothes.

The weather changes between winter and summer. In summer most days are hot but some days are cooler. In winter most days are cold, but some days are warmer. So the weather changes from winter to summer. Sometimes it changes from one day to the next.

When we tell about the weather

on all the days of winter

or all the days of summer

or all the days of a year, then we are talking about the

climate of a place or a country. For example, the climate in Cape Town is cold and rainy in winter and hot and dry in summer.

Remember: The weather is changing all the time.
 The climate of a place is the story of the weather
 in winter or summer or for the whole year.

2. The climate is different in different places

In Bophuthatswana most of the rainy days are in summer. So the climate in summer is hot and on some days it is rainy and wet. In Cape Town there is very little rain in summer. So the climate in summer is hot and dry.

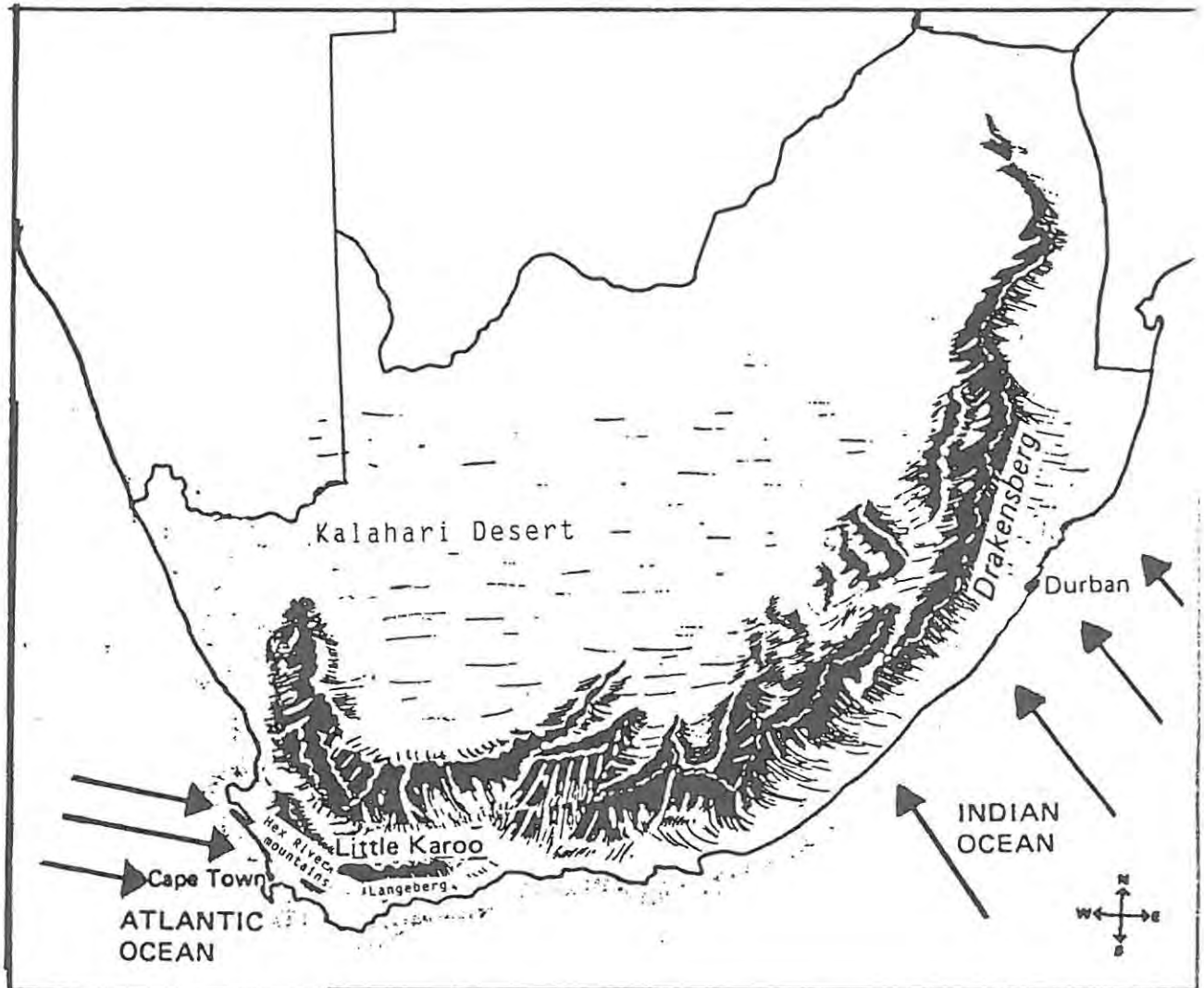
In Cape Town most of the rainy days are in winter. So the climate in winter is rainy and wet and cold. In Bophuthatswana there is very little rain in winter. The climate in winter is cold and dry with very little rain. So the climate is different in different places.

Remember: In some parts of South Africa it is rainy in
 summer. In some parts it is rainy in winter.

3. The wind brings rain to some parts of South Africa

People who live in Cape Town and Durban live near the sea. When they feel the wind blowing from the sea to the land, they know that it will bring clouds to the land. When the wind brings many big clouds, the people know that it can be rainy.

Here is a map of South Africa. Find Cape Town and Durban on the map.



The arrows on the map show the winds which are blowing from the sea to the land. These winds often bring rain to the land so they are called rain-bearing winds.

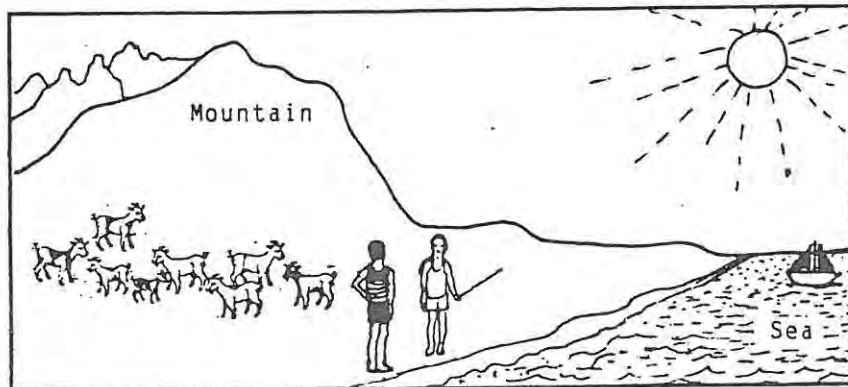
Look at Durban on the map. The rain-bearing winds are blowing off the Indian Ocean. They bring rain to Durban from the Indian Ocean. In Cape Town the rain-bearing winds blow off the Atlantic Ocean. They bring rain from the Atlantic Ocean.

Remember: Wind which blows off the sea often brings rain.
Winds which bring rain are rain-bearing winds.

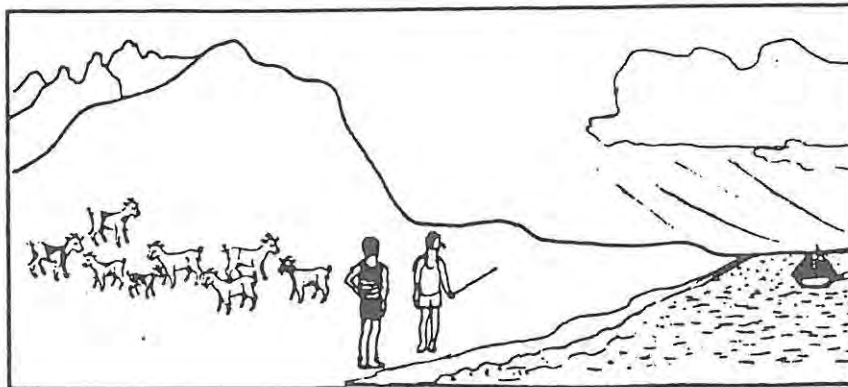
4. Some parts of South Africa get a lot of rain

Cape Town is a place which gets a lot of rain. There are two things which help to make the weather rainy and wet there. The first thing is the rain-bearing wind. The second thing is that there are high mountains near Cape Town. Look at the map on page 3 and see the Hex River mountains and the Langeberg mountains.

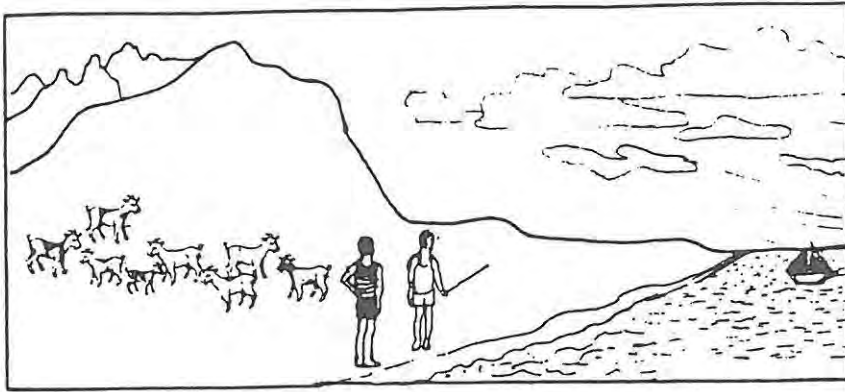
Here is a picture story about two boys looking after their father's goats. It shows you how the rain-bearing wind and the high mountains make the weather rainy and wet.



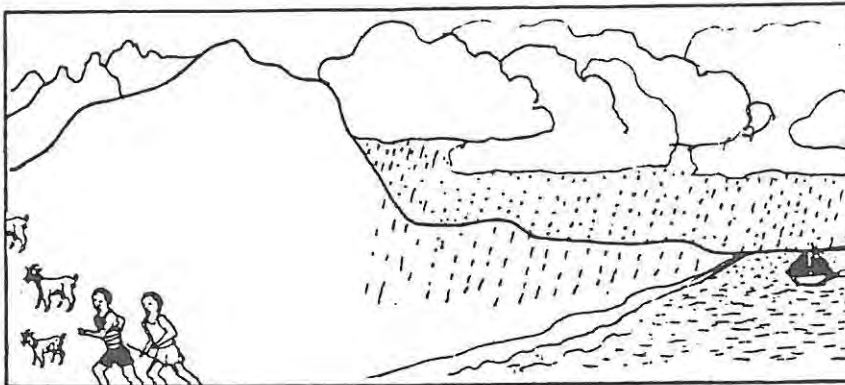
The sun is shining. It is a dry day. Two boys are looking after their father's goats.



The wind starts to blow. The boys can see big clouds over the sea. (Remember, clouds are made of very small drops of water).



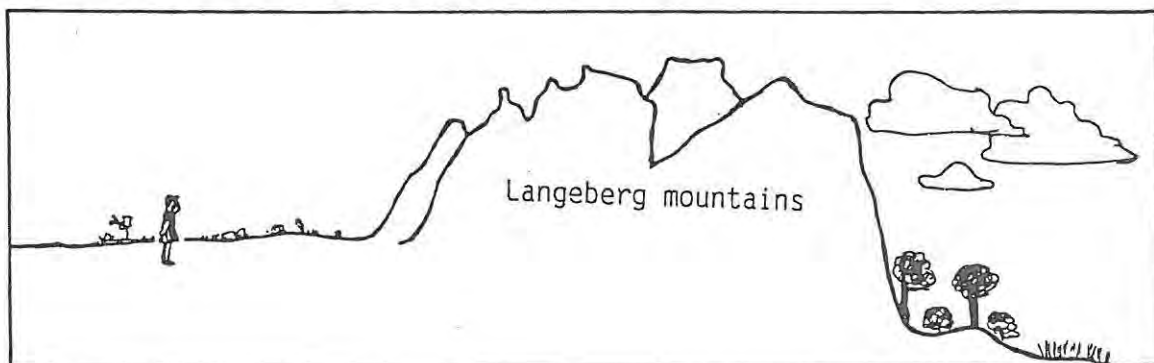
Now they can see that the wind is blowing many big clouds over the land. The wind blows the clouds towards the mountains.



The wind blows the clouds against the mountains. When the clouds come near the mountains, drops of water fall out of the clouds. It begins to rain. The boys run home so that they do not get wet.

5. Some parts of South Africa are dry because they get only a little rain

Here is a picture of the land on the other side of the Langeberg mountains near Cape Town. It is the Little Karoo.



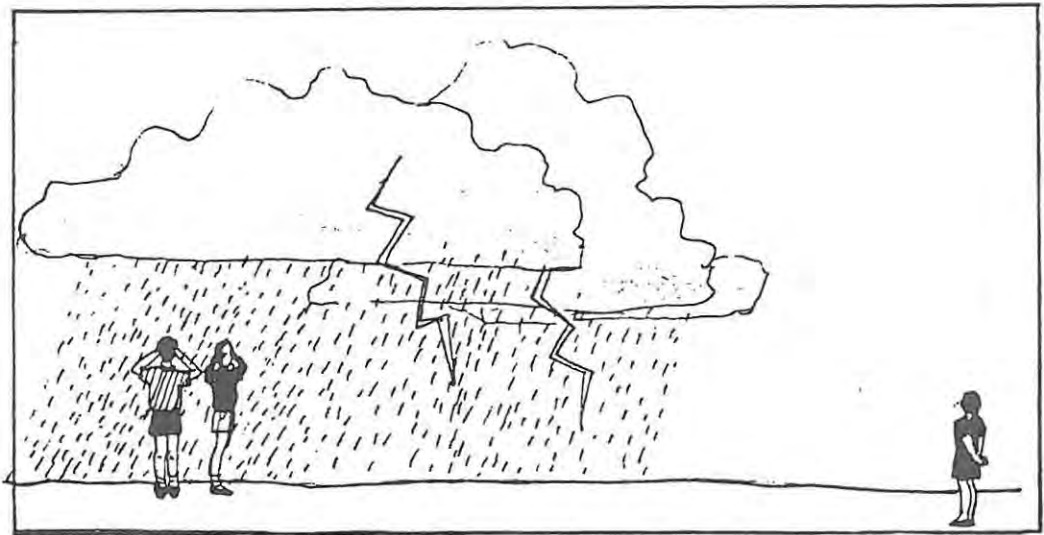
The mountains stop the big clouds from getting to the Little Karoo. So it is often dry in the Little Karoo when it is wet in Cape Town. Look at the map on page 3. You can see the Little Karoo on the other side of the Langeberg mountains.

Remember: The most rain usually falls on the land between the sea and the mountains.

If the clouds do not reach the land on the other side of the mountains, it is dry.

6. Some dry parts do not get rain from rain-bearing winds

Bophuthatswana is a dry part which does not get rain from rain-bearing winds. When it rains in summer there are big dark clouds in the sky and the people hear the noise of thunder and see lightning which flashes. When there is thunder and lightning and rain together it is a **thunderstorm**. Here is a picture of what happens when there is a thunderstorm.



The three children in the picture can hear the noise of thunder and see the flashes of lightning. The two boys are getting wet because rain from the thunderstorm is falling where they are. But the girl is dry because the rain is not falling where she is. So when there is a thunderstorm there is rain in some places and other places stay dry.

When there is no rain for a long time in the dry parts, the plants and animals die because there is no water for them. We say that there is a **drought** when there is very little rain for a long time.

Remember: A **drought** means a time when there is not enough rain to give people and animals water to drink.

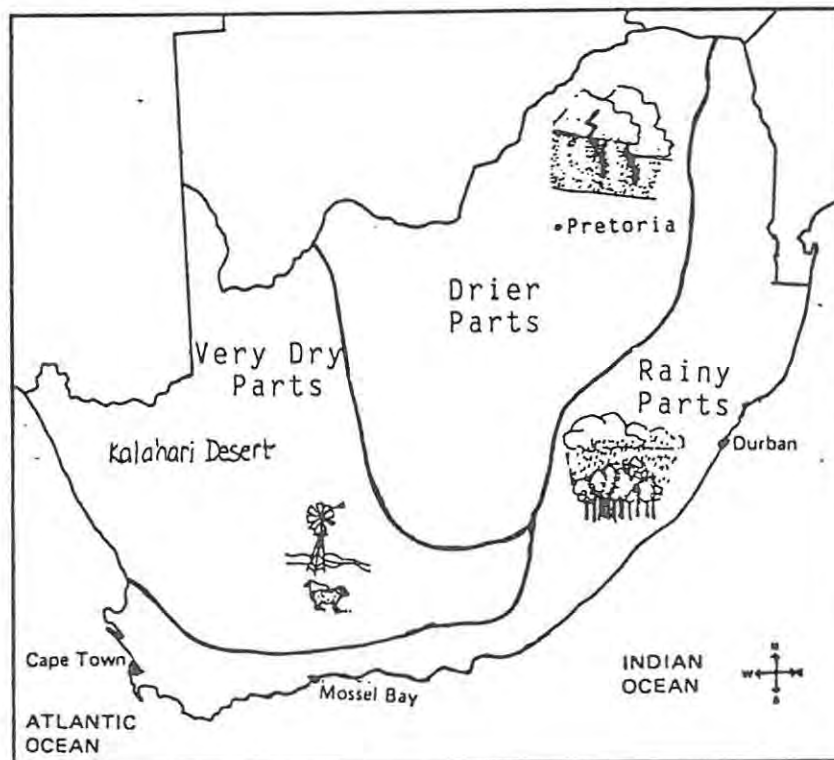
7. The dry parts of South Africa

Look at the map of South Africa on page 3 and find the Atlantic Ocean. It is on the west side of South Africa. The land on the west side near the Atlantic Ocean is very dry. There are only a few plants and animals there because it is dry all the time. The driest part is the Kalahari Desert where there is dry sand in many places and only a few trees and a little bit of grass.

Remember: The dry parts of South Africa are on the west side.

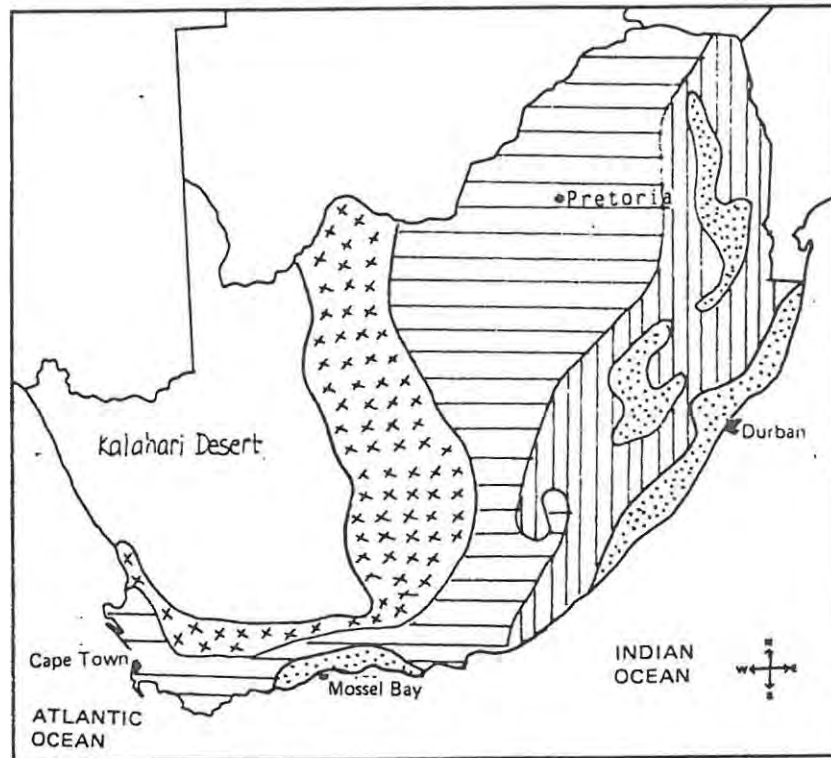
8. The rainy parts and dry parts of South Africa

Here is a funny picture of South Africa. It shows the rainy parts, the drier parts and the very dry parts.



Look at the funny picture above carefully. The rainy parts are in the south and on the east sides of South Africa. The drier parts are in the middle and the driest parts are on the west side.


Here is a real map of South Africa. It also shows the rainy parts, the drier parts and the driest parts. The map below shows how much rain falls in these parts in a year.




This map shows how much rain falls in different parts in a year.


This is how this map shows us how much rain falls in a year:

1. Places which get a lot of rain


 This shows that these places get a lot of rain. It is very wet. More than 1000 millimetres of rain falls there in a year. (We will see later how we can measure how much rain has fallen.)


 This shows that these places get quite a lot of rain. It is wet. Between 750 to 1000 millimetres of rain falls there in a year.

2. Places which are not very wet and not very dry

 This shows that these places are not very wet and not very dry. Between 375 and 750 millimetres of rain falls there in a year.

3. Places which get little or no rain

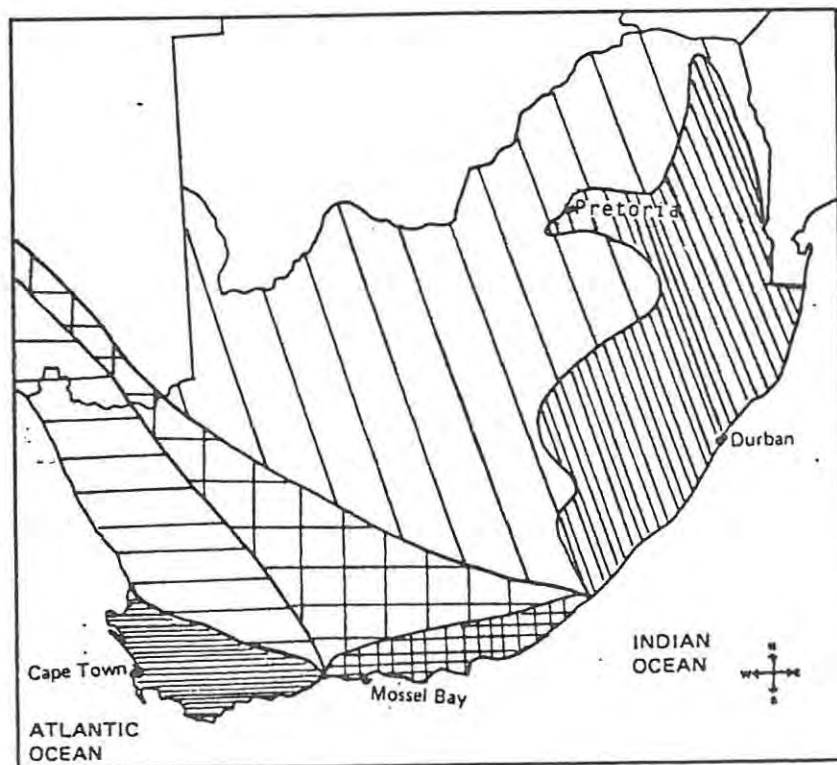
 This shows that these places are dry. There is very little rain there. This part gets 250 to 375 millimetres of rain in a year.

 This shows that these places are very dry. There is little or no rain there. These parts get 125 to 250 millimetres of rain.

Remember: The wettest parts are on the east side of South Africa.
Africa.
The driest parts are on the west side.

9. Different places get rain in different seasons


Here is another map which tells about rain in South Africa. It is different because it shows the times in the year when the rain falls. Some parts get rain in summer. Some parts get rain in winter. Other parts get rain in winter and summer.




This map shows when rain falls in different parts.


On the next page you can see how this map shows the times in the year when the rain falls.


1. Places which get summer rain

 This shows that in summer a lot of rain falls in this part.


 This shows that in summer only a little rain falls in this part.


2. Places which get winter rain

 This shows that in winter a lot of rain falls in these parts.

 This shows that in winter only a little rain falls in this part.

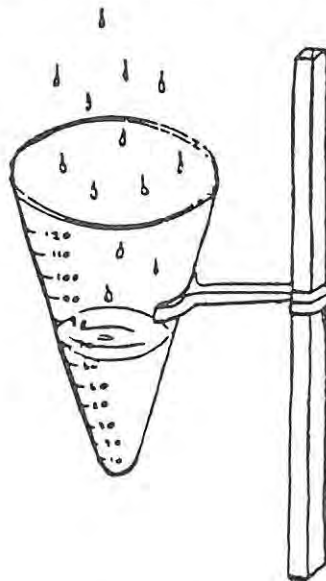
3. Places which get winter and summer rain

 This shows that in winter and summer there is a lot of rain in this part.

 This shows that in winter and summer there is only a little rain.

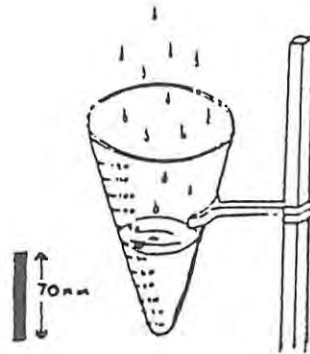
10. How we can measure how much rain has fallen

If you want to measure how much rain falls in summer and winter in your town you will need a rain gauge. A rain gauge is open at the top like a cup so that raindrops can fall into it. Here is a picture of a rain gauge. Drops of rain are falling into it.



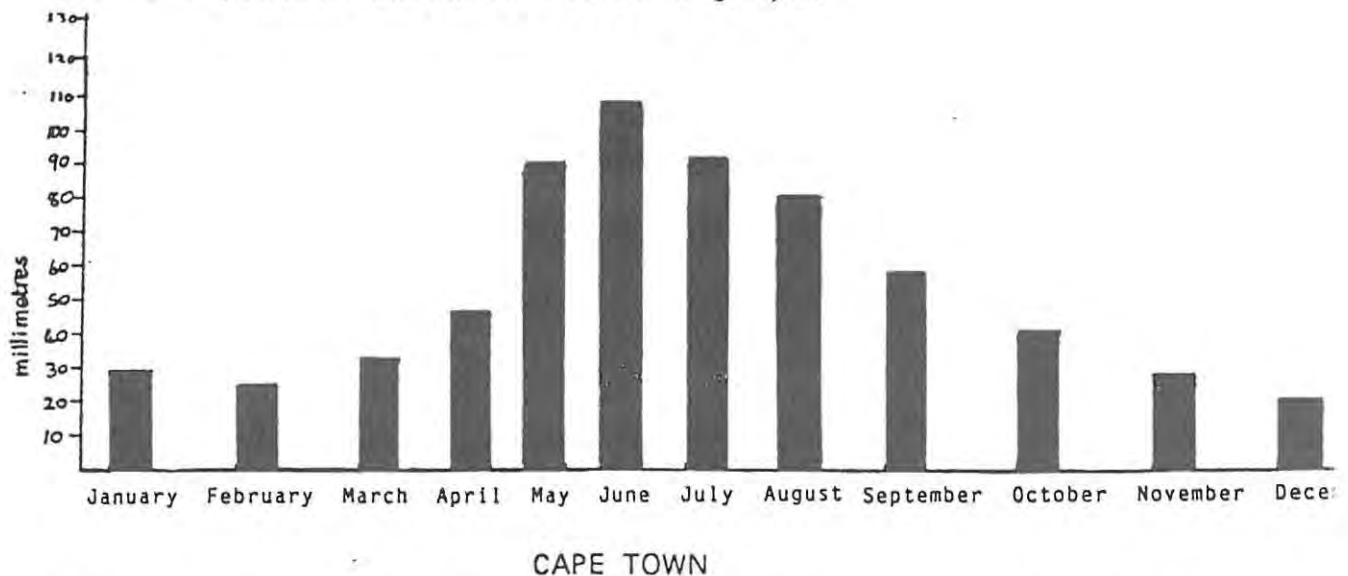
The picture shows the scale going from the bottom to the top. The scale shows 70 millimetres of rain. This means that 70 millimetres of rain has fallen into the rain gauge in one day.

Here is a picture of a line which also shows you that 70 millimetres of rain has fallen into the rain gauge. It is called a bar.



So you can show how much rain falls into a rain gauge by drawing a bar.

Here is a picture which is called a graph.



This graph shows a bar for each month of the year in Cape Town. The bars on the graph show how much rain there is in each month. So from this graph we can see if there is more rain in winter or summer.

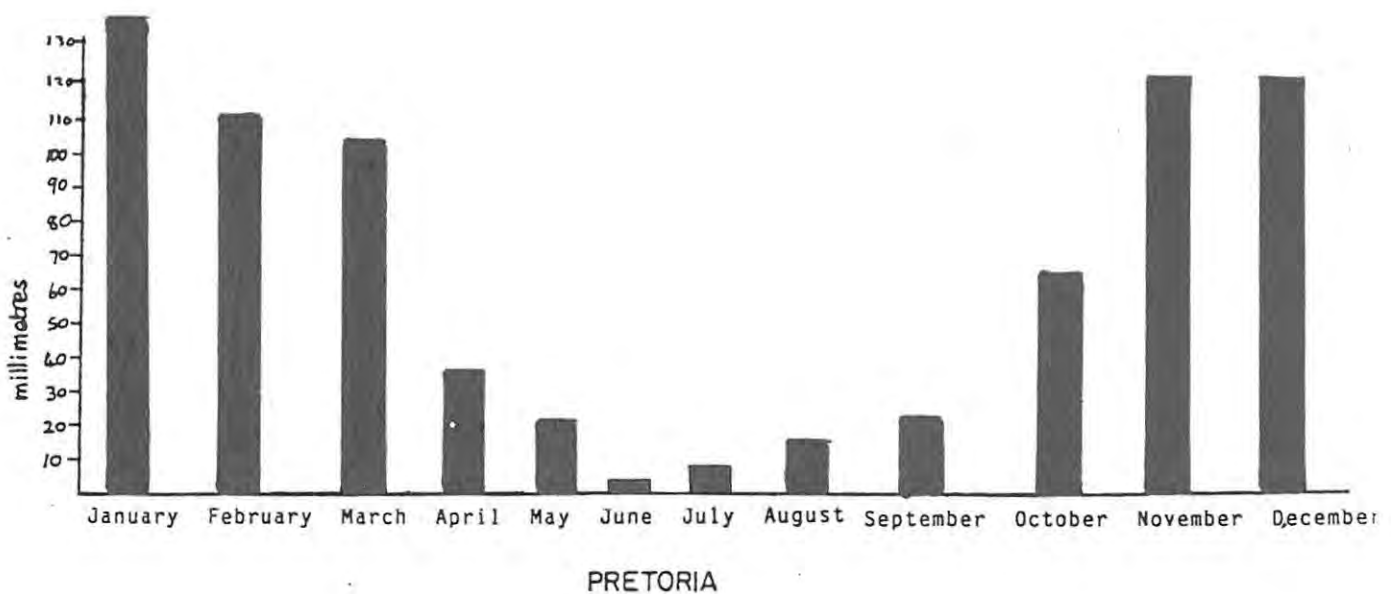
In Cape Town:

- a) There is a lot of rain in May, June, July and August. These are the winter months. Look at the map on page 9. You will see that Cape Town is in the part that gets a lot of rain in winter.

b) There is not so much rain in January, February, March and November and December. These are the summer months.

So in Cape Town most of the rain falls in winter.

In Pretoria it is different. Most of the rain falls in summer. This graph shows which months get the most rain in Pretoria.

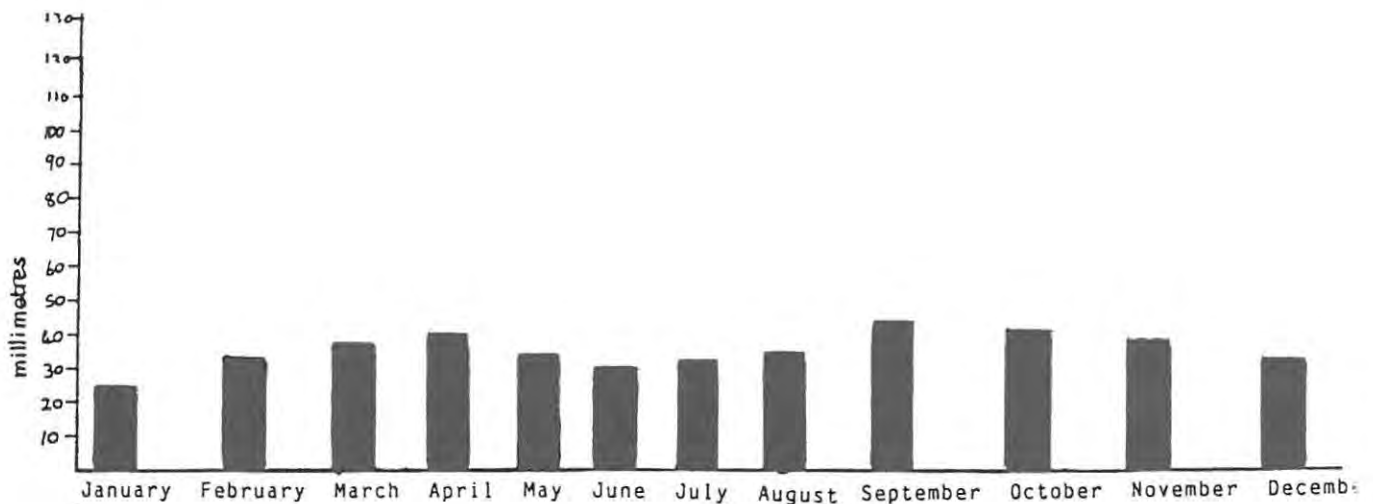


In Pretoria:

a) There is a lot of rain in January, February, March and November and December. These are the summer months. Look at the map on page 9. Pretoria is in the part that gets a lot of rain in summer.

b) There is very little rain in June and July. These are the winter months.

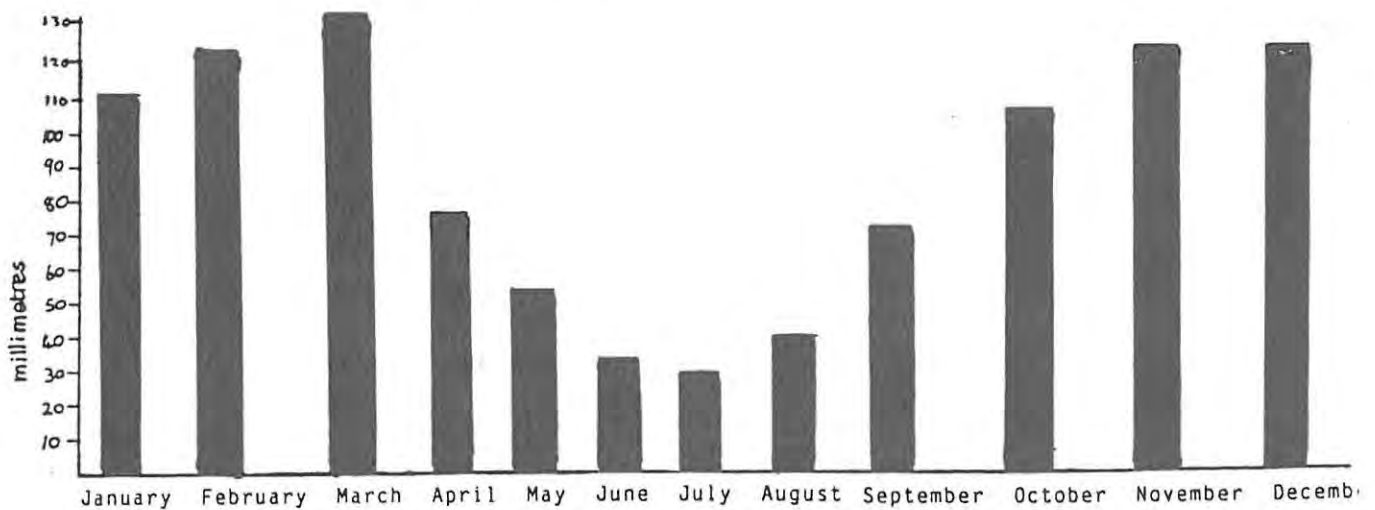
In Mossel Bay there is rain in winter and summer. Look at this graph:



MOSSSEL BAY

In Mossel Bay there is rain all year. There is about the same amount of rain in winter and summer. Look at the map on page 9. Mossel Bay is in the part which gets a lot of rain in winter and summer.

In Durban most of the rain falls in summer. This graph shows which months the rain falls in:



DURBAN

Look at the map on page 9. Durban is in the part that gets a lot of rain in summer.

Tasks:

- 1) Which place gets the most rain; Durban, Cape Town, Pretoria or Mossel Bay?
- 2) Look at the map on page 9:
 - a) Find the towns in South Africa that get rain in summer.
 - b) Find a town which gets rain in winter.
 - c) Find a town which gets rain in winter and summer.

STRUCTURED INTERVIEW 2

The readability and comprehensibility of the re-written passages for Std 3 teachers.

Pre-interview question

When I interviewed you earlier this year, there were some things you were not sure about. Have you been able to find out about some of those things this year?

Questions on Passage 1. **Mining in South Africa**

Pre-Reading Questions

Questions to be answered before reading the passage:

Establishing background knowledge

1. Do you know what minerals are?
Tell me what you know about minerals.
2. Do you know what gold is?
Tell me what you know about gold?
3. Where does gold come from?
4. What is a mine?
Tell me what you know about a mine or mines.
5. Have you ever seen a mine?
What part of a mine have you seen? (Did you see)
Look at the picture on page 4.
Does this picture show the part of a mine that you have seen?
Can you show me the part in this picture?
What is it called?
6. Do you know where gold is mined in South Africa?
Can you give me any details on where it is mined in South Africa?

Text Interaction Questions:

Questions to be asked after reading the passage.

1. Read the first paragraph on page 1.
Who needs raw materials like wood, water and iron?

2. Read the second paragraph on page 1. (Point out the word "minerals" in the fourth line)
Do you know what minerals are now?
Can you give me examples of minerals in this passage?
- 3a) Look at page 3. (Point to the word "arc" in the second line)
Do you know what this word means? Read the sentence and tell me what you think it means.
Can you show me what an arc looks like?
- b) Look at the map on page 2.
Can you show me the place on the map where gold is mined?
What helped you to find it?
- c) Name three towns or cities on the map where gold is mined.
4. Read the first paragraph on page 3. (Point to the expression "the towns grew up very quickly")
Do you know what this expression means?
Can you explain what you think happens when a town grows up very quickly?
- 5a) Read the last paragraph on page 3.
Can you think of a title or a heading for this paragraph?
- b) What do mining engineers do to protect miners and to stop accidents?
- c) (Point to "when this happens" in the eighth line of the paragraph)
What does "this" refer to?
- 6a) Look at the picture on page 4.
What is this a picture of?
What do you think this black part is? (Point to the gold reef)
What do you think this is? (Point to the headgear)
What do you think these white parts are? (Point to the tunnels)
What do you think this is? (Point to the mine dump)
- b) What did you do to find out what the things in the picture are?
7. Read the heading on page 6.
How does gold "bring much money to South Africa"?
8. What do the pictures on page 6 show?
How do they show this?
9. Look at question 2 (Things to do) on page 7.
Now use the map on page 2 to answer this question.

Post-Reading Questions:

Readers now close their books and answer these questions

1. What are the two most important things the passage tells us?
2. What does it tell us about minerals?
3. Did the passage tell us what is made with gold?
4. What did the passage tell about mines in South Africa?
5. Why is it dangerous to work in a mine?

Passage 2. The Land of South Africa

Pre-Reading Questions:

Questions to be asked before reading the passage
(Background knowledge and vocabulary)

1. Do you know what a spacerocket is?
What can you tell me about a spacerocket?
2. Do you know what a plateau is?
What can you tell me about a plateau?
3. Do you know what a slope is?
What can you tell me about a slope?
4. What is a mountain range?
Can you tell me or show me what it looks like?
5. What is the relief of a country?

Text-Interaction Questions:

Questions to be asked after reading the passage.

- 1a) Look at page 2. (Point to the words "from high up in the sky" in the heading)
What do these words mean in this sentence?
- b) (Point to the word "space" in the first line of the first paragraph)
What does this word mean in the sentence?
- c) Where does space begin and where does it end?
Are there people in space?
Have there ever been people in space?
How did they get there?
Who were they?

2. (Point to the word "relief" in the last sentence of the second paragraph on page 2)
What does this word tell about in this paragraph?
3. Look at the picture on page 2.
What is it a picture of?
Can you show me the line of mountains in the picture?
4. Look at the map on page 3.
 - a) Can you show me the line of mountains on the map?
 - b) Can you show me where the land is low and mostly flat?
5.
 - a) Is a relief, a map?
 - b) What does a relief tell you that a map does not tell you?
(If the answer is: Where mountains are; then: But an ordinary map tells you where mountains are - show the map on page 3)
So what is the difference?
 - c) What happens to rain when it falls on:
 - the plateau
 - the escarpment
 - the plateau slopes
6. Read the first paragraph on page 5. (Point to "In the south these are the main mountain ranges:")
What are "these mountain ranges"?
7. Read the last paragraph on page 5.
If I stand at the bottom of Mont-aux-Sources and I want to climb to the top of the mountain, will I have to climb 3 480 metres to get to the top?
8. Read the passage about "The very high mountains" on page 5.
 - a) What is a range of mountains?
Can you give me an example?
 - b) What is the escarpment?
9. Read the paragraph about "The high, flat land" on page 6.
 - a) What is the plateau?
 - b) Where is it?
 - c) Are the Magaliesberg, Waterberg, Soutpansberg and the Witwatersrand part of the plateau?
10. Read the passage about "The low land near the sea" on page 6.
 - a) What is the difference between the coast and the coastal plain?
 - b) Where is the coastal plain?
11. Read page 7.
What are the plateau slopes?

12. Read pages 7 and 8 and look at the pictures on pages 7 and 8. Now close your books and point out on the model (model of relief of South Africa provided):
- the plateau slopes (where they start and where they end)
 - the coastal plain (where it begins and ends)
 - the escarpment (where it begins and ends)
 - the plateau (where it begins and ends)

Post-Reading Questions:

13. Read the Task on page 8 and fill in the missing words.

Passage 3. The Weather in South Africa

Pre-Reading Questions:

Questions to be answered before reading the passage
(Background knowledge)

1. What is a climate?
2. What is a drought?
3. What is a rain-bearing wind?
Tell what you know about rain-bearing winds in South Africa?

Text-Interaction Questions:

Questions to be asked after reading the passage

1. Read sections 1 and 2, on pages 1 and 2.
What is a climate?
2. Read section 3, on pages 2 and 3.
 - a) Can you say what rain-bearing winds are now?
 - b) Look at the map on page 3.
What do the arrows show?
3. Read sections 4 and 5, on pages 4 and 5.
 - a) What makes the weather rainy and wet in Cape Town?
 - b) Why is the land often dry in the Little Karoo?

Read section 6 on page 6.

What is the difference between a rainstorm and a thunderstorm?

5. What is a drought?
6. Read page 7.
Look at the model of the relief of South Africa (provided).
(Point to the positions of De Aar and Cape Town)
Which town gets the most rain?
Can you say why?
(Repeat for Port Nolloth and East London)

7. What is the difference between a desert and a drought?
8. Look at the map on page 8.
 - a) What does it show?
 - b) Name one area which gets more than 1000 millimetres of rain in a year.
 - c) (Point to the western Bophuthatswana region)
How much rain falls in this area in a year?
 - d) How much rain falls in Cape Town in a year?
9. Look at the map on page 9.
What does it show?
What does this dark part here show? (Point to South Western Cape)
What does this dark part here show? (Point to Natal area)
What does this light part here show? (Point to Central Cape area)
10. a) Look at the picture in the middle of page 11.
What is it?
What does it show?
What are the thick black lines? (What do they show?)
 - b) When does Cape Town get most of its rain?
11. Look at the picture on page 12.
In which month does Pretoria get most of its rain?
How much rain falls in that month?
12. a) Look at the pictures on pages 11 and 12 again.
When is the rainy season in each of these places? (Summer or Winter?)
How do you know?
 - b) Look at the graph at the top of page 13.
When is the rainy season in Mossel Bay?
13. Turn to page 14 and do Task 2.

Post-Reading Questions:

Readers now close their books and answer these questions

1. Is this possible in areas where there are thunderstorms?
(Explain your answer)
There are two mealie farms next to each other. On one farm the mealies are green and grow well. On the other farm next door, the mealies are dry and some are dead.
2. What do you think is the main difference between:
 - the map on page 8, and
 - the map on page 9?

TRANSCRIPT 3

STRUCTURED INTERVIEW 2:

THE READABILITY AND COMPREHENSIBILITY OF THE RE-WRITTEN TEXTBOOK
PASSAGES FOR STD 3 TEACHERSPre-interview question

When I interviewed you earlier this year, there were some things you were not sure about. Have you been able to find out about some of those things this year?

G1&2 Yes

T1&2 Yes

Questions on Passage 1. Mining in South Africa

Questions to be answered before reading the passage:

Establishing background knowledge

**1 Do you know what minerals are?
Tell me what you know about minerals.**

G1 Minerals are those materials which we get from under the ground like gold, diamonds.

G2 Yes, minerals are found underground, eh, they are inorganic materials found underground.

C2 Everything that comes from the earth is minerals, that we dig from the earth.

T1&2 Yes.

T1 Minerals are found from the soil. Gold... and some other.

T2 Minerals are...salt, it is found from stones, then there's copper, there's aluminium and some things are made from them. When you say minerals we think of plants, phosphate, calcium and other minerals.

PE1 Yes. They are raw materials from deep down the ground for example gold, diamond, copper etc.

PE2 Yes.

**2. Do you know what gold is?
Tell me what you know about gold?**

G2 Gold is dug underground its, eh, no, I don't know.

G1 Gold is a mineral which is dug from underground which has a high value.

G2 Precious stones.....

C1 Yes.

C2 For instance, we usually say Johannesburg is a place for gold, and we use gold. So SA is popular because of gold.

C1 Gold is just a shiny stone that we use in our watches and rings.

T1&2 Yes.

- T1 I think gold is a stone, a type of stone that is dug in a certain type of climate and then it is motivated and made into different things... rings, money and so on.
- T2 Gold is a valuable mineral or a stone. It is so expensive, things that are made from gold are so expensive. First we have money which comes from gold and we have very expensive jewelleries made out of gold, so gold is so important.
- PE1 I haven't seen it.
- PE2 I haven't seen it.

Can you say anything about it?

- PE2 We make jewellery out of gold.
- PE1 Eh, helps us on paper. Is it paper printing money?

Where does gold come from?

- G1 From the mines.
- G2 Yes.
- C1 It comes from underground.
- C2 Yes.
- C1 From Johannesburg.
- C2 The only place we can get more gold is Johannesburg.
- T2 There are gold mines in Transvaal. So mainly gold is found from Transvaal. There are mines in Transvaal which are specializing in gold.
- T1 Yes and also in SASOL. SASOL and also in Bop. I've never gone to Bop, Bophuthatswana, but they say there are gold mines there.
- T2 There is that mine which is known as the Western Deep Levels which is the most biggest mine where gold comes from.
- PE1 From under ground.
- PE2 Yes.

**2. What is a mine?
Tell me what you know about a mine or mines.**

- G2 A mine is where minerals are dug under the ground. Its where a lot of gold or minerals can be found.
- G1 Yes.
- C2 A mine is where we dig these minerals ... more workers.
- T2 I think I've seen a mine. Last year we attended a tennis tournament at Welkom. We were sent to the mines but we never went down, we only saw the shaft.

Q: What part did you see?

- T1 I saw the upper part. The surface.

Q: Does the picture on page 4 show it?

- T1 The upper part. We saw this (pointing at the headgear) and something like big stone.

Q: And can you tell me what any of those parts are called?

T2 I think this is a shaft (pointing at headgear) upper surface, and they mentioned a lift going down to the inner surface and there is a first floor and a second floor. They describe it.

PE1 A mine is a place where we get eh... minerals.

PE2 Yes, it is deep hole under the ground.

5. **Have you ever seen a mine?**

What part of a mine have you seen? (Did you see?)

Look at the picture on page 4.

Does this picture show the part of a mine that you have seen?

Can you show me the part in this picture?

Can you show me the part in this picture?

What is it called?

G2 From outside.

G1 From a picture.

G2 Its got these dumps around it and these iron structures which propels the vehicle or something which goes underneath to take the crude or whatever, maybe iron ...

G1 Yes.

(Picture of page 4)

G2 Yes, this part here, the dumps and these structures here (pointing at headgear).

What are these structures called?

G1&2 Yes, shafts.

C1 No.

C2 No.

PE2 No.

PE1 Except on T.V.... it was a coal mine.

What parts did you see?

PE1 Eh.. shafts and the people who were working in there. The other ones driving small train, taking the coal outside. Yes, the shafts.

6. **Do you know where gold is mined in South Africa?**

Can you give me any details on where it is mined in South Africa?

G1 Johannesburg is one ... Heidelberg, Vanderbijlpark - I'm not sure.

G2 No.

C1 In Johannesburg.

C2 and places around it.

T2 And Transvaal at Welkom.

T1 Since gold is a mineral so a labour is needed, to dig up the gold stone, so these people need accommodation near the gold mine. So many facilities are needed - so there is equipments. There should be labour, equipments and sufficient facilities.

Q: Can you tell me some of the places where it is mined?

- T1 Welkom, and SASOL, Sasolburg.
T2 Kimberley.
T1 And Messina.
T2 Kimberley, Phalaborwa.
T1&2 Phalaborwa and Northern Transvaal.
PE2 In Transvaal and Orange Free State.
PE1 Yes.

Any other places?

- PE1 I've forgotten.

TEXT-INTERACTION QUESTIONS

Questions to be asked after a thorough reading of the passage.

- 1. Read the first paragraph on page 1.
Who needs raw materials like wood, water and iron?**

- G1&2 People.

What for?

- G1&2 To manufacture, to make other things.
C1&2 People.
T2 Man, because they are the one who have the upper hand. They can use them to make classrooms, furniture and schools.
T1 Agree.
PE1&2 People do.

- 2. Read the second paragraph on page 1. (Point out the word "mineral" in the fourth line).
Do you know what minerals are now?
Can you give examples of minerals in this passage?**

- G1 Minerals are raw materials that come from under the ground.

Can you give me examples?

- G1&2 Gold, iron ore, coal, copper, diamonds.
C2 Minerals is everything that comes from the earth...
C1such as copper, coal, gold diamonds.
T2 Minerals are raw materials that are found from the mines.
T1 Agree.
T2 In this passage we have gold, iron, coal and diamonds.
T1 Yes, copper, coal.
PE1 Gold, minerals are raw materials like gold, diamonds and coal.
PE2 Yes I agree.

- 3a) Look at page 3. (Point to the word "arc" in the second line).
Do you know what this word means? Read the sentence and tell me what you think it means.
Can you show me what an arc looks like?**

b) Look at the map on page 2.
Can you show me the place on the map where gold is mined?
What helped you to find it?

c) Name three towns or cities on the map where gold is mined?

a)G1 I'll say an arc is a curve shape (showing a C-shape).

G2 Like the back of a bean.

b) (Both pointed to arc on the map)

What helped you to find it?

G2 The key.

G1 Yes.

c)G1&2 Johannesburg, Germiston, Carltonville, Welkom.

a)C2 Shaped like (showing a C) a horseshoe.

C1 Yes.

b)C1&2 Both pointed out the names of the towns in the arc. The arc helped us, at the top of the page.

c)1 All named already.

a)T2 Its a kind of a certain shape that resembles something.

What something?

T2 It means something... for instance this arc (points to key) means gold and at the same time there are buildings which are arc shaped.

Show me

T1 Like a boat shaped.

T2 Mmm.

T1 Boatish or...

T2 C-shape.

b)T2 Yes, there (both point at correct arc on the map).

What helped you find it?

T1&2 The key that we are given there shows us that the arc means there is gold.

c)T1&2 Johannesburg, Germiston, Welkom, Krugersdorp.

a)PE It looks like an upturned saucer.

PE2 It is a symbol. It shows is where the gold mines are in the republic of SA. It looks like an arc (making a C shape).

b)PE1&2 Point correctly to the arc.

PE1 The arc.

What helped you to find it?

PE2 On the key.

c)PE1&2 Cartonville, Welkom Germiston, Johannesburg.

4. Read the first paragraph on page 3. (Point to the expression "the towns grew up very quickly").
Do you know what this expression means?
Can you explain what you think happens when a town grows up very quickly?

G2 It means that so many people come near the gold mine to look for work or as a result they seek a permanent place to live in, so as a result the towns grow and grow by many people coming to live there.

G1 Yes, I agree.

C1 The people who are working for mines are having some locations there so there are towns ...

C2 Because there is more work there, people go there so there must be shops, houses for those people, that is why the towns grew up quickly.

T2 When towns grow up very quickly people and traders are attracted by the attraction in this case they are attracted by gold and they start to develop. They add more business and more factory in town and there are lots of people, get labour and the population gets thick and thick.

T1 Yes agree, and these people tended not to go back to their homes, so they developed, schools, churches and things like that.

PE1 It simply means that when something is discovered.... something that has got value, is discovered eh.... unemployment can also be reduced and towns are also expanding.

PE2 Yes.

5a) Read the last paragraph on page 3.
Can you think of a title or a heading for this paragraph?

b) What do mining engineers do to protect miners and to stop accidents?

c) (Point to "when this happens" in the eighth line of the paragraph).
What does "this" refer to?

a)G1 How gold is dug.

G2 The invention of gold.

b)G2 They make sure that the miners wear hard hats, they check the ropes that hold the skip.

Anything else?

G1 I agree.

G2 They also expect the big stones not to fall - if they anticipate it.

c)G1 When the ropes break.

G2 When the great rocks fall on them.

G1&2 Yes, yes.

a)C1 How gold is mined.

- C2 Same.
- b)C2 They check the ropes of the skip so that....
 C1 ...they won't break.
 C2 So they give the miners hard hats...
 C2 The miners wear thick clothes.
- c)C1&2 The breaking of the ropes.
 C1 On the skip.
- a)T2 The development of gold mines in SA.
 T1 The mines in SA, especially gold.
 The gold mines in SA.
- b)T1 Yes, the engineers see to it that these mine workers are having hard hats on their heads to protect them from dangers.
 T2 Yes the structure of the mine, that is machinery, the ropes that hold them, the checkers check that they are proper so that they do not break. And the working of the tunnels, the arrangement of the tunnels and the protection of miners against loose rocks.
 T1 And they also teach them the way of digging the loose rocks so as not to make danger.
- c)T1 Danger.
 T2 If there is any irregularity or when the great rocks fall on them.
 T1 Yes, so that is accident.

What is this accident?

- T1 When the rocks fall, so they are using a skip to protect the men from death.
 T2 Which is a sort of a box which protects them.
 T1&2 The danger is the rocks are falling and the danger and the box is to protect them.
- a)PE1 Gold mine.
 PE2 The duty of the engineers.
- b)PE1 Check the ropes.
 PE2 Also check if the miners wear thick hats.
 PE1 Hold the skip so that they do not break ... I'm, they check onto the skip. Is it ready to go deep down.
 PE2 They also help the miners to find the best way to dig rocks out of the tunnels.
- c)PE1 The eh... breaking of rope that holds the skip.
 PE2 Agree.

- 6a). Look at the picture on page 4.
 What is this a picture of?
 What do you think this black part is? (Point to the gold reef).
 What do you think this is? (Point to the headgear).
 What do you think these white parts are? (Point to the tunnels).
 What do you think this is? (Point to the mine dump).

- b) What did you do to find the things in the picture?

- a)G2 A mine.

Mine

- G2 Its a reef.
- G1 Its the gold reef.

Headgear

- G1&2 Headgear.

Tunnels

- G1&2 Tunnels or passages.

Dump

- G1&2 Mine dump.
- b)G1&2 We read the key and the numbers.

Mine

- a)C1&2 What a mine looks like.
- C1&2 Line of gold or reef.
- C1&2 Headgear.
- C1 Tunnels.
- C2 Like paths under the ground.
- C1 Waste dumps.
- C2 Yes.
- b)C2 Each number is indicate at the bottom so it tells us.
- a)T1 It is the picture of a mine.
- T2 Interior and exterior.
- T1 Yes.

Black part?

- T1&2 Line of gold.

Headgear

- T2 Shaft, may we look? (at the key) it is a headgear.
- T1&2 Which lifts and lower the ship up and down. It controls that box.

Tunnels

- T1 Compartments in the shaft that leads these mine workers to the different places.
- T2 It is areas in which the groups work towards the line of gold.

Mine dump

- T1&2 Mine dump.

What is a mine dump?

T1&2 Unused rocks and sand - when the rocks are crushed etc.

b)T1&2 By the key at the bottom.

Mine

a)PE1&2 Mine.

Reef

PE1 Edge of the mine.

PE2 A gold reef.

Headgear

PE2 The headgear which lifts and lowers the skip.

PE1 Those things, there is the rope coming from that small hut there so that's where the hut of the rope is tied. So it goes there on top of that hill and goes into that skip and eh... in there, in that house they are operating there so that the rope can come loose to enable the skip to go down. They control that rope.

Tunnels

PE1 Shafts.

PE2 Yes, the tunnels.

Dump

PE1&2 Mine dumps.

b)PE2 I used the key.

PE1 As I have told you, I have seen this on the television.

**7. Read the heading on page 6.
How does gold "bring much money to South Africa"?**

G2 By selling gold and in turn we get money, selling to other countries overseas.

G1 Yes.

C1 We sell gold to other countries and we get money. From that money we buy goods that we need.

C2 Yes.

T1 Gold is manufactured so many things are made from gold and these things are sold out to some other places - so money comes in torrents in SA.

T2 SA is the most richest country. Lots of gold mines are found in SA when compared to other countries.

T1&2 It is exported.

T2 SA sells gold to other countries, it gets money.

T1 America and to Europe.

PE1 Eh... firstly gold serves as an export of SA. So I should say it brings much money to SA.

PE2 Yes with the money from the gold, SA is able to buy machinery, aeroplanes, ships and so on.

8. **What do the pictures on page 6 show?
How do they show this?**

G2 Money.

G1 The value of gold and the second is the value of selling goods and the third is the value of selling diamonds.

How do they show this?

G1&2 By means of pictures.

Read the last lines - can you explain how this picture explains this?

G2 It explains how gold earns more than other things.

G1 It explains 'value', it means that gold makes money.

G2 It would help more to show 1kg of gold and 1kg of diamonds - though they are the same, gold gets more money.

C2 It shows us money, coins and notes. So it tells us that this money comes from selling gold to other countries.

C1 From selling diamonds we get those coins.

How much?

C1 It says R3 (laughter).

C2 More money from selling gold.

C1&2 Much money from selling goods.

C1&2 Also less money for selling diamonds.

C2 So they are not the same price. Gold gives us more money, there follows other goods, there follows diamond.

T1 They show us money.

T2 Money from selling gold.

T1 The second shows money which comes from selling goods.

T1 Yes, all articles made from gold rings and what not.

T2 Yes and Picture no 3 shows us money which comes from selling diamonds.

T1 Diamonds yes.

What are the three parts to the pictures?

T2 Yes, first money from selling gold.

T1 Second, money from selling goods such as things that are made from gold.

T2 Yes, agree.

T1 Third one, money from selling diamonds.

How much money comes from selling gold?

T1 R73.

And goods?

T2 R24.

And diamonds?

T1&2 R3.

In the paragraph, "If you take just R100 etc" - Do you understand that explanation?

T1&2 No.

Read it again. What does it mean?

T1 The value of gold is higher than the others for the R100.00.

PE2 Money.

PE1 Agree.

What is the picture trying to help us to understand?

PE1 We get that money...

PE2 ... from selling gold and diamonds.

How?

PE1&2 Question is not clear.

(Asked again)

PE1 The importance of exports and imports.

PE2 Still vague.

When you look at this picture it shows different things doesn't it? What do those different things explain to us?

PE1 And eh... another thing, it also shows us that by having gold, that means people can live better.

PE2 Not sure.

**9. Look at question 2 (Things to do) on page 7.
Now use the map on page 2 to answer this question.**

G1&2 Gold
Copper
Coal

Gold
Copper
Coal

G1 Copper..... Coal
Gold

C1&2 Gold
Copper
Coal

Gold
Coal
Coal
Gold

T1&2 Gold
Copper
Coal
Gold
Coal
Coal
Gold

PE1&2 Gold
Copper
Coal
Gold
Coal
Coal
Gold

Post-Reading Questions

Readers now close their books and answer these questions.

1. What are the two most important things the passage tells us?

G2 The value of minerals and the difficulty to get them out of the ground.

G1 Where minerals are found and how they are found.

C1 How gold is mined.

C2 Where we get this gold.

How gold is mined.

T2 1) Raw materials and minerals. What mines give us minerals.

2) Different kinds of minerals eg iron, copper, coal, and most of them come from the soil and the instruments used for digging them from the mines.

T1 1) Mining and minerals in SA and that.

2) In the mines the engineers see to it that they are protected. There are so many ways of protecting them. There should be a skip when they are going to go down. They should be in that box and they should have some hard hats to protect them from danger, maybe the stones will fall and damage them. So the engineers should be there in the mines.

PE2 Mining is the RSA.

PE1 The importance of exports and imports.

2. What does it tell us about minerals?

G1 It tells us that minerals are from underground ... they are raw materials.

G2 They have value, especially if we send them. We get more other things that we need.

C2 It tells us everything we get from the earth is minerals.

C1&2 It also tells us these examples copper, gold, coal, diamond.

T2 The main places in SA where they are located and the different kinds of minerals such as the key tells us, copper, gold, coal and diamonds.

T1 It also tells us of the development of Johannesburg since there was a gold mining there the town grew up.

So you say that has got something to do with minerals?

T1&2 Yes.

Anything else the passage tells about minerals?

T1 Yes, minerals are so important even in our classrooms we are using desks which are from wood which is from the soil and in the soil there are minerals. And we need iron which also comes from copper right down in the soil.

T2 And we have been given a picture of the mine, the structure of a mine, the dumping areas, the shaft areas, the tunnels and the arc and the line of gold and how people are protected and the uses of that arc.

PE1 Each country has got its minerals. Or each country has got its own way of living.

PE2 Raw materials which comes from the mines are called minerals. SA is rich in minerals.

PE1 And mining also creates friendship to other neighbouring states.

3. Did the passage tell us what is made with gold?

G1&2 No.

C1&2 No.

T1 Rings are made from gold, necklaces as well as money.

Did the passage tell you that?

T1&2 No.

PE1&2 No.

4. What did the passage tell about mines in South Africa?

G1 Biggest gold mines are in Johannesburg.

G2 Can't remember from the passage.

C1 The places where gold is mined. The biggest mines are in SA.

C2 And how much in each mineral.

T1 There are many mines in SA, gold mines, coal mines, copper mines in SA. There are people who are working for these mines and the facilities used in these mines are the same so the government or whatever body it is, should provide enough facilities when there is a mine. And there should be people like the engineers and all that.

T2 This passage told us the origin of the mines. The mines originated in Johannesburg and after that some towns developed such as Germiston, Welkom and so on and so those places grew bigger and bigger.

PE1 SA is one of the famous subcontinents of Africa and it is rich, especially in gold.

5. Why is it dangerous to work in a mine?

G2 It's deep under the ground, loose stones can fall on the workers and they are trapped and die. Sometimes the skip that they use to travel in and out, and the rope sometimes break and they die.

G1 Yes.

C1 People die there.
C2 Dangerous to work.

Why?

C1 The ropes break and they fall down and if a rock falls it can crush the heads, if they don't have a hard hat.

T2 Because a mine is not just a simple structure of a house. It has its own structure and its own pattern and it needs skilled people.

T1 Yes.

T2 ...to train the workers of the mine how to go down the arc and how to go out and about in the tunnels.

Q: Any other reason why it is dangerous to work in a mine?

T1 Yes, as she says, there should be enough skilled people to help these mine workers and to protect them inside the mine.

Q: What sort of dangers. What happens that is dangerous?

T1 The falling of stones and sometimes the earthquakes occur where many workers die underneath.

T2 ...and also in order to get gold it is deep down.

T1 Yes, 3 kilometres down.

T2 Yes.

Q: Is that dangerous?

T1&2 Yes.

PE1 Because of the reef and the falling of rocks.

PE1&2 And the breaking of that rope.

Anything to add?

PE1 More engineers are needed to prevent accidents.

Passage 2. The Land of South Africa

Pre-reading Questions

Questions to be asked before reading the passage
(Background knowledge and vocabulary)

1. **Do you know what a spacerocket is?**
What can you tell me about a spacerocket?

G2 I don't know about it, but I think its a lab which travels in the air.

G1 I'd say its a spaceship that travels in the air.

C1 Is it not the space between mountains.

C2 Yes I think.

T1 It something like a parachute.

T2 It is a ship that goes up and is controlled from the ground....
it goes up, up in the sky.

Q: Anything more?

- T2 It has different slopes, some are conical shaped, some are disc shaped...I think they are rocketed from the sea if I am not mistaken... up into the sky. They have got pilots like other ships and they are controlled from the ground and they can communicate with some people on the ground. I've never seen one.
- T1 No, nothing because I'm not clear about that.
- T2 Do you remember that ... about Apollo?
- T1 oh yes, they went up like a parachute from the sea.
- T2 They have intercoms there.

What do they do there?

- T2 Exploring the plateaus.
- PE1&2 Don't know.

**2. Do you know what a plateau is?
What can you tell me about a plateau?**

- G2 It's a table land, a flat land which you find after the high lands.
- G1 Yes.
- C2 Yes, a plateau is a high flat part.
- C1 Yes.
- T1 The edge of the mountains or the escarpment of the mountain. The ending of the mountain.
- T2 A plateau is a place that is high and rising in steps.
- PE1 Yes, A flat piece of land just above sea water level.
- PE2 Yes.

**3. Do you know what a slope is?
What can you tell me about a slope?**

- G2 A slope is the area from the top of the escarpment down to sea level - that area there.
- G1 Yes.
- C2 A slope is a space ...
- C1 ...between the land and the sea ... slopy (showing a 45 degree angle with her hand).
- T2 A slope is a ... we say a place is slopy. Some places are flat and others are slopy, you've got to go up, others slopy down.
- T1 Yes.
- PE1 Yes, it is up and down of, or irregular..... just say up and down, flat and hills.
- PE2 Agree.

**4. What is a mountain range?
Can you tell me or show me what it looks like?**

- G1 A mountain range are the mountains forming ...
- G2 Sort of a chain ...
- G1 ... they are linked together.
- C1 A line of mountains.
- C2 Yes.

T2 A mountain range is a line of mountains, they don't wear the same slope. It's according to the structure.
T1 Yes.
PE1&2 A chain of mountains.

5. What is a relief of a country?

G2 Its how its formed up.
G1 Yes.
C2 A type of weather.
C1 I can't say.
T1 The build of a country.
T2 The climate of a country.
T1 Yes I'm sure. Last time I saw the relief with the certain climate - the relief rain. But when I went back I saw from the textbook that the relief is the same word as the build.
T1 The structure.
PE2 The relief are mountains, rivers and it is the build of that country.

TEXT-INTERACTION QUESTIONS

Questions to be asked after reading the passage.

**1a) Look at page 2. (Point to the words "from high up in the sky" in the heading).
What do these words mean in this sentence?**

G1 When you are high up and you look down.
G2 Yes.
C1 One who goes up in the sky and looks up and see what is on the ground.
C2 Yes.
T1 What does the land of SA looks like from the space. What does he see from the sky.
T2 The aerial view.
PE2 It means in space.
PE1 In a spacerocket.

**b) (Point to the word "space" in the first line of the first paragraph).
What does this word mean in this sentence?**

G1 Up high in the sky.
G2 Yes.
C1 An opening ... a place of open air.
C2 nothing occupies it except air.
T1 When he is high above the land whether on the plane or the rocket, when he looks down he sees the structure of SA.
T2 The aerial view, what it looks like.
PE1 That particular person is just in space. He is not on a certain continent or in a certain province, or certain mountain or river. He is just on space (pointing up in the air).
PE2 It is a type of spacerocket.

c) **Where does space begin and where does it end?**
Are there people in space?
Have there ever been people in space?
How did they get there?
Who were they?

G1 Begins on the earth and ends on the earth. It starts here, goes up and again lands on earth.
G2 It starts above us where we can't reach and goes up to the clouds.

Do people live there?

G2 No.
G1 They don't live there.

Have people ever been there before?

G2 Yes, they keep on trying to get into space.
G1 Yes.

How?

G1 By the rockets.
G2 Yes.

Can you name any of the people?

G2 Aldrin from America.
G1 Collins, Armstrong.
C2 Below the earth above the sky.
C1 Yes, I agree.
C2 Apollo apa... There are people for that moment, not for the whole of their lives.

How did they get there?

C1 They use aircrafts ... I'm not sure.

Names

C2 Yes, the Apollos...
C1 Aldrin....
T1 Above the soil and below the sky.
T2 No beginning, no ending.
T1 No, there are not, but they can be there if they fly up.
T2 I think there are spirits in space. There are no people there.

People in space?

T2 Apollo and others.

How?

In a spacerocket.

Who?

T1 Armstrong, Apollo, I don't know the rest.
PE I think the space starts from the horizon. It has no end.
PE1 Starts where you are and as far as where you can go.

Have there ever been people there?

PE2 Yes.

How did they get there?

PE2 They went there by spacecraft.
PE1 Yes.

Who?

No more than in the last interview.

2. **(Point to the word "relief" in the last sentence of the second paragraph on page 2).**

What does this word tell about in this paragraph?

G1 The build.
G2 The mountains, flat land, rivers.
C2 The relief means pictures which show us high and low parts of the land. The high mountains, rivers, eastern flat lands
T2 How SA is built, about high mountains, flat areas, slopes, land, rivers.
T1 Yes.
PE2 It means the low land near the sea, high mountains, high flat land.
PE1 Yes, high and low parts of the land.

3. **Look at the picture on page 2.**

What is it a picture of?

Can you show me the line of mountains in the picture?

G2 Of South Africa as viewed from space.

Line of mountains: 2 Correctly
1 Across Southern Escarpment only.

C1 Its a relief map.
C2 A relief.

C1&2 (Both showed mountains correctly)

T1 The relief of SA.
T2 Relief map of SA.

Mountains

T1&2 (Pointing to them correctly)
PE1 Picture of SA. How SA looks like.

PE2 The relief of SA.
PE1&2 (Both correct)

4. Look at the map on page 3.
a) Can you show me the line of mountains on the map?
b) Can you show me where the land is low and mostly flat?

a)G1&2 (Correct)
b)G1&2 (Correct)

a)C1&2 (Showed them correctly)
b)C1&2 (Pointed to land of Plateau, west of Johannesburg and middle - incorrect)

a)T1&2 (Correct)
b)T1&2 (Correct)

a)PE1&2 (Both correct)
b)PE1&2 Along the coast (correct).

- 5a) Is a relief a map?
b) What does a relief tell you that map does not tell you?
(If the answer is: Where mountains are; then: But an ordinary map tells you where mountain are - show the map on page 3). So what is the difference?

a)G2 No, its not a map.
G1 No.

b)G2 I think the reality of landforms and rivers. The plants, the true picture of mountains..
G1 ... and rivers ...
G2 ...and the size too.

a)C2 Yes.

C1 Mmm... yes.

b)C2 A relief map shows us mountains only, we are clear about mountains. Whereas in a map they put everything together.

C1 Mixed all together.

Compare map and relief - what is the difference?

C2 It shows us the high parts and the low parts.

Which one?

C2 (No answer)

C1 The relief and the towns are together (pointing to page 3), so we can see which town is where the relief is.

Any other differences?

C2 The map on page 2 also shows us the oceans, on page 3 it shows us the towns.

C1 Map page 2, doesn't show the mountain's names, just a sketch, but map page 3 does show the mountain's names.

- a)T1 Yes.
b)T2 A relief is not a map. A map is when you put a picture of them together (high, low and flat land together) that is a picture of a relief.

What is the difference?

- T2 A map is a drawing of something. Now when it is relief you show what you want to bring home. The high mountains, the low mountains, flat land and high land by drawing.

And a map doesn't show that?

- T2 It shows but must indicate where the mountains are high and low.
T1 Since a relief is a picture that shows the build, I say a relief is the map of that particular land.

Compare pictures on p2 and p3. What is the difference?

- T2 The mountains are named, otherwise it is one and the same thing.
T1 And on the map on page 2 we see the structure of the mountains.
a)PE Yes, it is a map.
PE1 When you are dealing with geography they go together.

Is there a difference or not?

- PE2 There is no difference.
PE1 There is a little bit of difference because as you are flying or you are in space and you look down you can see a relief. It may happen that some rivers are narrow and you can't see narrow rivers unless you go down. And a map covers everything, you see the rivers, the mountains, the dams etc.

- c) **What happens to rain when it falls on:**
- the plateau
- the escarpment
- the plateau slopes

Plateau

- G1 If water falls on the plateau the water will fall down, run down.
G2 The plateau, as it is flat, a percentage will be absorbed and the rest will form rivers. Most of the rivers run to the west due to the lowness of the western side, eg Orange river.

Escarpment

- G2 Water will run from the mountains down to the sea, but also a certain percentage will run towards the plateau.
G1 Yes, agree.

Plateau slopes

- G2 It runs to the valley to the sea.
G1 Yes.

Plateau

C2 How is the rain?

When the rain falls on the ground

C2 Oh, since the plateau is a flat part, so it can keep the water.

C1 Yes.

Escarpment

C1&2 It goes down.

Plateau slopes

C2 Also goes down to the sea.

Plateau

T2 What a plateau is.

T1 So one must know what a plateau is?

Yes, high flat land.

T1 Another name for it is the table land. It is flat so the water remains there. It is not slopy. The water remains on that place.

T2 I don't agree. The precipitation is less on a plateau. It does not promote heavy rainfall.

Okay, pretend there is rain, do you agree?

T2 I think it runs down. It is a table but it runs down. I think the water stays for a longer time.

Escarpment

T1 Escarpment is the line along the highest mountains.

Yes, so what happens to it?

T2 I think the water flows down and rivers down.

T1 Yes.

Plateau slopes

T1 First, the plateau slopes are between the escarpment and the coastal plain. So they are a bit in a flat place, so water flows slowly downwards.

T2 There is a change, the upper part slopy, the water in force and the vegetation brings a change. But it will flow down.

Plateau

PE1 It can cause flood because the land is flat.

PE2 Agree.

Escarpment

PE1&2 Falls down.

Plateau slopes

PE1 It can form dams.

PE2 Agree.

6. **Read the first paragraph on page 5. (Point to "In the south these are the main mountain ranges:")
What are "these mountain ranges:?"**

G1 Sneeuberg mountains, Nuweveld mountains Drakensburg and Kamiesberg mountains.

G2 Agree.

C2 Mountains that are close to each other and form a line.

C1 (Named them correctly)

C2 Agreed.

T1&2 (Correctly named)

PE2 (Correctly)

PE1 Yes.

7. **Read the last paragraph on page 5.
If I stand at the bottom of Mont-aux-Sources and I want to climb to the top of the mountain, will I have to climb 3480 metres to get to the top?**

G2 No.

Why not?

G2 Eh.. the foot of the mountain does not start from the sea level.

Will I have to climb more, or less, than 3480m?

G2 Less.

G1 Less, Yes.

C1&2 Yes.

T2 No.

T1 Ja, because the Mont auxes is near to the sea and it is the lowest land near the sea. So you cannot climb 3480m.

Will we have to climb more, or less?

T2 Less. Because you are at the lowest.

T1 Well have to climb ... ooh.

Where is the bottom of the mountain, is it next to the sea?

T1 Yes.

Where is the bottom of the mountain?

T2 The bottom of the mountain is deep down in the soil.

So if I stand at the bottom of the mountain, does that mean I am standing at the sea level?

- T2 When you say sea-level do you mean deep down the sea?
T1 No, sea level is that upper part of the sea. The top of the sea where you find sand.

Now I am standing on the land at the bottom of the mountain, okay? Do you think I will be standing at the level of the sea?

- T2 Yes.
T1 Yes, on the level of the sea, since the lowest land next to the sea.

So, if I am standing at the bottom of Mont-aux Sources, I will be standing at the sea level?

- T1&2 Yes
It is a tricky question.

So how many metres do I have to climb?

- T2 3480m.
PE1 Yes.
PE2 No. Because the sea is deep.

(Asked the question again, seemed confused)

I am standing on the land at the bottom of Mont-aux-Sources. Will I have to climb etc....?

- PE1 Yes.
PE2 Oh, yes I agree now.

8. Read the passage about "The very high mountains" on page 5.

**a) What is a range of mountains?
Can you give me an example?**

b) What is the escarpment?

- a)G1 A line of mountains.
G2 Yes.
G1&2 Drakensberg. Stormberg, Nuweveld.
b)G1 The line along the top of the highest mountains.
G2 Yes, I do.
a)C1&2 A line of mountains.
(Both gave correct examples)
b)C2 The line along the top of the highest mountains.
C1 Agree.
a)T1 A line of mountains.
T2 Yes.
T1 Drakensberg.

T2 Stormberg.

b)T1&2 Line along the top of the highest mountains.

a)PE2 A line or chain of mountains.

PE1 Yes.

PE1 Drakensberg, Stormberg.

b)PE1 A line on top of the highest mountains.

PE2 Yes.

9. Read the paragraph about "The high, flat land" on page 6.

a) What is the plateau?

b) Where is it?

c) Are the Magaliesberg, Waterberg, Soutpansberg and the Witwatersrand part of the plateau?

a&b)G2 Is a high flat land.

G1 On the other side of the escarpment away from the sea ... from the east.

c)G1 No.

G2 Yes, they are, I was thinking about the escarpment.

a)C1 Its a high, flat land.

b)C1&2 In the middle part of SA.

c)C1&2 Yes.

a)T2 The high flat land on the other side of the escarpment, away from the sea.

T1 Table land is another name.

Where is it?

T1 Magaliesberg mountains, Drakensberg mountains.

b) **Where is the plateau? Are those mountains the plateau?**

T1 Oh no, well, the Magaliesberg and the Drakensberg are on the high flat land in the Transvaal.

T1&2 Away from the sea.

c)T1&2 Yes, they are the lowest part of the plateau.

a)PE2 The high flat land on the other side of the escarpment.

PE1 Yes.

.b)PE1&2 Yes.

10. Read the passage about "The low land near the sea" on page 6.

a) What is the difference between the coast and the coastal plain?

b) Where is the coastal plain?

a)G1 The coastal plain is the low land near the sea and the coast is where the sea and the land meet.

b)G1&2 Near the sea.

- a)C2 The coast is the edge of the land where the land meets the sea.
 C2 The coastal plain is the land near the sea ...
 C2 ... the low land ...
 C1 Yes, low land.

b)C1 Near the sea.

- a)T2 Coastal plain is the low land near the sea.
 T1 And the coast is the edge of the land, where the land meets the sea.

b)T1 Near the sea.

Where does it start and end?

T2 One the east and south east and on the west, all along the coast.

- a)PE2 Coast is the edge of the land where the land meets the sea and the coastal plain is the low land near the sea.

PE1 Yes.

b)PE1&2 Near the sea.

**11. Read page 7.
 What are the plateau slopes?**

- G1 The land between the escarpment and the coastal plain.
 G2 Yes ...its eh ... the slopy area from the top of the escarpment down to the sea.
 C2 The land between the escarpment and the coastal plain.
 C1 Agreed.
 T1 Where the land goes up from the plain to the escarpment.
 T2 Yes.

- 12. Read pages 7 and 8 and look at the picture on page 7 and 8. Now close your books and point out on the model (model of relief of South Africa provided):**
- the plateau slopes (where they start and where they end).
 - the coastal plain (where it begins and where it ends).
 - the escarpment (where it begins and ends).
 - the plateau (where it begins and ends).

Plateau slopes

G1&2 (Correct)

Coastal plain

(Correct)

Plateau

(Correct)

Plateau slopes

C1&2 (Correct on East and West coasts)

Coastal plain

C2 Between the sea and the coast.

C1&2 (Pointing correctly along whole coastline)

Escarpment

C1&2 (Pointed correctly)

Plateau

C1&2 (Pointed correctly)

Plateau slopes

T1 (Pointed to escarpment, then...) No, they are between the coastal plain and the escarpment, so they are in the middle (points vaguely to plateau slope areas).

T2 I've got to establish the plateau first.

Where are the plateau slopes?

T1 I'm not quite sure I know them theoretically, but I'm confused on the model.

Coastal plain

T1&2 (Both agree correctly)

Plateau

T1&2 (Agree correctly)

Escarpment

T2 (Shows it correctly)

T1 I am thinking of what it is first, it is the lining on the top of the mountains, yes I agree or the edge.

Plateau slopes again, show me on the relief

T2 (Points to the correct places)

T1 (Points correctly)

Plateau slopes

PE1&2 (Correctly, East and South, top of mountains to coastal plain)

PE1&2 Coastal plain (Correctly)

PE1&2 Escarpment (Correctly)

PE1&2 Plateau (Correctly)

13. Read the Task on page 8 and fill in the missing words.

G1&2 Coastal plain
Plateau slope
Escarpment
Plateau

C1 Coastal plain
Plateau slope
Escarpment
Plateau

T1&2 Coastal plain
T2 Plateau slopes
T1 Plateau (incorrect)
T1&2 Escarpment
T2 Plateau
T1 Escarpment (incorrect)

PE2 On the coast

PE1&2 Coastal Plain
Plateau slopes
Escarpment
Plateau

Passage 3. The weather in South Africa
Pre-Reading Questions

Questions to be answered before reading the passage
(Background knowledge)

1. What is a climate?

G2 Climate is a weather condition over a long period as compared to weather.

G1 Climate of a place we mean, the rain, the rainfall, the temperature - the coldness and hotness of a place.

C1 A climate is where you get a hot day, cold day ...

C2 The type of weather.

T2 The behaviour of a place ... when do they get their rains ... four seasons, which is the hottest or coldest, when do they get their rains, what type of rains do they get and how often do the rains occurs.

T1 Yes, and the factors that influence that particular type of weather.

PE1 Climate has ... eh .. got ... eh, something related with seasons, that means how is eh how are the days and nights during the whole year. Cold, hot, rainy etc.

PE2 Climate is the weather changes, how hot or cold a day is, or rainfall.

2. **What is a drought?**

- G1 A drought is a scarcity of rain in a particular area. When there is no rain it is dry, dry.
G2 Agree.
C1 A drought is when there is no rain, everything is dry. Where there is no rain there is no vegetation, where there is no vegetation there is a drought.
C2 Yes, agree.
T1 When there is no rain.
T2 A period when there is less rain or practically no rain.
PE2 It is when the rain is very scarce.
PE1 Agree.

3. **What is a rain-bearing wind?**

Tell what you know about rain-bearing winds in South Africa?

- G1 A rain bearing winds are winds that bring rain to a certain place.
G2 I would say they are winds with moisture, particularly when they blow across a sea or ocean to the land, so they will bring rain to the land.

Rain-bearing winds in SA

- G2 Ja, I think we are fortunate to have the Mozambique current which is warm on the Eastern side, so the south east trade winds which blow in summer to the land, they sort of bring rain to the land, so they come bearing rain.
C1&2 It is the wind that causes the rain to fall.

In SA?

- C1 Not sure.
C2 The moisture when the wind is moist so the rain comes, not sure.
T1 Rain-bearing are the type of winds which have rain ... are the winds that are accompanied by rain.
T2 They are the winds that bring rain to a certain area.

In SA?

- T2 We've got to think of the relief of SA and say the Westerly winds and the Easterly winds.
T1 So they are the rain bearing winds in SA.
PE2 It is moist air which carry rains in a certain area.
PE1 Yes.

In SA?

(No reply)

Text-Interaction Questions

Questions to be asked after reading the passage

1. **Read sections 1 and 2 on pages 1 and 2.**
What is a climate?

- G2 The climate is the weather condition over a long period of time, say a year, as a rule year after year, so its the climate.
G1 Climate is when you talk about the winters and summers on all the days of the year.
C2 A climate is the weather of that particular place for the whole year.
C1 It tells us about the rain for the year.
T1&2 A climate is the story of the weather in different places.
PE2 It is the changing of the weather in winter or summer all the year round.
PE1 Yes, the changing of the weather all year round.

2. **Read section 3 on pages 2 and 3.**

- a) Can you say what rain-bearing winds are now?
b) Look at the map on page 3.

What do the arrows show?

- a)G1 Rain bearing winds are the winds which blow from the ocean to the land and bring rain to the land.
G2 Agree.
b)G1 They show the winds, the directions of the winds.
G2 Yes, I agree.
a)C1 It is the wind which contains the rain.
C2 The wind which comes from the sea, because they will bring rain.
b)C2 Arrows show us that the winds come from the Indian Ocean so they bring rain to Durban. Also in Cape Town the winds come from the Atlantic ocean to Cape Town.
C1 Yes.
a)T1 Rain bearing winds are winds that bring rain to a particular part.
T2 Agree.
b)T2 The direction from which the winds blow.
T1 They are the winds bearing rain.
a)PE1 Winds that bring rain from the sea.
PE2 Yes, from the sea to the land.
b)PE1&2 They are showing the winds which are blowing from the sea to the land.

3. **Read sections 4 and 5 on pages 4 and 5.**

- a) What makes the weather rainy and wet in Cape Town?
b) Why is the land often dry in the Little Karoo?

- a)G2 First it is the rain-bearing winds which blow to the land and its the relief which are the mountains there.

Could you explain?

- G2 So when the wind is blowing off shore to the land they meet the high mountains they catch the rain there.
- G1 Yes I'd say its the relief - when the westerlies are blowing they are being stopped by the Hex river mountains and there is rain on the western side.
- b)G1 Because when the wind gets there they have been robbed of rain by the mountains.
- G1 Yes, its because of the mountains, the Langeberg mountains, they stop the rain from getting over to the Little Karoo.
- G2 Yes, the terms windward and leeward, its on the leeward side.
- a)C2 It is because of the rain bearing winds and also because Cape Town is a mountainous area.
- C1 I agree.
- b)C1 Since the Karoo is a dry place there is no rain, its away from the sea and it doesn't have that form of warm moist air there.
- C2 It is far from the sea and far from the mountains so there are no rain-bearing winds.
- C1 And even the mountains that are there stop the rain from coming.
- a)T1 First point number one, there are rain bearing winds in Cape Town, and the second things is that there are high mountains near Cape Town.
- T2 Agree.
- b)T1 In the Little Karoo, first it is the inland. It is not near the sea so there is a desert. There is no rain in the Little Karoo because it is right in the inland, so it is dry.
- T2 The mountains stop the big clouds from getting to the Little Karoo.
- T1 Yes.
- a)PE2 It is because of the high mountains, there are many high mountains in Cape Town, and because of the rain bearing winds.
- PE1 Yes.

What happens that causes it to rain?

- PE1 The rain bearing winds that carries the rain from the sea happens to block the high mountains and the rain starts falling.
- PE2 To add on, the wind blows the clouds against the mountains, so when the clouds are near the mountains, it starts to rain.
- b)PE1 The Langeberg mountain blocked the winds from getting to the Little Karoo.
- PE2 Yes.

4. Read section 6 on page 6. What is the difference between a rainstorm and a thunderstorm?

- G1 A thunderstorm is when there is rain, lightning and thunder together.
- G2 A rainstorm is when the heavy rain falls.

What is the difference then?

- G2 The thunder and lightning.
- G1 Yes.
- C2 The thunderstorm is the togetherness of rain, wind and lightning.
- C1 Yes, agree.

And the rainstorm?

- C1 There are little stones, white stones.
- C2 And a thunderstorm is stronger than a rainstorm.
- T1 A thunderstorm is when there is thunder, lightning and rain at the same time. A rainstorm is when there is rain accompanied by strong wind.
- T2 Yes, a rainstorm is usually heavier than a thunderstorm.

So what is the main difference between them?

- T2 A thunderstorm is destructive when it occurs, especially on the autumn because it kills plants. On the other hand even a rainstorm can be destructive if it is heavy.
- T1 It is usually accompanied by stones, hailstones.

Which one is?

- T1&2 The rainstorm is always with strong wind and hailstorms.
- T2 And the rainstorm is usually prevalent, whereas the thunderstorm chooses certain areas and some areas are not affected by thunderstorm.
- PE1 In a rainstorm the whole area is getting rain, but in a thunderstorm certain places getting rain and other places do not.
- PE2 In a thunderstorm there is that thunder and flashing of lightning. It is not in a rainstorm.

What is a drought?

- G1 It is a time when there is not enough rain.
- G2 Yes, it doesn't mean there is totally no rain, rain should come, but its not enough.
- C1 A drought is where there is not enough rain for that particular place for people and animals.....
- C2 ... and vegetation.

Is the drought there all the time?

- T1 It depends on areas, in some areas it takes a long time.
A drought is when there is no rain or when there is little rain and the people and animals are dying because there is no water and no vegetation.
- T2 Yes, I would add that a drought is in some places, it is excessive and in some places it is not severe.
- PE2 A drought is when there is very little rain for a long time.
- PE1 Yes ... a period when there is no water for people and animals to drink.

6. **Read page 7.**
Look at the model of the relief of South Africa (provided).
(Point to the positions of De Aar and Cape Town).
Which town gets the most rain?
Can you say why?
(Repeat for Port Nolloth and East London)
- G1 Cape Town gets more rain because of the westerlies that bring in more rain in winter and De Aar is on the plateau so there is little rain.
- Why is there little rain there?**
- G2 Could I help her? I think when the winds blow there they are already dry because when the rain rains on the other side, the windward side of the mountains.
- East London - Port Nolloth?**
- G1 East London.
G2 Agree.
G1 Because the places on the east are on the ... the west side , I mean all these part on the east side are getting more rain from the easterlies bringing the rain and Port Nolloth is on the west. The places on the west get little rain.
- Why?**
- G1 Because of these mountains (the escarpment).
G2 Yes, the rain bearing winds don't get on Port Nolloth and the winds are dry by the time they get there.
- Cape Town and De Aar?**
- C1 Cape Town.
- Why?**
- C2 Because it is near the sea.
C1 And even some mountains here (pointing to mountains) stop the rain from getting to De Aar.
- East London and Port Nolloth?**
- C1&2 East London.
C1 The eastern parts get a lot of rain than the western part.
C2 Yes....
- East London - De Aar?**
- T1&2 East London.
T1 Because it is along the coastal plain.
T2 And there are rain-bearing winds from the ocean.

What about De Aar?

- T2 There are no rain-bearing winds there.
T1 Yes, it is inland.

What stops the rain from getting there?

- T2 The altitude, the mountains.
T1&2 ... can drive away the wind.

Cape Town and Port Nolloth?

- T1&2 Cape Town.
T1 There are also wind-bearing rain there.
T2 Port Nolloth is in the Kalahari Desert so there is no rain.

East London - Port Nolloth?

- T1&2 East London. It is not near the desert and there are no rain bearing winds in Port Nolloth.

De Aar and Cape Town?

- PE1&2 Cape Town.

Why?

- PE1 Cape Town is near by the sea and De Aar is far away from the sea.
PE2 De Aar is near the desert and Cape Town is near the sea.
PE2 Cape Town is always being touched with the rain bearing winds. And, eh, De Aar is seldom touched by rain bearing winds.

East London and Port Nolloth?

- PE1&2 East London.

Why?

- PE1 On the east side are there a lot of rains than on the west side.
PE2 Agree.

7. What is the difference between a desert and a drought?

- G2 I would say a drought is an area in a year or at that time suddenly gets less rain or no rain. But a desert is sort of a permanent experience, that little rain gets there or no rain.
G1 Yes, little rain gets in a desert.
C1 A desert is a place where there is no rain. The plants there is too little, didn't get enough rain. The drought is where there is dry and no rainfall for that moment. Its not like this (pointing to a desert).
C2 In a desert the weather, the climate is the same all year round. A drought is a special dryness for that particular time.
C1 Yes, agree.

- T1 A desert is an area, a dry area and a drought is a climatic condition, so it does not occur time and again, whereas if a place is dry it is dry. If its a desert, its a desert, there's no change.
- T2 In a desert there is perpetual drought, whereas in a drought there might be a little rain.
- PE1 On a desert are there little rains or no rains. But on the drought its just a certain period of time that there is no rain.
- PE2 Agree.

8. Look at the map on page 8.
- What does it show?
 - Name one area which gets more than 1000 millimetres of rain in a year.
 - (Point to the western Bophuthatswana region).
How much rain falls in this area in a year?
 - How much rain falls in Cape Town in a year?

- a)G2 Rainfall.
G1 Shows how much rain fall.
G2 ... in different parts.
- b)G1 Durban.
G2 Eh...(long pause, uncertain)... Mossel Bay or Knysna region as Durban.

(Looked at key)

- c)G1&2 Between 250 and 375.
d)G1&2 375-750.

- a)C1&2 It shows how much rain falls in different parts in a year.
b)C1 Eastern part...
C2 Durban.
c)C1&2 Little rain.
C1 250-375mm.
d)C1 Between 375-750.
C2 Yes ... not very wet, not very dry.

- a)T1 This map shows the rainfall, how much the rain falls in different parts.
T2 Hence there is a key.
b)T2 In Durban.
T1 And Mossel Bay.

How do you know that?

- T2 Because of its relief and its nearer the coast and rain-bearing winds.
T1 And also the key helps us.
c)T1&2 250-375mm.
d)T1&2 About 750, 375-750mm.

- a)PE1&2 Rainfall in different parts in a year.
b)PE2 Port Elizabeth.

Keep to the names on the map

- PE1 Durban.
PE2 More than 1000?, (long pause) ... not sure.
c)PE1&2 250-375mm.
d)PE1 375-750mm.
PE2 Agree.

9. Look at the map on page 9.
What does it show?
What does this dark part here show? (Point to South Western Cape).
What does this dark part here show? (Point to Natal area).
What does this light part here show? (Point to Central Cape area).

- G2 It shows us rainfall.
G1&2 ... in different parts of the country.

South Western Cape

- G1 It shows us when rain falls (both uncertain about whether to use the key on next page or not until prompted, then...)
G2 It shows rainfall in winter.
G2 Yes.

Natal

- G1 No reply.
G2 Summer rain.
G1 The amount of rain in summer - there is a lot of rain in summer.

Do you agree?

- G2 No, it rain in summer.

It doesn't show a lot?

- G2 No, it doesn't show us that a lot of rain falls in summer.

Central Cape

- G2 Shows us summer and winter rains, not enough.
G1 It shows us that the rains are falling only in summer. The little rains are falling only in summer.
G2 But they also mention winter.

What do you say now G1?

- G1 That there is little rain in winter and summer.
C2 Also show the rain fall in different seasons.
C1 Parts and seasons.

South Western Cape

C2 More rain in winter.

Natal

C1&2 More rain in summer.

Central Cape

C1 The desert, low rain.

C2 There's no rain.

Look on the next page - does it help you a bit?

C1 Its a dry place ...

On page 10, not page 8

C1 In winter and summer its only a little rain.

C2 Yes.

T1 It shows us the rain fall, the differences between parts. The differences of rain that falls in different parts.

T2 And the time when it falls in different seasons.

T1 Yes.

South Western Cape

T1 Rainy in summer.

T2 In winter.

T1 Yes, in winter.

Natal

T1 There is too much rain in summer.

T2 In summer, yes.

Central Cape

T1 It shows us dry and wet weathers.

T2 Rains in, eh...

Look at the key

T1 There is little rain or no rain, slightly no rain or little rain. (Both struggled and turned to the key for the previous map)

PE1 Rainfall, when the rain falls in different parts.

South Western Cape

PE2 Area which gets winter rainfall.

PE1 Yes.

Natal

PE2 Area which gets summer rainfall.

You can refer to other parts of the chapter. You don't only have to look at that page.

(Long pause, referring to previous map's key - confused)

Central Cape

- PE1 Little rainfall.
- PE2 Yes.

- 10a) Look at the picture in the middle of page 11.
 - What is it?
 - What does it show?
 - What are the thick black lines? (What do they show?)
- b) When does Cape Town get most of its rain?

- a)G2 It is a graphic representation.
 - G1 Yes.
 - G2 Of rainfall.

Thick line?

- G1 Bars, the amount of rain in millimetres.
- G2 Yes.
- b)G1&2 In June.
- a)C1 A graph.
- C1&2 It shows us how much rain all year.
 - C2 More rain.
 - C1 The bars which show the rain.
- b)C2 In winter, especially May, June, July.
 - C1 Yes.
 - T2 Its a graph which shows us the amount of rain which is in millimetres in each of the seasons in millimetres.

In which place?

- In Cape Town ... eh ... which place is it? (did not know)
- T1 There is too much rain in Cape Town.
- T2 Yes, in Cape Town.

Thick black lines?

- T1 They indicate the months.
- T2 The millimetres, the amount of rain.
- T1 They also show us how much rain falls in a month, this is the scale we use.
- b)T1&2 In June.
 - T1 Yes, in June.
- a)PE2 A graph which shows us rainfall in Cape Town
 - PE1 Yes.
 - PE1 Measurements of rainfall in each month.
- b)PE1&2 In winter.

11. Look at the picture on page 12.
In which month does Pretoria get most of its rain?
How much rain falls in that month?

G1&2 January.
G1&2 130-135.
C1&2 January, February, March - Summer months.
C1&2 January, more than 130mm.
PE1 Summer.
PE2 January.
PE1 130mm, more than 130mm.
PE2 Yes.

- 12a) Look at the pictures on pages 11 and 12 again.
When is the rainy season in each of these places? (Summer or Winter?)
How do you know?
b) Look at the graph at the top of page 13.
When is the rainy season in Mossel Bay?

a)G1 Cape Town in winter, Pretoria in Summer.
G2 January is summer and June is winter. The bar of January in Pretoria. In January most of the rain is in January.
b)G1 All year round.
G2 Yes, I agree. In summer it gets rains brought about by south east trade winds and in winter it gets rains brought by the westerlies.

a)C1 p11 Cape Town is winter.
C2 Pretoria is summer.

How do you know?

C1&2 The bars show us how much rain is in each month.
b)C1&2 All year round.
a)T1&2 Cape Town in winter season.
Pretoria, most of the rain is in January, summer.

How do you know?

The bars, there is a lot of rain in January, February, March and then October, November, December.
b)T1 September... which season? Oh, in spring.
T2 More or less all the year round with a slight difference in June, July.
T1&2 More or less all year round.
a)PE P11, Winter.
PE1&2 P12, Summer.

How do you know?

PE1 The graphs show that.

How?

PE2 The summer months in Pretoria are January, February, March and then October, November and December. In Cape Town it is April, May, June, July, August and September.

b)PE1&2 It rains all the year round.

13. Turn to page 14 and do Task 2

a) Summer rain

G1 Mossel Bay and Durban.

G2 - and Pretoria.

Does Pretoria get a lot of rain or a little rain in summer?

G2 A lot of rain - it is the same as Durban on the key.

G1 Lot of rain.

b) Rain in winter

G1&2 Cape Town.

Another town?

Not on the map.

c) Winter & Summer

G1&2 Mossel Bay.

Summer

C1&2 Durban and Pretoria.

Winter

C1&2 Cape Town.

Winter & Summer

C1&2 Mossel Bay.

Rain in summer

T1 Durban.

T2 Even Mossel Bay because there is rain throughout the year.

Any other places?

T2 I'm not sure about Pretoria.

Winter

T1&2 Cape Town.

Winter and Summer

- TL Mossel Bay gets rain in winter and summer.
T2 What about Pretoria? I'm not sure.
T1 It is not along the coast so it is a bit dry.

So do they get rain in summer?

- T2 It can get rain in summer because of the altitude.

Any other reason?

- T1 Since it is not very far from Durban, so it might get rain bearing winds from Durban.

Summer

- PE1 Mossel Bay, Durban, Pretoria.
PE2 Durban and Pretoria.

Winter

- PE1&2 Cape Town.

Winter and Summer

- PE2 Mossel Bay.

Post-Reading Questions

Readers now close their books and answer the questions

- 1 Is this possible in areas where there are thunderstorms?
(Explain your answer).
There are two mealie farms next to each other. On one farm the mealies are green and growing well. On the other farm next door, the mealies are dry and some are dead.
- G1 Yes, thunderstorms affect some places on the land, they don't affect the whole land.
G2 Yes it can pour here, but not there.
C2 Yes, it is possible.

Why?

- C2 The thunderstorm is not like when it is raining, can be a thunderstorm here and no thunderstorm here.
C1 Yes, I agree.
T2 It is possible because the manner of thunderstorm is a certain formula. It may thunder in a certain area and on area next to it may not get rain.
T1 Yes, referring to the picture I'm seeing here the picture of 2 boys and that girl. They were affected by that thunderstorms but that girl was not affected since they were not very far from each other.
T2 The mountains prevented the thunderstorm from the prevailing winds.

PE (Forgot to ask PE post reading questions, although from the previous questions on thunderstorms it is likely that they would have got 1 right and the differences between the map was understood.)

2 What do you think is the main difference between:

- the map on page 8, and
- the map on page 9?

(Long pause)

G1 The map on page 8 shows us how much rain falls in different parts of SA in a year. The map on page 9 shows us when rain falls in different parts of SA.

C1 Page 9 shows the rain in different seasons. Page 8 shows the whole part of the rain for the year.

C2 Yes, I agree.

T1 The map of page 8 shows **how much** rain falls in different parts in a year.

T2 The map on page 9 shows us **when** rain falls in different parts.

T1&2 Yes.

T1 I find the weather of SA a difficult part. You must know what are climates and what is weather before you go further.

T2 That is what is giving us a headache up to Std 7, climate, relief, plateau, escarpment ... the terms and the understanding of the teacher and the practical application.

T1 I was only able to understand the plateau when I went to Bloemfontein and I saw the flat land and the mines.

T2 We were preaching about mines, and shafts, and the most deep mine is like me, and I didn't know that there are compartments in the mine. I thought these people go straight down and I thought that there is a big circle down there at the bottom. I thought that there was a big circle, I didn't know there are compartments.

19 READING SKILLS

(This list is taken from John Munby's *Communicative Syllabus Design*, (1978).

1. Recognizing the script of a language.
2. Deducing the meaning and use of unfamiliar lexical items.
3. Understanding explicitly stated information.
4. Understanding information when not explicitly stated.
5. Understanding conceptual meaning.
6. Understanding the communicative value (function) of sentences and utterances.
7. Understanding relations within the sentence.
8. Understanding relations between the parts of a text through lexical cohesion devices.
9. Understanding cohesion between parts of a text through grammatical cohesion devices.
10. Interpreting text by going outside it.
11. Recognizing indicators in discourse.
12. Identifying the main point or important information in a piece of discourse.
13. Distinguishing the main idea from supporting details.
14. Extracting salient points to summarize (the text, an idea, etc).
15. Selective extraction of relevant points from a text.
16. Basic reference skills.
17. Skimming.
18. Scanning to locate specifically required information.
19. Transcoding information to diagrammatic display.

READING IN THE SUBJECT AREAS, GRADES 7-8-9
From New York Board of Education, cited in Luzner & Gardner (1979)

READING SKILLS	SUBJECT AREAS				
	Language	Social	Science	Maths	Industrial
Word recognition					
1. Recognise basic words	*				
2. Use phonetic analysis	*				
3. Use structural analysis	*				
4. Use contextual clues for word meaning	*	*	*	*	*
5. Use dictionary to check meaning	*	*	*	*	*
Comprehension					
1. Understand word and sentence meaning	*	*	*	*	*
2. Find main idea and related details	*	*	*	*	*
3. Organise and classify facts	*	*	*	*	*
4. Perceive sequence of ideas	*	*	*	*	*
5. Draw inferences and conclusions	*	*	*	*	
6. Understand problems	*	*	*	*	*
7. Form judgements	*	*	*	*	
8. Predict outcomes	*		*	*	
9. Read critically - distinguishing fact from opinion	*	*	*		
10. Read for appreciation	*				
11. Understand relationships	*	*	*	*	*
12. Follow directions	*	*	*	*	*
Work Study					
1. Understand parts of a book	*	*	*	*	
2. Understand the index of a text	*	*	*	*	
3. Use of the dictionary	*	*	*	*	
4. Use of the encyclopaedia	*	*	*		
5. Understand library techniques	*	*	*		
6. Interpret maps	*	*	*	*	
7. Understand charts	*	*	*	*	*
8. Interpret graphs	*	*	*	*	
9. Understand diagrams	*	*	*	*	*
10. Adjust reading rate-skimming	*	*	*	*	*
11. Select and evaluate information	*	*	*	*	*
12. Use techniques of retention	*	*	*	*	*

(The * under each subject area indicates that the reading skill is relevant to that particular subject.)